

Monthly Review



TWELFTH FEDERAL RESERVE DISTRICT

FEDERAL RESERVE BANK OF SAN FRANCISCO

July 1957

Review of Business Conditions 82
Inventories . . . A Pause, No Recession . 85

REVIEW OF BUSINESS CONDITIONS

COMMENTATORS on the economy may very well enrich our phraseology in their attempts to describe recent business conditions. The hunt for succinct descriptions stems from the fact that activity in general has remained high in the presence of obvious weak spots and that credit demand has continued in excess of supply even though the growth in over-all activity has slowed considerably. A brief summary of developments in recent months points up the difficulty of finding an apt label for economic events. While employment has been at or near peak levels so far this year and unemployment has shown little change after allowing for seasonal influences, there have been declines at various times this year in manufacturers' new orders, residential construction, business sales, durable goods production, and hours worked. Most of these weaknesses were associated with a first quarter adjustment in inventories, which, according to preliminary estimates for the second quarter, may already have abated. The improvement in manufacturers' new orders during May, for example, is cited as an indication of more favorable developments. Total business inventories in May increased more, after seasonal adjustment, than in earlier months this year.

In any event, the soft spots have had their offsets. Government outlays for goods and services have continued to rise. Consumer spending has expanded even though the demand for automobiles and household appliances has been lower than producers had anticipated. Plant and equipment outlays continue to rise though the rate of gain is well below that of last year. Exports have risen even more sharply than imports, providing a partial offset to the reduced demand for inventories in the domestic sector. Construction activity in the nation, in dollar terms, has moved to new highs, with housing starts increasing in April and May and holding steady in June.

Generally, the economy has resisted the soft spots rather well. The balance between weaknesses and strengths has kept activity at very high levels, and the rate of expansion in the first

half of 1957 was only slightly below that of the first six months of 1956.

A near balance between contracting and expanding forces is also evident in the Twelfth District. Total nonagricultural employment showed little change from January to May, although it has remained above year-ago levels. Some of the factors responsible for the leveling in business activity in the nation are present in the District as well. The slackened pace of residential building, however, has had more severe repercussions in the District than in the nation as a whole, partially because of the importance of the lumber industry in western states. On the other hand, smaller-than-expected gains in national sales of consumer durables have had a less depressing effect in the District than elsewhere, for most of the components used in assembling automobiles and a large proportion of home appliances marketed in the District are imported from eastern manufacturing centers.

The District economy is also somewhat insulated from weaknesses apparent in machinery and metal industries. While District states export lead, copper, zinc, and aluminum ingots to fabricators in the East, a large proportion of machinery and fabricated metals consumed in the West, including steel, is "imported." The major reasons for the failure of business activity in the Twelfth District to expand as rapidly as in 1956, however, are not completely related to demand in the private sector of the economy. Two of the most important differences so far this year are a slower rate of expansion in aircraft employment and a steady decline in ordnance operations.

District nonagricultural employment records minor increase

District nonfarm employment showed no significant change between March and April and then rose slightly in May after allowance for seasonal forces. The number of people at work increased in manufacturing, trade, finance, services, and government. A substantial part of the increase in total nonfarm jobs during May and almost all of the gain in manufacturing resulted

from the settlement of labor disputes in California and Washington. About 4,000 California auto workers were on strike during the week of the April employment survey, and almost 5,000 were involved in labor disputes in Washington metal and metal fabricating establishments.

As mentioned above, a significant factor in restraining growth in recent months has been the failure of manufacturing employment to expand substantially. Aircraft plants in California have not added workers so rapidly this year as in the latter part of 1956 and there was a small decline in May. In contrast Washington reported a sizable gain of 2,300 workers in May. The depressed rate of activity in the District lumber industry, when compared to year-ago levels, has also retarded employment expansion. A new development in manufacturing has been the Defense Department's order limiting overtime in the aircraft industry. This order reduced total hours worked in the industry, and in the Los Angeles area alone it appears that the loss in overtime hours has resulted in a cut in weekly payrolls of about \$1,000,000 during May. San Diego and Seattle each lost about \$400,000 in weekly aircraft payrolls. Production stretch-outs and postponements of delivery dates for several types of military aircraft produced in District plants have also occurred.

Construction has been the weakest major industry in the District in terms of employment. Employment in the building trades, in contrast to the national experience, dropped sharply between April and May after seasonal adjustment. The May level was more than 5 percent below a year ago; and, except for Nevada, every state reported a decline from a year ago. The drop in construction jobs has been attributed by state employment agencies to the reduced level of home building.

Compared with a year ago all states except Oregon had higher nonagricultural employment in May. Oregon's decline from May 1956 stemmed entirely from a sharp reduction in manufacturing employment offset only in part by gains in other lines. Reduced employment in lumber and related lines has been the principal factor in the drop in jobs from a year ago.

Lumber and steel production rise from April to May

In general, production statistics for the Twelfth District show more firmness than do those for the nation as a whole. Steel production in the Western Region (including Colorado) in May achieved an operating rate of 99 percent of capacity compared with 96 in April. Preliminary figures for June suggest only a modest decline from May. By contrast, steel production for the nation as a whole dropped from 90 percent of capacity in April to 86 in May and June, reflecting the reduced demand for sheet steel, very little of which is produced in the West. A nation-wide reduction in operations is scheduled in July when mills perform essential maintenance tasks and employees take annual vacations.

Output of forest products demonstrated some seasonal recovery from April to May, though all except plywood remained below year-ago levels. Douglas fir, western pine, and redwood registered gains of 3, 6, and 6 percent, respectively. Plywood production rose 7 percent between the two months. Preliminary weekly data indicate that output of Douglas fir, western pine, and plywood increased somewhat further during the first three weeks in June despite the fact that price declines were reported for some grades of lumber and for fir plywood. Recent production gains in lumber have not added to inventories, for both shipments and orders have kept pace.

Manufacturing activity slackens in Pacific Coast states

Man-hours worked in Pacific Coast manufacturing industries fell 1 percent, after seasonal adjustment, from April to May. In spite of the drop in hours worked in aircraft and metals industries, most of the decline was centered in nondurables. Activity in food processing plants dropped 6 percent, reflecting a strike in sugar refining and a reduction in canning operations in California. Production of paper and paper products also fell because of the decrease in demand for paperboard and other products used in construction. While man-hour declines were reported in textiles and in printing and publish-

ing, activity expanded in firms producing rubber and petroleum products.

Activity in durable manufacturing industries receded slightly. Hours worked in firms producing lumber and lumber products rose 3 percent in line with the production gains noted above. Activity in metals, however, fell 3 percent as a reduction in metal fabricating in California offset gains in the production of primary metals. Operations in furniture and also in machinery expanded 1 percent. Reduced activity in the manufacturing of transportation products reflects a shortened work week in aircraft, offset in part by termination of a strike in automobile assembly. Hours worked in "other durables" industries fell about 2 percent as ordnance plants in California continued to curtail operations.

District construction still retarded by drop in residential activity

After a sharp jump from March to April, including a 4 percent rise in residential valuations, total building permits authorized in the Twelfth District leveled in May. Preliminary estimates indicate that residential valuations slipped back to the March level, although this was offset by a further expansion in the value of permits issued for nonresidential construction. The number of dwelling units covered by permits granted in May was 7 percent fewer than in April and down about 12 percent from May 1956. Total permits for the first five months of 1957 were nearly 5 percent smaller in value than during the comparable period a year ago, as an 11 percent decline in residential valuations was not completely offset by the rise in value of nonresidential authorizations.

Requests for VA and FHA appraisals at regional offices in May show declines of 79 and 35

percent respectively from those of a year ago. The drop-off in residential construction activity in the Twelfth District, as in the nation, is largely centered in government-insured, single-family dwellings.

Loans outstanding at District member banks resume rise

In the banking sector the most striking development in the second quarter involved the increase in loans outstanding at reporting member banks in the Twelfth District. Borrowings rose \$239 million, reversing the downward trend indicated by a \$191 million decline in the first three months of 1957. Commercial and industrial loans, which fell \$120 million the first quarter, are responsible for about 80 percent of the second quarter rise. Within this general group of loans about half of the increase occurred in the category of "unclassified" loans and cannot be identified by industry. Second quarter increases in loans outstanding measured \$72 million for public utilities and transportation firms, \$31 million for producers of metals and metal products, and \$26 million for sales finance companies. Except for metals companies, borrowings in the second quarter more than offset declines in the previous three-month period.

Real estate loans outstanding fell \$25 million in the three-month period ending in June, about a third as much as during the January-March period. This six-month slump marks the end of a sustained upward movement that had persisted almost without interruption during the postwar period. Agricultural loans increased by \$15 million and "other loans," the greatest part of which are "loans to individuals for personal expenditures," rose by \$69 million. These groups reversed first quarter declines.



Inventories . . . A Pause, No Recession

ATTENTION in recent months has been directed once again to an important source of instability in the economy—inventories. Renewed interest has been generated by the fact that there was a shift from inventory accumulation to liquidation between the fourth quarter of last year and the first quarter of 1957. Additions to inventories in the closing quarter of 1956 totaled \$5.1 billion at a seasonally adjusted annual rate, but in the first three months of this year there was a net disinvestment in inventories of \$0.8 billion. The net decline in such investment from the fourth quarter of 1956 to the first quarter of 1957 is thus currently estimated at \$5.9 billion.¹ This represents a pause in the build-up of stocks that continued for eight successive quarters—a build-up which appears to have re-

sumed in the second quarter, according to preliminary estimates.

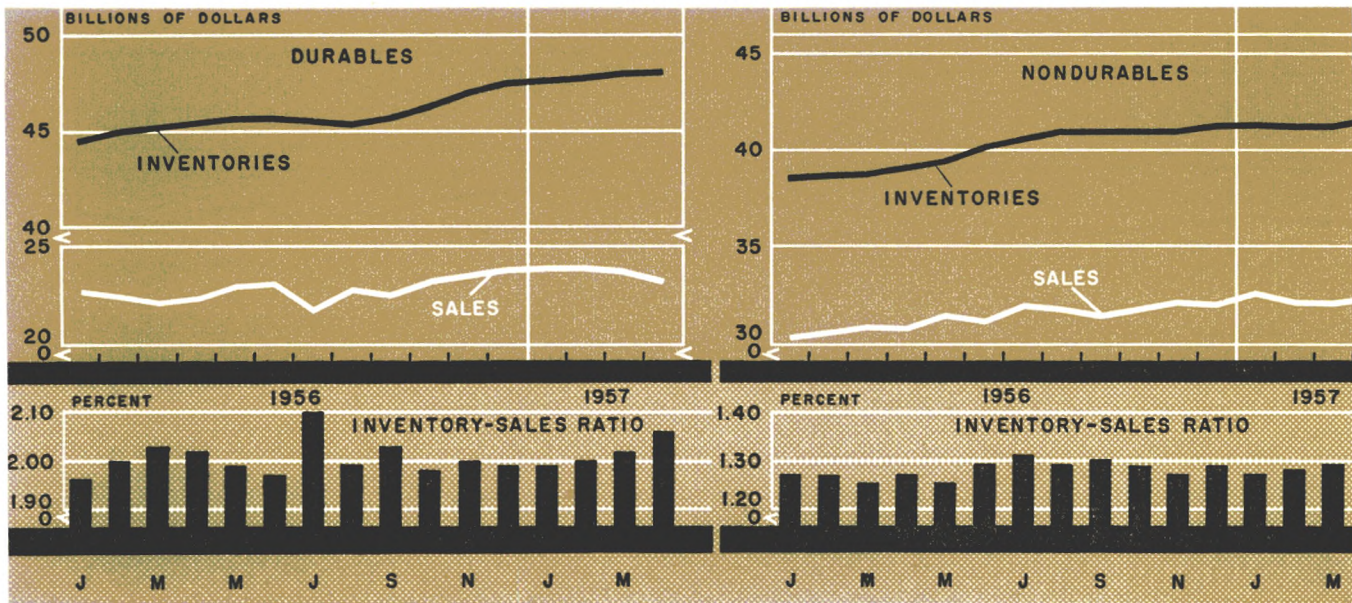
New investment in inventories provided considerable propelling force to the recent boom, accounting for 11 percent of the rise in Gross National Product from 1954 to 1956. Moreover, just as inventory accumulation has generally been an important factor during periods of rising business activity, similarly liquidation of stocks has nearly always contributed to recessions.¹ For example, new investment in inventories dropped \$8.2 billion from the final quarter of 1948 to the last three months of 1949, and the shift from the second quarter of 1953 to the third quarter of 1954 amounted to \$7.2 billion.

Inventory investment in the gross national product accounts includes changes in both farm and nonfarm inventories. Stocks of commodities held on farms by farmers fell in each quarter of

¹ These data have been revised back through 1954 and have been published in the July issue of the *Survey of Current Business* of the Department of Commerce, subsequent to the preparation of this article. In addition, other major benchmark revisions affecting the Department of Commerce Sales, Stocks, and Orders estimates will be revised in a later issue of the same publication.

¹ See "The Inventory Adjustment—Par for the Course?", *Monthly Review*, April 1954, pp. 67-70.

CHART 1
SALES, INVENTORIES, AND THE INVENTORY-SALES RATIO
JANUARY 1956 - APRIL 1957



Note: Inventory and sales figures are not adjusted for changes in prices.
Source: United States Department of Commerce.

1956, reflecting a strengthening of demand during the year. An additional decline in farm inventories occurred in the opening quarter of 1957. Nonfarm stocks, by contrast, rose \$5.0 billion in 1956 and then fell at an annual rate of \$0.3 billion in the first quarter of this year.¹

It should be noted that in the GNP accounts quarterly changes in inventories held by manufacturing and trade firms—but not those stored on farms—are adjusted for fluctuations in wholesale prices. These price corrections indicate that the physical quantity of nonfarm stocks declined at an annual rate of more than a quarter of a billion dollars in the first quarter of this year. This real decline in inventories occurred even though the book value of nonfarm inventories actually continued to rise (because of price increases), albeit at a sharply reduced rate compared with the previous quarter. Since the following discussion of inventories is based on book values not adjusted for price changes, it should be borne in mind that small increases in dollar value represent declines in physical terms.

Several questions arise concerning the inventory adjustments that took place early this year. In what sectors and in what industries were they most in evidence? Why did they occur? Are such adjustments likely to deepen and precipitate an over-all decline in business activity?

Durable goods build-up slackens

Chart 1 pictures the movement of inventories, sales, and the resulting inventory-sales ratios for all durables and nondurables over the 16-month period ending in April of this year.² It is apparent that the book value of durable goods inventories held by manufacturing and trade firms rose from January to May in 1956. Reductions of activity in the automobile industry, because of excessive automobile stocks at the retail level, and in steel, because of the strike, halted the rise during the summer months of last year. In the third quarter, increasing wholesale prices and the return of capacity operations in automobiles

and steel quickened the pace of the inventory build-up. The rise in the book value of durable goods stocks then slowed in the first four months of 1957.

Stocks of nondurables, by contrast, contributed only slightly to inventory accumulation after August, and although they have since reached a new higher plateau, they did not offset the reduced rate of rise in the book value of durable goods. It will be pointed out later that the slowdown in the rate of inventory accumulation between the fourth quarter of 1956 and the first quarter of 1957 was centered primarily in holdings of durables at the manufacturing level. Furthermore, it is also noteworthy that retail inventories of durables other than automobiles and of nondurables actually declined even in book value.

As shown in Chart 1, sales of both durable and nondurable commodities showed signs of leveling off in the first four months of 1957. Preliminary April and May figures indicate that sales of durable goods slipped below the average for the fourth quarter of 1956. Sales of nondurables were somewhat higher in April and May than in the initial quarter, and remained above the fourth quarter level. As a result of diverse changes occurring in inventories and sales, the over-all inventory-sales ratio for durables held by manufacturing and trade firms stood at 2.06 in April and May, a 16-month high if those months in which the steel strike occurred are excluded. The ratio for nondurables, however, was about the same as during the fourth quarter, down slightly from the July-October level.

Stocks of durable manufacturers rise at a slower rate

The first quarter drop in inventory investment, as mentioned above, was almost entirely the result of a slower rise in book value at the manufacturing level. Chart 2 shows that total inventories held by manufacturing firms in the fourth quarter of 1956 averaged about \$1.6 billion higher than in the previous quarter. The margin of gain between the final quarter of 1956 and the opening quarter of this year was about half as large—about \$700 million. Most of the change in pace occurred in durables, where accumulation

¹ Seasonally adjusted data are used throughout this article unless otherwise stated.

² In April of this year inventories of manufacturing and trade firms were distributed as follows: Durable goods manufacturers held 34 percent; retailers, 26 percent; nondurable goods manufacturers, 25 percent; and wholesalers, 14 percent.

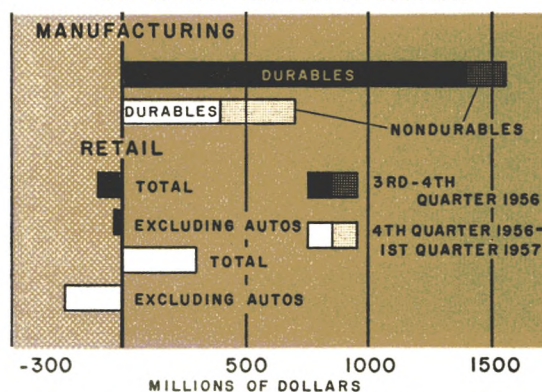
measured \$1.4 billion from the third to the fourth quarter of 1956 and then dropped to \$400 million. Nondurable stocks held by manufacturers rose \$160 million between the final two quarters of 1956. The build-up of nondurables continued at a more rapid rate as about a \$200 million increase occurred in the first quarter of this year.

Inventory adjustments reduce demand for primary metals

The slowdown in the rate of accumulation during the first three months of the year is evident in the three industries that account for the largest holdings of durable manufacturing inventories: primary metals, machinery, and transportation equipment. Firms producing primary metals added \$184 million to inventories from June to September and \$334 million from September to December. By March a further advance of \$182 million occurred, although a slight decline was reported in April. Holdings of stocks in primary metal industries at the end of April were, nevertheless, higher in relation to sales than in any month in 1956 excepting July and August when the steel strike occurred. Sales, in fact, have edged downward from the 1956 high reached in October. Moreover, new orders—a barometer of future sales—declined from November to April. As a result of these developments, output of primary metals fell from a high of 148 in September to 134 in May, according to the Federal Reserve Board's production index.

Production declines in primary metals, however, did not prevent a rise in the inventory-sales ratio from 1.60 in October to 1.84 in April. Over this period the demand for primary metals changed markedly. During the latter part of 1956 it was strong as metal fabricators stepped up purchases from primary producers to build stocks. In recent months, however, fabricators, particularly automobile and appliance makers, pared inventories of purchased materials, in line with a downward revision of sales expectations. Thus, although activity in metal fabricating was higher in the first quarter of 1957 than in the fourth quarter of 1956, sales of primary metals producers fell because of inventory disinvestment by fabricators.

CHART 2
CHANGES IN MANUFACTURING
AND RETAIL INVENTORIES
3 RD QUARTER 1956 - 1ST QUARTER 1957



Note: Dollar figures unadjusted for changes in prices.
Source: United States Department of Commerce.

Incentives for users of primary metals to work off holdings of purchased materials stemmed from a number of developments. As is widely known, consumer outlays for new automobiles, home appliances, and residential housing have been disappointing to the affected producers. Moreover, supplies of primary metals have increased substantially since the fall of 1956. This easing is particularly evident in nonferrous metals where price declines have occurred. In addition, work stoppages are unlikely in primary metals industries since no collective bargaining agreements expire in the immediate future.

In the machinery industry the slackening in the rate of inventory accumulation took the following course: From June to September in 1956 inventories rose \$351 million; from September to December, \$276 million; and from December to March, \$55 million. Little change occurred in April. Sales, however, trended upward until February but declined in March and April. As a result of these diverse movements the inventory-sales ratio dropped from October to January. It then rose and in April was about the same as in April of 1956. Output of machinery remained stable during the first quarter of 1957, slightly lower than in the final quarter of 1956. New orders for machinery, which move both more sharply and in advance of sales (see Chart 3), dropped in the closing months of 1956 and

again in March and April. At this time they were less than in April 1956, although still substantial.

Transportation equipment is the third major durable goods manufacturing industry in which the rate of rise in the book value of inventories slowed. The value of stocks held jumped sharply from the third to the fourth quarter of 1956, largely reflecting the build-up of work in process on new models in the automobile industry, though an expansion in aircraft production was a factor also. A much smaller rise occurred between the final quarter of last year and the first quarter of 1957. In April inventories remained at about the March level. This reduction in the rate of accumulation is centered largely in the automobile industry. Although above the year-ago level, output has been trending downward since January; but, more important, the industry has been working off holdings of purchased materials because of the increased uncertainty in production schedules.

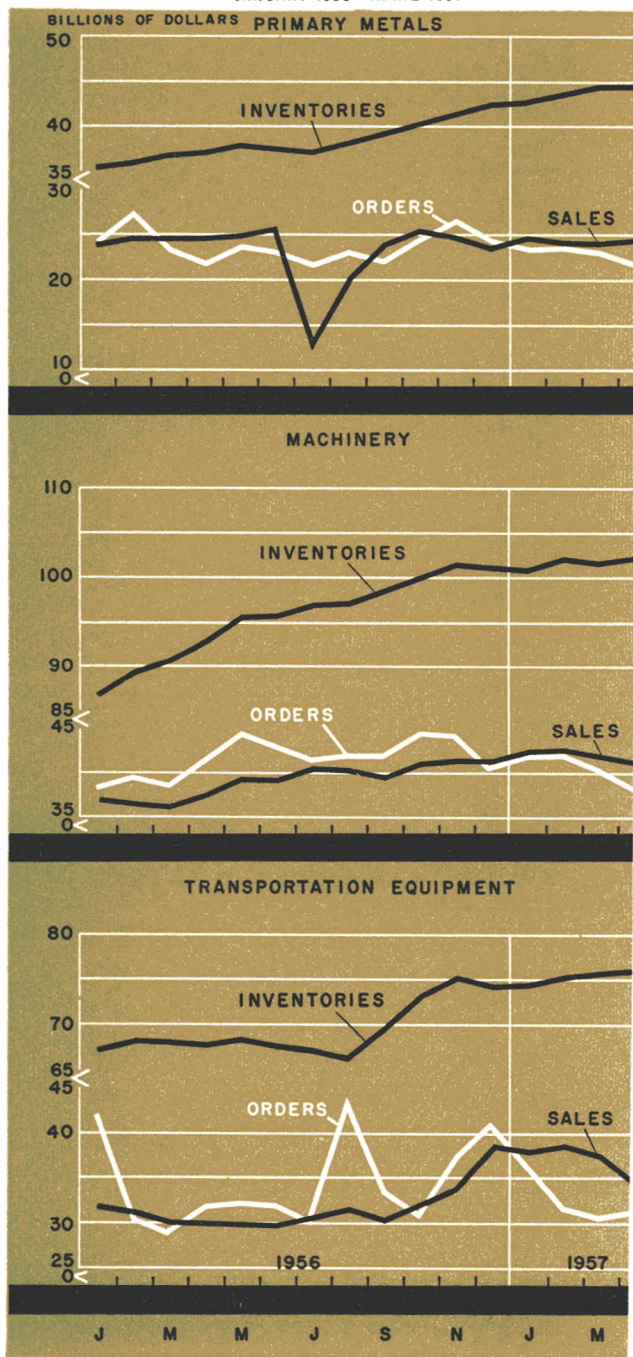
Manufacturers of nondurables speed up accumulation of stocks

As mentioned above, and in contrast to developments in the three major durable goods manufacturing industries just reviewed, manufacturers of nondurables stepped up inventory accumulation in the first quarter of 1957, compared to the two previous quarters (Chart 2). However, sales of nondurable manufactured products also averaged higher. Consequently, the inventory-sales ratio for nondurable manufacturers is down slightly from last year's high reached during the summer months, though in April and May it was above the year-ago level. In addition to a relatively more favorable sales record in the first 4 months of 1957, new orders in April reached a 16-month high and output has remained firm in the second quarter.

Retailers adopt more conservative inventory policies

It is apparent that inventory policies of most retailers became more cautious over the period from the third quarter of 1956 to the first quarter of 1957. This is particularly true if attention is centered on retailers other than those selling automotive parts and automobiles. Let us take

CHART 3
SALES, INVENTORIES, AND NEW ORDERS
FOR SELECTED MANUFACTURING INDUSTRIES
JANUARY 1956 - APRIL 1957



Note: Dollar figures unadjusted for changes in prices.
Source: United States Department of Commerce.

“other” retailers first. From the third to the fourth quarter of 1956 their inventories fell \$17 million, and from the fourth quarter of 1956 to the first of 1957, they dropped an additional \$226 million. Automotive parts and automobile dealers, on the other hand, while sharing in the general trend from the third to the fourth quarter of 1956 to the extent of a drop of \$86 million in inventories, had their inventories increased by \$543 million between the fourth quarter of 1956 and the first quarter of 1957. Adding the inventory changes of all retailers together, then, gives a decline of \$103 million from the third to the fourth quarter of 1956, and an increase of \$317 million from the final quarter of 1956 to the first quarter of this year, an increase which was entirely due to mounting stocks in the automotive sector. (See Chart 2.)

The book value of durable goods held by retailers in May was about 3 percent less than that of a year ago, in spite of a rise in automobile inventories. Holdings of building materials and hardware fell 9 percent, while firms selling home furnishings reduced their stocks 4 percent. Nondurable holdings in May, on the other hand, were up slightly from the May 1956 level. Among major groups of nondurables, apparel and general merchandise inventories have declined since April 1956 while the value of food stocks has risen.

Inventory-sales ratios of retailers decline

Retail sales have shown less fluctuation than retail inventories. The expansion in the fourth quarter (when automobile sales were rising) has been followed by little change from December to May. Preliminary figures for the second quarter show a gain in retail sales for both durable and nondurable goods from the 1956 level. However, since the advance in sales has not been matched by equivalent percentage gains in the value of inventories held, inventory-sales ratios in April and May were down from those of a year ago. But they have risen slightly since last fall. For durables the ratio declined from 2.13 in February 1956 to 1.82 in November, the latter figure being somewhat influenced by the automobile model changeover, and the ratio stood at 1.89 in April. The ratio for nondurables has shown less

movement as both components of the ratio—inventories and sales—have been more stable. This ratio reached a 1956 high of 1.27 in February 1956, declined to 1.22 in November, and in April rose slightly to 1.24, about the same as in April 1956.

Retailers, particularly sellers of durables other than automobiles, have increased the rate of turnover of stocks, that is, a larger dollar volume of sales is now achieved per dollar holding of inventories. Several factors are believed to have contributed to this development. Many retailers who finance inventories by making short-term borrowings from commercial banks may have voluntarily reduced stocks either to pay off old loans or to minimize the need for additional borrowings at higher interest costs. Also, the leveling evident in the wholesale price index of nonfarm commodities from mid-February to April weakened the incentive to hedge against rising prices. Lastly, the general tone of business sentiment, though somewhat improved since the early months of the year, and the leveling of retail sales added to increased caution in inventory policies.

Both inventories and sales of wholesalers have shown little change in the 16-month period since January 1956. The over-all wholesale inventory-sales ratio is approximately the same as in April 1956 since a rise in the wholesale ratio for durables has been offset by a decline in the ratio for nondurables.

Summary and conclusion

The decline in inventory investment between the fourth quarter of 1956 and the first quarter of this year, as reflected in the GNP accounts, stems from two sources. The major change is the much slower rise in the book value of inventories held by manufacturers of durables. In addition, some actual liquidation, even in book value terms, of retail inventories other than automobiles reinforced the decline in the rate of increase in book value of manufacturing inventories. Three industries—primary metals, machinery, and transportation equipment—account for a large proportion of the change in the rate of accumulation of stocks at the manufacturing level.

The length and strength of the inventory rise prior to the drop in the first quarter of 1957 might have been expected to produce an eventual readjustment. Specifically, various forces had an important influence on the inventory shake-down that occurred. Disappointing automobile and appliance sales reduced the demand for a broad range of metals. In response to the lower demand, firms in the metal industries cut back on inventory investment. At the same time auto producers and appliance manufacturers exerted efforts to limit their holdings of materials and related goods. In addition, the continuing credit squeeze induced many business firms to minimize the number of dollars "tied up" in inventories.

Improved supply conditions and more stable labor relations this year have also affected decisions on inventories. Some metals, particularly copper, lead, and zinc, have been available in greater volume than the market has been willing to accept so that substantial price cuts have appeared. Generally, wholesale prices have been more stable from mid-February through June than in earlier months.

Frequently an inventory adjustment can lead to a general downturn, although recessions of this type are usually mild and of short duration. The general downturn is induced as cuts in stocks lead to a reduction in orders and subsequently in production. Eventually, aggregate sales, output, and employment may fall, reducing incomes and perhaps causing further cuts in spending. So far this year, however, the final

demand for goods has remained high despite the weak spots noted. Government spending has continued to rise; consumers increased total outlays, even though they have disappointed some producers; business fixed investment is still rising; and foreign demand has been exceedingly strong especially in the first quarter. It appears likely that the inventory adjustment has already been moderated by these forces. Advance estimates for GNP in the second quarter indicate that the first quarter drop in inventory investment of \$0.8 billion gave way to accumulation of approximately \$1.5 billion in the second quarter, after allowing for higher prices.

It might be said that the cessation of inventory accumulation in the first quarter of the year should not be described as a "weakness," even though it did serve to reduce the gain in GNP between the final quarter of 1956 and the first quarter of 1957. The decline in inventory investment may mean that businessmen were adjusting their stocks to the more moderate business tempo in some lines. If business firms had continued to build inventories at the fourth quarter annual rate of \$5.1 billion, the possibility of recession in the latter part of this year would almost certainly have been heightened. Instead, the prevailing caution is a factor strengthening the outlook for the second half of 1957, since inventories are in a more balanced situation than would otherwise have been the case. The first quarter drop in inventory investment, by reducing the demand for goods, has also served to lessen inflationary pressures in the economy.



BUSINESS INDEXES — TWELFTH DISTRICT¹
(1947-49 average = 100)

Year and month	Industrial production (physical volume) ²							Total nonagricultural employment	Total mfg employment	Car-loadings (number) ²	Dep't store sales (value) ²	Retail food prices ^{3, 4}	Waterborne foreign trade ⁵	
	Lumber	Petroleum ¹		Cement	Lead ²	Copper ³	Electric power						Exports	Imports
		Crude	Refined											
1929	95	87	78	54	165	105	29	....	....	102	30	64	190	124
1933	40	52	50	27	72	17	26	....	....	52	18	42	110	72
1939	71	67	63	56	93	80	40	....	....	77	31	47	163	95
1948	104	101	100	104	105	101	101	102	102	100	104	103	86	98
1949	100	99	103	100	101	93	108	99	97	94	98	100	85	121
1950	113	98	103	112	109	113	119	103	105	97	105	100	91	137
1951	113	106	112	128	89	115	136	112	120	100	109	113	186	157
1952	116	107	116	124	87	112	144	118	130	101	114	115	171	200
1953	118	109	122	130	77	111	161	121	137	100	115	113	140	308
1954	111	106	119	133	71	101	172	120	134	96	114	113	131	260
1955	121	106	122	145	75	117	192	127	143	104	122	112	164	308
1956	116	105	129	156	77	118	210	134	152	104	129	114	195	443r
1956														
May	119	105	129	173	74	135	211	133	152	107	122	113	183	519
June	121	105	125	161	82	135	215	134	153	105	126	114	204	427
July	120	105	132	160	75	110	212	134	152	102	132	115	215	559
August	117	105	128	171	84	123	212	135	153	101	131	114	207	500
September	112	104	136	168	78	122	209	135	153	107	131	114	212	459
October	110	104	128	163	81	127	217	136	154	102	130	115	256	563
November	111	104	135	146	79	123	216	137	156	100	132	116	242	401
December	112	103	132	139	72	123	210	138	159	106	131	116	234	436
1957														
January	108	102	131	120	79	125	220	139	160	105	131	116	237	421
February	115	102	130	127	88	138	211	138	159	96	127	117	265	417
March	115	101	132	140	88	133	221	138	159	100	133	116	267	489
April	111r	101	132	154	78r	135r	228	138	159	103	127	117	....	....
May	111	101	138	....	80	126	....	138	159	99	126	117	....	....

BANKING AND CREDIT STATISTICS — TWELFTH DISTRICT
(amounts in millions of dollars)

Year and month	Condition items of all member banks ¹					Bank rates on short-term business loans ⁶	Member bank reserves and related items					Bank debits index (1947-49 = 100) ¹²
	Loans and discounts	U.S. Gov't securities	Demand deposits adjusted ⁷	Total time deposits	Reserve bank credit ⁸		Factors affecting reserves:				Reserves ¹¹	
							Commer- ¹⁰	Treas- ¹⁰	Money in circula- ⁹	Reserves ¹¹		
1929	2,239	495	1,234	1,790	....	- 34	0	+ 23	- 6	175	42
1933	1,486	720	951	1,609	....	- 2	- 110	+ 150	- 18	185	18
1939	1,967	1,450	1,983	2,267	....	+ 2	- 192	+ 245	+ 31	584	30
1949	5,925	7,016	8,536	6,255	3.20	+ 13	- 930	+ 378	- 65	1,924	102	
1950	7,093	6,415	9,254	6,802	3.35	+ 39	-1,141	+1,198	- 14	2,026	115	
1951	7,866	6,463	9,937	6,777	3.66	- 21	-1,582	+1,983	+ 189	2,269	132	
1952	8,839	6,619	10,520	7,502	3.95	+ 7	-1,912	+2,265	+ 132	2,514	140	
1953	9,220	6,639	10,515	7,997	4.14	- 14	-3,073	+3,158	+ 39	2,551	150	
1954	9,418	7,942	11,196	8,699	4.09	+ 2	-2,448	+2,328	- 30	2,505	154	
1955	11,124	7,259	11,864	9,120	4.10	+ 38	-2,685	+2,757	+ 100	2,530	172	
1956	12,613	6,452	12,169	9,424	4.50	- 52	-3,259	+3,274	- 96	2,654	189	
1956												
June	12,030	6,482	11,262	9,294	4.44	+ 5	- 405	+ 341	+ 32	2,404	185	
July	12,157	6,396	11,392	9,233	....	- 6	- 143	+ 240	- 8	2,519	195
August	12,173	6,439	11,356	9,286	....	+ 4	- 315	+ 247	- 103	2,565	198
September	12,423	6,491	11,581	9,305	4.57	+ 3	- 454	+ 466	- 59	2,640	182	
October	12,384	6,468	11,747	9,326	....	- 5	- 417	+ 312	- 2	2,542	195
November	12,504	6,431	11,867	9,235	....	0	- 143	+ 209	+ 38	2,579	195
December	12,804	6,383	12,078	9,356	4.65	- 17	- 303	+ 451	+ 38	2,654	200	
1957												
January	12,488	6,505	11,812	9,587	....	+ 33	- 558	+ 249	- 144	2,548	206
February	12,556	6,356	11,279	9,690	....	+ 41	- 816	+ 494	- 139	2,517	200
March	12,576	6,177	11,129	9,794	4.74	- 37	- 170	+ 170	- 9	2,495	199	
April	12,649	6,520	11,622	9,839	....	- 35	- 445	+ 430	- 31	2,560	202
May	12,694	6,315	11,210	9,995	....	+ 56	- 261	+ 209	+ 54	2,526	200
June	12,926	6,256	11,316	10,172	4.81	- 29	- 374	+ 402	+ 20	2,483	203	

¹ Adjusted for seasonal variation, except where indicated. Except for department store statistics, all indexes are based upon data from outside sources, as follows: lumber, California Redwood Association and U.S. Bureau of the Census; petroleum, cement, copper, and lead, U.S. Bureau of Mines; electric power, Federal Power Commission; nonagricultural and manufacturing employment, U.S. Bureau of Labor Statistics and cooperating state agencies; retail food prices, U.S. Bureau of Labor Statistics; carloadings, various railroads and railroad associations; and foreign trade, U.S. Bureau of the Census.
² Daily average. ³ Not adjusted for seasonal variation. ⁴ Los Angeles, San Francisco, and Seattle indexes combined. ⁵ Commercial cargo only, in physical volume, for Los Angeles, San Francisco, San Diego, Oregon, and Washington customs districts; starting with July 1950, "special category" exports are excluded because of security reasons. ⁶ Annual figures are as of end of year, monthly figures as of last Wednesday in month.
⁷ Demand deposits, excluding interbank and U.S. Gov't deposits, less cash items in process of collection. Monthly data partly estimated.
⁸ Average rates on loans made in five major cities. ⁹ Changes from end of previous month or year. ¹⁰ Minus sign indicates flow of funds out of the District in the case of commercial operations, and excess of receipts over disbursements in the case of Treasury operations.
¹¹ End of year and end of month figures. ¹² Debits to total deposits except interbank prior to 1942. Debits to demand deposits except U.S. Government and interbank deposits from 1942.
 p—Preliminary. r—Revised.

DEPARTMENT STORE SERIES

Uses and Limitations



Supplement to
MONTHLY REVIEW
JULY, 1957

F E D E R A L R E S E R V E B A N K O F S A N F R A N C I S C O

Department Store Series

Uses and Limitations

THE Federal Reserve System needs accurate, timely statistics on the United States economy in order to fulfill its function of helping to maintain stability through monetary policy. While the System can and does obtain valuable economic data from a variety of outside sources, including governmental and private research agencies, it also collects and processes data from original sources. Indeed, it is one of the most important sources of monetary statistics in the United States. In addition to the collection and publication of monetary statistics, the Board of Governors of the Federal Reserve System and the twelve Federal Reserve Banks collect, process, and publish figures on some segments of retail trade.

Although the Bureau of the Census of the United States Department of Commerce is the primary collector and publisher of retail trade data in the United States, the System maintains series on department store trade. In order to remove the possibility of duplication in reporting by stores included in both the System and the Bureau of the Census samples, a cooperative arrangement has been developed in which the Federal Reserve Banks pass on data for these stores to the Bureau of the Census as they are received. This arrangement has proven quite satisfactory because it gives the Federal Reserve Banks an opportunity to obtain information in addition to that required by the Bureau of the Census.

Various series available to stores and public

The System started collecting and publishing department store data in 1919. Department stores were selected as the group to be measured because their operations covered a wide range of merchandise. Furthermore, by collecting data from a relatively few units, it was felt that a good measure could be obtained for a fairly broad segment of retail trade.

Since its inception the department store series has expanded considerably both in the number of respondent stores and in the type of data published. Originally, only monthly percentage change data on total sales of reporting stores were published. At present, this Bank publishes

monthly and weekly percentage change figures on sales of reporting stores and a monthly index, which is expanded from the sample to cover sales by all department stores. In addition, there are series showing sales, by departments, of large independent stores located in metropolitan areas and series on stocks, orders outstanding, credit sales, and collections.

The department store trade data collected by the System, while primarily for internal use, are made available in published form for use by participating stores and the general public.¹ However, reporting is on a voluntary basis, and, as an inducement to stores to participate in the retail trade series, current reports are not ordinarily furnished to retail outlets which qualify as reporting stores unless they agree to supply data on a regular basis.

Limitations of series as retail trade indicators

Department store sales are considered by some users to be a valuable indicator of trends in retail trade. However, a number of warnings must be entered here. In the first place, it should be emphasized that the department store series cannot be substituted for data covering the entire retail trade sector. Since World War II, the retail sales volume of durable goods stores, such as automotive dealers and appliance and furniture stores, has grown faster than department store sales. For example, in 1939, department stores accounted for 9 percent of total retail sales, and automobile dealers accounted for 13 percent; in 1956, the share for department stores was 7 percent and for automobile dealers, 18 percent.² Durable goods stores other than department stores accounted for 34 percent of total retail sales in 1956, an increase of 7 percentage points since 1939. In the majority of cases department store sales move in the same direction as total retail sales. Their value as an indicator of change is limited, however, since, as is shown

¹ Readers interested in obtaining a list and description of the various statistical reports published by the Federal Reserve Bank of San Francisco may write to the Research Department, Federal Reserve Bank of San Francisco, San Francisco 20, California.

² A change in the definition of department stores adopted in 1948 has affected the comparisons to a minor extent.

The definition includes department stores and retail outlets of mail order companies. The definition of "department store" as shown in the standard industrial classification manual is as follows:

in the accompanying chart, in a number of cases department store sales changed either more or less than total retail sales in the year-ago month, and in a few cases they even moved in the opposite direction.

In the second place, the lead characteristics of this series, as is the case with almost every other single series, are neither accurate nor consistent as to timing. Furthermore, a study made within the System indicates that in forecasting turning points in retail sales, department store sales are valueless, as they tend to lag retail sales at the turning points.

Finally, there are extreme difficulties associated with using these series in small areas owing to the special circumstances of one or a few stores. If, for example, a new store A is opened in community X, department store sales may jump in the series for this area by 30 percent because stores B and C each lost 10 percent to it and appliance stores and discount houses, not in the sample, lost 20 percent, and communities Y and Z, both larger and close by, but not in the sample under consideration, lost 2 percent and 3 percent respectively. These series, it may be added, share with other indicators the difficulties of interpretation arising from the irregularities of the calendar.

These facts place restrictions on the use of department store statistics as an adequate measure of trends in any total estimation of retail trade. As a reasonably prompt indicator of an important segment of retail trade, covering a broad range of items, however, the series has value. Having thus commented on the limitations involved in using the series, let us now turn to a more detailed consideration of the series themselves.

TOTAL STORE SALES SERIES

Perhaps the greatest point of interest in department store statistics centers around total store sales. Because of the interest in total sales of department stores, each series on this subject should be understood in terms of its scope and

"Department stores are retail stores carrying a general line of apparel (such as suits, coats, dresses, and furnishings), home furnishings (such as furniture, floor coverings, curtains, draperies, linens), major household appliances, and housewares (such as table and kitchen appliances, dishes and utensils). These and other merchandise lines are normally arranged in separate sections or departments with the accounting on a departmentalized basis. The departments and functions are integrated under a single management. Establishments included in this classification must normally employ 25 or more persons."

limitations. The System publishes several series on total sales, not all of which, however, reflect the actual totals to the same degree. The *weekly percentage change* series, for example, covers a relatively limited number of stores and is designed as the earliest indicator of department store trade. The *monthly percentage change* series indicates the experience, with minor exceptions, of the entire sample available to the System. Total sales of all department stores are best reflected in the *monthly index* of department store sales, since this is constructed from the total sample available and adjusted for new and nonreporting stores as well as any differences in trading days between months being compared.

The System also publishes a series covering the percentage change in sales by individual departments. Some users, interested in sales by departments, attempt to reconcile the total store percentage change on the departmental report, which is based on a limited sample, with the monthly percentage change from the year-ago period referred to earlier. This is a misuse of the departmental series since it represents only the sales of those independent department stores reporting in the series on sales by departments.

Weekly department store sales data

The only weekly release on department store sales published by the Federal Reserve Bank of San Francisco is that dealing with percentage changes from the corresponding week of the previous year. This report, published on the Thursday following the close of the period covered, is the most current indicator for any segment of retail trade.

In response to the keen interest of participating stores and other users, as much local data as possible is shown on this report. At the present time this Bank shows percentage change figures for 13 metropolitan or sub-areas as well as for each of the Federal Reserve Districts and the nation as a whole. In addition to percentage changes for individual weeks, cumulative figures for the most recent four weeks and for calendar and fiscal years are also given.

Because of the time schedule for publishing this report, a number of stores, especially some chain stores with central accounting departments, cannot transmit sales figures to the Federal Reserve Banks in time to meet the deadline, with the result that the sample is smaller than

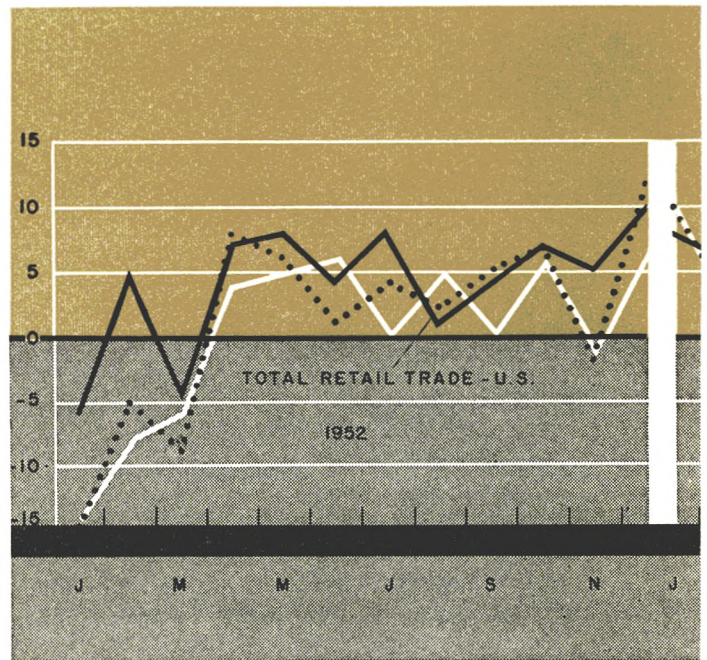
for the monthly series. Again, a number of stores can furnish only "flash" figures, that is, figures that have not been audited. Usually, this causes no discrepancy in the District figures and rarely affects the percentage change for any city by more than one percentage point. Since the comparison made in this report is with the same calendar week of the preceding year, percentage changes for specific weeks may be distorted because of special promotional or anniversary sales that occur in one week but not in the other, extraordinary weather conditions, or differences in the occurrences of holidays. The wide swings which may result from these factors are frequently temporary in nature, and weekly changes should be regarded with caution.

The primary purpose of the weekly series is to provide an early indication of changes in department store sales as a basis for judging the movement of department store sales monthly. When restricted to this goal, the weekly series is reasonably useful. Its value as a final measure of department store sales activity each week is, however, much more limited.

Monthly percentage change series

The monthly series of percentage changes in department store sales from the year-ago month overcomes many of the problems inherent in a weekly comparison. With the exception of Easter, holidays that affect department store sales occur in the same month each year so that any discrepancies from this source are greatly reduced, and the effects of weather conditions during one week may average out during the month. Also, because the department stores have more time for preparing their reports, the data have usually been audited before being submitted to this Bank and many of the stores which could not meet the weekly deadline are able to supply figures on a monthly basis. Therefore, the store sample is much larger, accounting for approximately 85 percent of all department store sales made in this District.

Because of the larger number of reporting stores, it is possible to publish figures for a greater number of sub-areas than on the weekly report. Currently this Bank releases percentage change figures for the entire Twelfth District and for 46 sub-areas including states, geographic divisions, metropolitan areas, and cities. With minor exceptions the published figures represent



*Board of Governors series. **Bureau of Census series. Sources: United States

changes in the dollar volume of department store sales only. When the series was begun in 1919, the definition of a department store was considerably different from that currently used, with the result that many general merchandise stores were included in the sample. In 1953 the Federal Reserve System decided to remove all "non-department" stores from the series. However, in order to avoid revealing the activities of individual reporting stores,³ it was necessary to include these "nondepartment" stores in certain areas.

Another shortcoming of the monthly percentage change series is the difference in the number of trading days which frequently occurs. Since calendar months are being compared in the

³ At the present time the Federal Reserve Banks and the Board of Governors of the Federal Reserve System have a system-wide agreement not to release dollar aggregates for any of the department store series. Nor are they permitted to release the names or number of department stores which participate in a given series except with the consent of all stores that report data for publication. These restrictions, which apply to disclosure to reporting stores as well as to the general public, were instituted in 1951 at the request of participating stores. The purpose, of course, is to help prevent the disclosure of the sales trend of any given store. For the same reason, figures for any city, metropolitan area, or geographic area are not published unless there are at least three reporting department stores under different ownership in the city or area. A further restriction is that no area data should be published without consent if one department store has an inordinately large share of total sales. While these restrictions have not permitted as much publication as some users would like, they have encouraged some stores which otherwise would not have done so to participate.

is an indicator based on a precise and consistent set of weights.

Two further refinements are applied to the department store sales indexes to make comparisons with other monthly periods more meaningful: the removal of trading-day effects and of seasonal influences. As explained above, removal of trading-day differences makes it possible to compare months of different duration. If the seasonal factors were accurately removed and no other influences were present, then the index would remain constant over time. Removal of the seasonal movements reveals the presence of such influences as the changing economic climate, fluctuations in income, population movements, price changes, and less important influences such as variations in the weather, labor strikes, and special promotional sales.¹

Departmental sales series

To meet the demand for current indicators of the trend of sales by product lines, the System began to release sales data for each of the departments of reporting stores in 1941. The Federal Reserve Bank of San Francisco, however, had been publishing this type of information since 1928. Since the initial release of these figures there has been a continuous growth in the number of departments and sub-departments for which figures are published so that currently over 100 individual breakdowns are shown.

This Bank has two general releases each month—a report showing percentage changes in sales and stocks from the year-ago month and one which gives a percentage distribution of total store sales among the individual departments. Although no cumulative data are published on a monthly basis, this Bank does prepare percentage change reports covering the periods of February through July and August through January. In addition, three annual reports covering calendar-year sales are prepared showing percentage changes from the preceding year, the percentage distribution of total yearly sales among the various departments, and a special report showing the percent of annual sales made during each month for the individual departments. The Board of Governors of the Federal Reserve System and some of the other Federal

¹ A detailed description of the preparation of department store sales indexes and derivation of seasonal adjustment factors can be found in the *Federal Reserve Bulletin* for December 1951.

Reserve Banks prepare indexes of sales by departments in addition to the percentage change reports.

Because of the detailed information that is requested, many stores cannot furnish the data. Therefore, the sample is primarily restricted to the larger independent department stores located in the major metropolitan areas. On the basis of this sample the Federal Reserve Bank of San Francisco publishes figures for ten areas and the District as a whole.

As mentioned earlier, the percentage change figures published for the store grand totals for each of the metropolitan and geographic areas on the departmental reports may differ from the percentage changes shown on the other sales reports because of the differences in the samples involved. However, it should be borne in mind that the departmental report is not intended as a measure of total sales. In the absence of readily available, current, comprehensive information on consumer spending by commodities, the departmental series represents an attempt to reflect changes in consumer preference in one trade area where it is possible to obtain data. The departmental series needs to be interpreted with full recognition that sales of large, national chain department stores, furniture stores, appliance stores, discount houses, apparel stores, and other competitive outlets are not reflected in the figures made available.

As an adjunct to the sales data given on the departmental reports this Bank also gives percentage changes in stocks on hand at the end of the month by departments. These figures, however, relate only to the District since some stores are able to give only combined stock figures for their various outlets, which precludes the possibility of arriving at representative stock figures for the metropolitan areas or sub-areas.

OTHER DEPARTMENT STORE TRADE SERIES

The above remarks have been confined almost exclusively to published data on department store sales. However, this Bank and the Federal Reserve System also publish data relating to department store inventories and credit extensions and collections. Much of the stocks and credit data published by the System is not available from other sources so that the System has found it useful to maintain its own series for its analysis

of consumer credit and evaluation of the general inventory situation. Other users also find these series quite valuable, especially the participating stores in evaluating and planning their inventory programs.

Inventory series

The System publishes three monthly inventory series—stocks on hand, stock-sales ratios, and orders outstanding. In each case the stocks are valued at their current retail prices. The stocks-on-hand series measures the percentage change in the end-of-the-month figure from the corresponding period in the previous year for selected metropolitan and geographic areas as well as for the entire District. Since the stocks figures reflect inventories in warehouses as well as on the shelves of the stores, reporting firms with a number of outlets often must report combined figures for all their outlets. As a result, it is not possible to obtain representative figures for many of the smaller sub-areas shown on the sales report and fewer sub-areas are shown on the stocks report. The smaller number of stores reporting inventory figures also restricts the publication of local data. In addition to the percentage change series, an index (both unadjusted and seasonally adjusted) is prepared for the total Twelfth District only. The orders-outstanding data are exclusively on a percentage change basis and reflect activity at a somewhat smaller group of reporting department stores than do the figures on inventories. The stock-sales ratio is the ratio of stocks on hand at the end of the month to total sales during the month. This series, which is for the total District, is also seasonally adjusted.

Department store credit and collections series

Credit sales are an important part of total sales by department stores and indeed are an important segment of total consumer credit. There are two major types of credit extended by department stores—regular charge, which is ordinarily payable in one instalment at the beginning of the month following the purchase, and instalment, which is paid in two or more regular payments. A number of independent department stores report a breakdown of their monthly sales by type of sales, that is, cash, regular charge, and instalment. On the basis of these data this Bank prepares a ratio of each type of sale to total sales for

as many areas as possible. The sample reporting these data is smaller than that reporting total sales figures and is representative only of the independent department stores. Therefore, these ratios should be used only as indicators and should not be applied to the total dollar volume of sales for any given area to arrive at total credit sales.

Many of the stores which report sales breakdowns also report credit outstanding and collections on their outstandings by type of credit. These data are used in preparing the ratio of collections to total outstandings at the end of the prior month.

Department store data checked with Census

After each census of retail trade, which is taken every six to ten years, the Bureau of the Census supplies the System with detailed department store data. On the basis of these data the System adjusts the sales indexes and reclassifies reporting stores. Because all stores are required to supply information for the Census, it is possible to obtain the total dollar volume of department store sales for the areas for which sales indexes are prepared and relate them to the preceding Census year when “universe” sales figures were also available. Using data for these two periods, it can be determined whether or not the indexes for any given area have moved to the same extent as total sales. If not, the indexes are revised to conform to the actual movement. At present the Federal Reserve System is in the process of adjusting its department store sales indexes to the 1954 Census data. This adjustment allows the Federal Reserve Banks to spread the effect of newly-opened stores over the 1949-54 period.

At the same time that these benchmark adjustments are being made, a general reclassification of stores to conform with the Bureau of Census findings is also being made. As a result, existing stores which now fulfill or no longer fulfill the definition of a department store are added or subtracted. While this Bank attempts to maintain a constant review of the status of stores within the Twelfth Federal Reserve District, it is not possible in every case to be aware of changes in the makeup of stores and thus to determine accurately whether or not they should be classified as department stores.

Summary

Although the Federal Reserve System can obtain a great deal of statistical data relating to department store sales and retail trade from other agencies, it still maintains for its own use, as it has for the past 38 years, a considerable investment in the collection and processing of these and supplementary data from original sources.

As an inducement to stores to report and as a public service the Board of Governors and each of the Reserve Banks publish the department store data they have available. The department store series which they publish reflect sales activity, credit extensions and outstandings, and inventory changes. The sales series are the most detailed and are based on the greatest number of reporting stores though there is some difference in sample composition and detail among the individual sales reports. The monthly sales index, which is the most comprehensive sales series, is designed to reflect all department store sales in the District and selected sub-areas. The monthly and weekly percentage change series, on the other hand, only reflect the sales activity of the reporting stores as does the percentage change

series on a departmental basis. Unlike the indexes, the percentage change series are not adjusted for trading-day differences or for seasonal influences.

As an adjunct to the monthly sales releases there is a series giving the percentage distribution of sales by type of purchase (cash, regular charge, and instalment). Other credit data are related to the collection experience of the reporting stores. The inventory series deal with stock-sales ratios, orders outstanding, and stocks on hand.

When the department store series was instituted in 1919 it was intended as a measure of retail trade and thus as an indicator of trends in consumer buying. Since that time, however, the changing structure of retail trade outlets and of consumer buying preferences have reduced the value of department stores as indicators of total retail trade. The opening, expansion, or closing of a store will affect the published figures even though they will have little or no effect on total retail trade. If the various limitations on these series are kept in mind, the data can be used in combination with other statistical series in arriving at indications of trends in retail trade.

**Prepared by Charles R. Petersen, Associate Economist,
under the direction and review of officers
of the Research Department.**