Research Department
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Taking Stock

Cautious businessmen, wary of a sales slowdown in the present cyclical environment, probably are making a thorough check of their stockrooms today to make sure that they are not overloaded with inventories. For the most part, they need not worry, since buyers have swept the shelves clean in many shops and factories. Altogether, only a modest amount has been added to business inventories during the recent boom period, and inventory-sales ratios have fallen to very low levels in the past several quarters.

At the same time, some straws in the wind suggest that we are witnessing the beginning of a buildup in inventories. Between March and June, the overall inventory-sales ratio in manufacturing and trade rose from 1.41 to 1.44. In July, 46 percent of the respondents in the monthly survey of the National Association of Purchasing Management reported that they were now adding to their stocks—up from a 39-percent figure in June. Although most businessmen welcome any supplies that they can get, some may be encountering an element of unwanted accumulation, of the type which could eventually generate an inventory correction.

Inventories vs. sales

Changing trends in inventories can be discerned by analyzing the relationship between total inventories and total sales in manufacturing and trade. During the past quarter-century, the ratio has fluctuated cyclically, between a low of 1.36 in the scare-buying period of 1950 to a high of 1.64 in the recession year 1970. From that recent peak, however, the ratio plummeted to 1.42 by the second quarter of 1973.

Over the long-run, rising levels of sales naturally have called for a rising dollar volume of inventory. For example, the $206 billion of inventory needed today to support a $1,267-billion volume of final sales is considerably higher than the $87-billion in stocks which supported the $449 billion in final sales a decade and a half ago, despite a sharp decline in the inventory-sales ratio between those two dates.

Over time, also, the constant introduction of new products into the economy plays a part in raising total inventory requirements. Businessmen must face the competitive necessity of maintaining a wider range of styles and models of every product, and of having goods available to satisfy their customers' wants for speedy delivery and production to order. Nonetheless, these pressures have been offset to some extent over time by several factors which tend to reduce shelf-space requirements.

The greatest efficiencies have come from innovations in operations research and computer techniques, which have increased the efficient movement of goods all the way from the time of raw-material purchase to the time of final sale. These developments have helped conserve inventories by speeding up stock control and improving the locational efficiency of plants and warehouses.

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Aberration in 1960's?

In view of the importance of these factors, why hasn't the inventory-sales ratio shown a significant downtrend over the past quarter-century? Alternatively, does the sharp increase experienced in the late 1960's simply represent an interruption in a long-term pattern of decline? There is some tentative evidence to suggest that the answer lies in the latter direction. If so, some explanation must be found for the sudden rise in the inventory-sales ratio in 1966 and the maintenance of that ratio at a high level for a prolonged period.

That high ratio was due primarily to a buildup of inventories of defense products, especially aircraft. At all times, inventories are especially important in the durable-goods sector of the economy, since manufacturers in this sector must hold on to large quantities of goods in process because of the prolonged time required for production and the long time-span between order-taking and delivery. During the Vietnam buildup, this was especially true for aircraft and other products with long manufacturing lead-times.

As a consequence, the ratio of work-in-process inventories to durable manufacturing sales jumped from 0.76 to 0.94 between 1965 and 1967. This ratio rose further until the 1970 recession, but it has since fallen to 0.86 in the second quarter of 1973, a reflection of weakness in new defense orders and the completion of earlier projects. Even so, the inventory-sales ratio remains historically high for the aircraft sector, while ratios in practically all other sectors of the economy are now at or below the very low levels reached in 1965.

Today's stocks

In dollar terms, the net change in stocks has been quite small throughout the current boom period. The picture is muddied, however, by the fact that the modest net growth in business inventories has been accompanied by a massive increase in the book value of stocks. In the second quarter of 1973, non-farm inventories rose at a $4.4-billion annual rate, considerably below the rate maintained throughout the last decade—but book value increased at about a $28.0-billion rate, two to three times as fast as in any other recent year. The explanation is found in the techniques of national-income estimation, whereby the inventory change is found by subtracting an inventory valuation adjustment (IVA) from the rise in book value.

The inventory-change component of GNP is designed to represent the change in the physical volume of inventories, valued at the average price prevailing during each time period. But this is not the same as the change in book value. The latter reflects not only the difference in physical volume, but also the difference between the prices of replacement goods and the prices of goods removed from inventory. This latter adjustment—the IVA adjustment—has been spectacularly large throughout the recent inflationary period. According to incomplete

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data, it approximated a $23.5-billion annual rate in the April-June period, three times greater than in previous severe inflationary periods, such as 1972 or 1947. The current estimate of a modest inventory buildup thus is the end result of a complex calculation, whereby a very high price adjustment is subtracted from a very high increase in the book valuation of all inventories.

Tight supply

Assuming this IVA correction is accurate, we are left with the picture of a very low level of stocks supporting the ongoing business boom. This conclusion is backstopped by a number of indicators suggesting a tight supply situation. Over the past year and a half, for example, the percentage of firms reporting longer purchase commitments (60 days and over) for production materials rose from 53 to 78 percent, while the change in durable-goods backlogs rose from $0.6 billion to $2.8 billion in the same time-span.

An interesting development in this situation is the recent difference in behavior of durable- and nondurable-goods stocks. In durable goods, normally the most cyclically volatile sector, a beginning of a buildup is strongly evident. Within a year and a half, the change in durable stocks went from a minus $1-billion to a $9-billion annual rate —the highest increase since the 1966 inventory boom. In nondurable goods, where few fluctuations normally occur, a remarkable shift has developed over the same time span, from a plus $6-billion to a minus $4-billion rate—the first significant decline in decades. According to these figures, buyers apparently have begun to sweep the shelves clean of food and other nondurables while holding down their purchases of durables somewhat. Nondurable-goods stocks should return to more normal levels, however, as the scare buying and other distortions associated with the price freeze are eliminated.

Future trends

The growth of stocks undoubtedly has been limited by the technological and managerial innovations developed in earlier years for efficient inventory control—and probably also limited recently by the high interest rates charged on funds to finance inventories. Cyclical influences must still be heeded, however. The level of inventory-sales ratios continues to move inversely with business activity; thus, these ratios should rise if sales decline, and they should remain low if sales continue to rise.

Yet, if business should turn sluggish, a severe cutback in inventories need not automatically follow. One reason is the fact that the economy went through an actual recession in 1970 without any inventory reduction—the first time in the business-cycle history of the past generation. More importantly, few if any problems have yet developed at the point where over-stocking generally becomes first visible—that is, at the retail level and at the finished-goods level in durable manufacturing.

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BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT

(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 8/15/73	Change from 8/8/73	Change from year ago Dollar	Change from year ago Percent
Loans adjusted and investments *	75,561	+ 474	+ 12,117	+ 19.10
Loans adjusted—total*	58,664	+ 388	+ 12,120	+ 26.04
Commercial and industrial	20,357	+ 38	+ 3,661	+ 21.93
Real estate	16,967	+ 118	+ 2,885	+ 20.49
Consumer instalment	8,527	+ 19	+ 1,340	+ 18.64
U.S. Treasury securities	5,153	+ 12	− 767	− 12.96
Other securities	11,744	+ 74	+ 764	+ 6.96
Deposits (less cash items)—total*	71,968	+ 588	+ 9,614	+ 15.42
Demand deposits adjusted	21,416	+ 99	+ 1,941	+ 9.97
U.S. Government deposits	465	+ 164	+ 56	+ 13.69
Time deposits—total*	48,892	+ 320	+ 7,557	+ 18.28
Savings	17,599	− 93	− 611	− 3.36
Other time I.P.C.	22,574	+ 554	+ 6,517	+ 40.59
State and political subdivisions	5,919	− 138	+ 739	+ 14.27
(Large negotiable CD's)	11,711	+ 425	+ 6,072	+ 107.68

Weekly Averages of Daily Figures	Week ended 8/15/73	Week ended 8/8/73	Comparable year-ago period
Member Bank Reserve Position			
Excess reserves	50	20	− 2
Borrowings	226	239	21
Net free (+) / Net borrowed (−)	− 176	− 219	− 23
Federal Funds—Seven Large Banks			
Interbank Federal funds transactions			
Net purchases (+) / Net sales (−)	+ 463	+ 109	− 1331
Transactions: U.S. securities dealers			
Net loans (+) / Net borrowings (−)	+ 651	+ 267	− 279

*Includes items not shown separately.

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