

Research Department
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How Much on the Shelf?

Many analysts are making significant changes in their business forecasts in the wake of the Commerce Department's dramatic upward revisions in inventory statistics.

According to the revised figures, businessmen were much more aggressive in their stockbuilding in late 1973 and early 1974 than had previously been suspected—or else had found themselves involuntarily accumulating substantial amounts of unsold goods.

The task of analysis is complicated by the need to reconcile two apparently contradictory pieces of information:

- The conventional inventory-sales ratio has shown little change over the past year and, indeed, is close to its historical low.
- A separate inventory-sales ratio derived from the GNP accounts has shown a sharp increase since early 1973, of the type which normally precedes an inventory recession. The latter indicator seems to be closer to the facts, and thus suggests that the near-term business outlook will be weaker than previously anticipated.

Massive revisions

The customary midyear revisions in the national-income accounts were unusually large this year in such areas as farm income, personal saving and (especially) inventories. The discrepancies led Otto Eckstein, a former member of the Council of Economic Advisers to comment: "The national income accounts are not a sufficient information frame

in a period of rapid inflation. It is impossible to accurately deflate the nominal GNP statistics to produce the real magnitudes."

The inventory revisions were so great that they now give a qualitatively different picture of the course of the economy than most analysts had before midyear. According to the new figures, the annual rate of inventory accumulation in the first three quarters of 1973 ranged between \$10.0 billion and \$11.8 billion, considerably above the earlier estimates. Then, in the final quarter of 1973 and the first quarter of 1974, the rate of accumulation jumped to \$28.9 billion and \$16.9 billion, respectively—about \$11.0 billion higher than first estimates in both cases. (Inventory change in constant dollars showed similar revisions.) The large revisions were based on new information available from statistical studies of corporate-tax returns and from the 1972 Census of Business.

Because of the size of these revisions, most analysts seem convinced that the pace of inventory accumulation will decelerate further in late 1974 and early 1975. (An early indication was a slowdown in the accumulation rate to \$13.5 billion in the second quarter of this year.) Still, there is disagreement about the size of the slowdown. Are we now faced with a substantial overhang of inventories and the prospect of subsequent liquidation which is traditionally a key element in business downturns?

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Finding an answer to that question may be made difficult by the need to adjust for the impact of inflation, as measured by the inventory-valuation adjustment (IVA) in the national income accounts. This series measures the difference between changes in current-dollar value and book value of business inventories. The inventory valuation adjustment averaged \$2.0 billion during the 1960-71 period, but rose to \$7.0 billion in 1972 and then jumped to an unprecedented \$17.6 billion in 1973. The adjustments to inventory values this year have been astronomical even by 1973 standards, as the IVA soared to an annual rate of \$31.0 billion in the first quarter and \$37.9 billion in the second quarter of the year.

Falling ratios . . .

The task of analysis, as already noted, has been complicated by the conflicting signals given off by the conventional I/S ratio. The ratio of total inventories to total sales in manufacturing and trade has remained relatively stable at a historically low level of 1.48 or less for the past year and a half. However, inflation may be causing this familiar business indicator to conceal basic underlying developments, which show up in the form of a serious downward bias in the data. The reason is that inventories are quoted at their book value, which is often their original purchase price, while the value of sales is stated at current (generally inflated) market prices.

Rapid price changes, of the type we have experienced in the past year and a half, accentuate differences in the valuation of inventories and sales, which may then be incorporated into the calculated I/S ratios. Commerce Department analysts cite the following example: If a one-time general price increase occurs with cost of inventories calculated by the commonly used FIFO (first in, first out) method, the higher price is incorporated into inventory book values with a lag, the length of which depends on the rate of inventory turnover. Consequently, until all inventories are valued at the higher price, the price-affected I/S ratio will be at a lower level than if there had not been a price increase. This happens because the price increase applies to only a portion of the inventory (numerator) but to the whole of sales (denominator). Further, the ratio initially will decline to the lower level and then subsequently increase when additional portions of the inventories are valued at the higher price.

Again, if a one-time general price increase occurs, but with cost of inventories determined by the LIFO (last in, first out) method, the price-affected I/S ratio will be at a lower level than if there had not been a price increase. In fact, the ratio would be even lower than with FIFO accounting. The reason is that the price increase is applied to sales and to the inventories charged to cost, assuming no change in the physical volume of inventories—but the price increase is not applied

to the inventories retained in stock, which become in this case the numerator of the I/S ratio.

The downward bias in I/S ratios appears strongest in basic manufacturing industries, where LIFO accounting is most heavily used. (This method is used for more than half of the inventories in primary metals and petroleum and coal products.) LIFO tends, more than other methods, to result in low book values, so that the prolonged decline in I/S ratios which has occurred in basic manufacturing may be attributed in part to the price effect on I/S ratios—and not solely to the impact of the oil embargo and capacity shortages on that key sector of the economy.

... and rising ratios

An alternative (and better) measure of the possible inventory overhang could be obtained by developing an inventory-sales ratio from the GNP accounts, with both numerator and denominator expressed in constant prices. The numerator would be the cumulated change in nonfarm inventories added to the actual stock of inventories in some base year; the denominator would be final sales of nonfarm goods, that is, total product (except structures and services) less inventories.

The derived I/S ratio was quite low in the first half of the 1960's following a decline from the 1961 recession high. The ratio then rose sharply to a new high of 1.77 in the 1967 mini-recession, declined

slightly, and then jumped to a new high of 1.85 in the 1970 recession. In the subsequent boom it declined to an early-1973 low of 1.66, but it has since risen to approach the 1970 peak once again. The recent ratio of inventory to sales, far from being historically low, shows very high values such as have been obtained in the past only on the eve of (or during) sharp liquidations. Reductions in inventory growth or swings from accumulation to liquidation have played a major role in practically all of the cyclical declines of the past quarter century.

There is probably a good deal of desired accumulation in our present inventories, with businessmen seeking to stock up on scarce materials and supplies before prices rise even further than they have to date. However, in view of the high I/S ratio derived from the GNP accounts, it seems unlikely that inventories will continue to build up as rapidly as in the recent past. Also, if the economy continues to show sluggish signs of growth, hedge-buying may decline along with normal replacement buying. With the key inventory sector thus weakening rather than strengthening, the general business outlook could be somewhat less buoyant than previously anticipated. On the brighter side, the economy could experience less rapid inflation from this source, and the banks and capital markets could expect less pressure from businesses financing large inventories.

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BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT
(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 8/14/74	Change from 8/7/74	Change from year ago	
			Dollar	Percent
Loans (gross) adjusted and investments*	83,836	- 641	+7,552	+ 9.90
Loans gross adjusted—	65,876	- 510	+6,876	- 11.65
Securities loans	1,158	- 554	-1,134	- 49.48
Commercial and industrial	23,474	- 20	+3,005	+ 14.68
Real estate	19,740	+ 62	+2,640	+ 15.44
Consumer instalment	9,444	+ 19	+ 748	+ 8.60
U.S. Treasury securities	4,969	- 90	- 290	- 5.51
Other Securities	12,991	- 41	+ 966	+ 8.03
Deposits (less cash items)—total*	79,777	+ 401	+7,031	+ 9.67
Demand deposits adjusted	22,386	- 14	+ 919	+ 4.28
U.S. Government deposits	310	- 91	- 156	- 33.48
Time deposits—total*	55,539	+ 253	+5,925	+ 11.94
Savings	17,765	- 39	- 13	- 0.07
Other time I.P.C.	28,548	+ 209	+5,646	+ 24.65
State and political subdivisions (Large negotiable CD's)	5,936 15,359	- 24 + 221	- 198 +3,721	- 3.23 + 31.97
Weekly Averages of Daily Figures	Week ended 8/14/74	Week ended 8/7/74	Comparable year-ago period	
Member Bank Reserve Position				
Excess Reserves	31	81		89
Borrowings	226	181		226
Net free (+) / Net borrowed (-)	- 195	- 100		-137
Federal Funds—Seven Large Banks				
Interbank Federal funds transactions				
Net purchases (+) / Net sales (-)	+1,277	+1,857		+463
Transactions: U.S. securities dealers				
Net loans (+) / Net borrowings (-)	+ 530	+ 399		+651

*Includes items not shown separately.

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