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CONTENTS

FINANCE • INDUSTRY • AGRICULTURE • TRADE

FOURTH FEDERAL RESERVE DISTRICT

Vol. 33—No. 2 Federal Reserve Bank of Cleveland Cleveland 1, Ohio

Steel Expansion

THIRTY-FOUR years ago the American steel industry's computed capacity to produce raw steel for ingots and castings reached the one-million-ton-a-week level. It was in May 1917 that for the first time as much as a million tons of steel were poured in a single week. More than three decades later, sometime during the latter part of 1950, theoretical steel capacity attained the two-million-ton-a-week goal with the present rated annual capacity of 104.2 million tons. It was not, however, until the week ended January 27, 1951 that steel mills actually produced two million tons of steel within a seven-day period.

The steel industry is currently embarked upon the most rapid tonnage expansion program in history. The lash driving the industry forward is insistent government demand for enlarged capacity and fear of government competition or ownership if private industry does not do the job. The carrot is the new vista of expanded rearmament demand for steel for an indefinite period plus rapid amortization for tax purposes of new facilities deemed essential to the defense program, and the discovery of rich new foreign ore deposits.

Projects to create new steel-making facilities or to enlarge and improve existing plants have been announced nearly every week since the start of the Korean war. At that time, steel ingot capacity in the United States totaled 100.5 million tons. By the end of November, steel companies had publicly announced plans that would lift capacity to about 110 million tons by January 1, 1953. Since then, a steady stream of new programs has been added. As of January 15, 1951, it appears that a capacity of at least 115 million tons will be attained in the next two years, or a net expansion of 15 percent in only thirty months.*

The gain in steel-making facilities, chiefly open hearth furnaces, will be supported by additions to the whole chain of the production process. New iron ore supplies will be made available from both domestic and foreign mines as well as enlarged plants to beneficiate lean ores. The fleets of lake carriers and ocean-going vessels will be augmented together with additional docks, storage space, and railroad cars. More blast furnaces for making pig iron are on the way, as well as new coke ovens and rolling mill equipment to process the increased flow of ingots. To date the bulk of the announced expansion will be financed by private capital and only a negligible proportion through government loans.

The Fourth Federal Reserve District, which has contained the heart of the nation's steel-making industry since the introduction of the Bessemer and open hearth processes, will still retain the same proportionate share of national capacity on January 1, 1953 as prevailed in 1948. Study of existing and planned construction programs indicates that fears of a decline in the area's importance as the steel capital of the United States are unfounded.

The adjacent chart shows Fourth District steel ingot capacity as a percentage of the United States total for selected years since 1936. From 1936 to 1948, the District's share dropped from 50 percent

* On January 24 industry sources stated that capacity will be 117.5 million tons by the end of 1952.

to 45 percent as the result of a more rapid rate of growth elsewhere in the country, chiefly the West Coast, South and Southwestern regions. Since 1948, the District has held its own with a little over 45 percent of total United States capacity. Plans announced thus far indicate no downward change in that ratio.

The growth record in both the United States and the District are detailed in a table and chart. It bespeaks confidence in future markets. In this District, it emphasizes the strategic importance of location in relation to supplies of raw materials — coal, iron ore, limestone, and scrap—and location in relation to the principal steel consuming markets and to labor supply. The misgivings which the industry may have had about the effects of the elimination of the basing point pricing system upon surplus steel producing centers such as Pittsburgh and Youngstown have been relegated to the background, at least temporarily.

STEEL INGOT CAPACITIES
As of January 1
(thousands of net tons)

Year	Fourth District	Total U. S.	District as % of Total
1936.....	39,455	78,165	50%
1945.....	46,350	95,505	49
1948.....	42,485	94,235	45
1951.....	47,050	104,230	45
1953*.....	52,015	115,000	45

NET INCREASES IN STEEL CAPACITY
(thousands of net tons)

During Year	Fourth District	Total U. S.	District as % of Total
1948.....	905	1,885	48%
1949.....	1,670	3,270	51
1950.....	1,995	4,835	41
1951-52.....	4,960	11,000	45
Total—5 years.....	9,530	20,995	45%

Figures are rounded to the nearest 5,000 tons and may not necessarily add to total.

Source: American Iron and Steel Institute and current trade papers and magazines.

* Estimated as of January 15, 1951.

When the expansion plans for 1951-52 are grouped together for the three major steel-producing areas of the District, distinctly different rates of growth appear for the areas as shown in the following table of estimates.

The largest producing area of Pittsburgh-Youngstown will expand by the greatest amount, nearly 2.8 million tons, but this will amount to only an 8 percent increase. The Steubenville-Wheeling-Ohio River

FOURTH DISTRICT STEEL EXPANSION BY PRODUCING AREA*
(thousands of net tons)

	Pittsburgh-Youngstown	Steubenville-Ohio River towns	Cleveland-Lorain	Total
Capacity—Jan. '51.....	33,865	8,405	4,780	47,050
Addition—'51-'52.....	2,780	965	1,215	4,960
Capacity—Jan. '53.....	36,645	9,375	5,995	52,015
Percentage growth.....	+8%	+12%	+25%	+11%

* As of January 15, 1951, to the nearest 5,000 net tons.

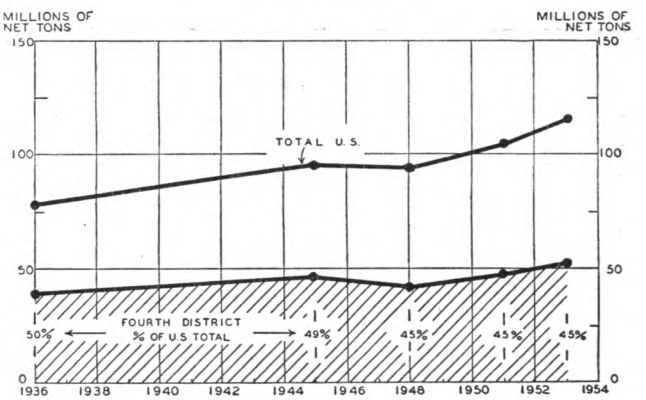
area, which stretches all the way to Cincinnati, will increase facilities by almost one million tons for a gain of some 12 percent. The smallest region, Cleveland and nearby Lorain, will add 1.2 million tons but this will be a gain of 25 percent in capacity.

The greatest volume, or about 85 percent, of District steel-making capacity in 1948 was in open hearth furnaces. In that year, however, some 54 percent, or about 490,000 tons, of the net increase was in the form of electric furnaces. In 1949, electric furnace additions amounted to 505,000 tons or 30 percent of the year's increase while Bessemer capacity rose by two-thirds of a million tons or 40 percent of the net growth.

In the past year, however, the bulk of the growth was in traditional open hearth furnaces and this likewise will be true in the next two years. By January 1, 1953, open hearths will still produce 80 percent of the District's steel. In all probability most of the capacity now "unclassified" will turn out to be of the open hearth variety. The category "unclassified" is

(CONTINUED ON PAGE 6)

STEEL INGOT CAPACITY
Plotted for Selected Years
As of January 1



. . . steel ingot capacity expansion in the Fourth District is keeping pace with the nation, at around 45% of the total.

Source: 1936-1948, American Iron and Steel Institute.
1952-1953, Estimated by Research Department, Federal Reserve Bank of Cleveland.

Instalment Credit Since World War II

At the end of last August, on the eve of reimposition of restraints, the volume of consumer instalment credit outstanding at 25 monthly reporting banks in this District reached $156,000,000. For five years, as indicated on the accompanying chart, this type of indebtedness had been increasing with but minor interruptions; but the sharpest rise of all, in absolute terms, occurred within the May-August interval.

Some further expansion took place during September and October, lifting the aggregate to $163,000,000, which represents the all-time high to date and an expansion of $140,000,000 since the end of 1945. The decline during November and December was of moderate proportions.

The growth of consumer instalment credit (or debt) extended by these specific banks is more or less typical of what transpired on a national scale with respect to all lenders and vendors combined.

The dollar increase in outstanding credit was successively larger in each year until the "readjustment" year of 1949. In that year, when disposable personal income declined slightly and personal consumption expenditures registered the smallest annual increase of the postwar period, outstanding instalment loans at Fourth District banks failed to advance as rapidly as in any of the three preceding years. The revival of economic activity towards the end of 1949, however, mitigated the effect of seasonal influences on instalment borrowing during the winter months, and in May of last year an unprecedented expansion became evident in the demand for consumer durables financed on the instalment plan. Reinforced by the twin fears of inflated prices and physical shortages as a result of the Korean conflict, the upsurge in instalment borrowing carried through the summer. In the five months May through September, outstanding credit increased more than in any complete post-war year. This was followed by a marked decline in the amount of new loans, beginning in September, which, together with the increasing volume of repayments, led initially to a slowing down in the rate of growth of instalment credit, and in the last two months of 1950 to a slight decline in outstanding credit at reporting banks in the District. For the country as a whole, a moderate decline in outstanding instalment credit was also reported in November.

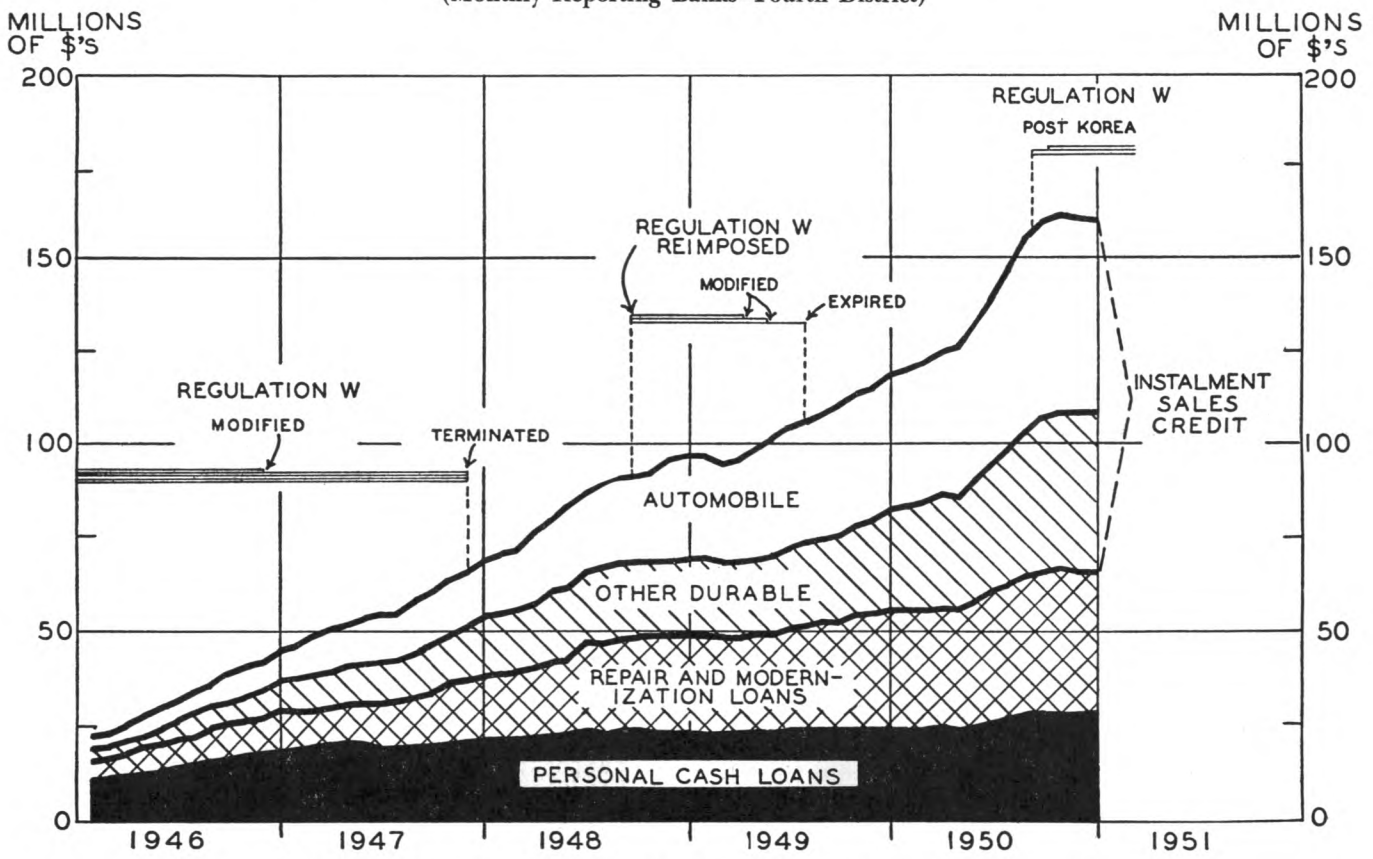
New Loans and Repayments Monthly data on the volume of new loans are perhaps more valuable than figures on outstanding credit from the standpoint of economic forecasting, subject to the qualification that the wide month-to-month fluctuations in new loans may at times obscure the trend in the absence of a precise seasonal pattern.

As in the case of outstandings, new loan volume rose in each successive year. A slowing down in the rate of increase of new borrowing first became apparent in 1948, despite peak economic activity and the absence of consumer credit regulation during most of that year. This contrasted with the wider margin of increase over the previous year registered by outstandings in 1948, and may reflect a lengthening of terms on new credit following the termination of Regulation W for the first time on November 1, 1947. The relatively small volume of new loans consummated in the early months of 1949 resulted in the monthly average of new loans for the year as a whole being only moderately higher than in the previous year in spite of a substantial revival of demand for credit after the first quarter. Last year, the unprecedented instalment borrowing in the spring and summer, facilitated by low down payments, easy terms and an amplitude of supplies reached a record monthly rate of $24 million in August at the 25 reporting banks, to be followed by a sharp decline to November and December levels lower than in the same months of 1949.

Throughout the postwar period, repayments have increased steadily, but with few exceptions have been consistently lower than new credits granted. As was to be expected under conditions of high employment and incomes, repayments have at no time indicated any marked tendency to default on the part of borrowers.

Automobile Credit Dollarwise, the most rapid expansion in instalment credit occurred in automobile credits. Since 1945, outstanding debt originated in automobile purchases jumped $48 million at reporting Fourth District banks, and $2,200 million at all commercial banks in the country as part of an aggregate increase in consumer instalment indebtedness on automobiles of $5,100 million. As a result, automobile credit at the end of 1950 represented 32 percent of the total at reporting banks in this District, 42 percent at all commercial banks, and 40 percent of the total instalment indebtedness, in contrast to proportions of 17 percent, 29 percent and 16 percent, respectively, at the end of 1945. Measured in dollars, automobile credit expanded at an accelerating rate in each successive year for the country as a whole. This reflected in large part the effect of rising prices and continually increasing production, but also sustained demand and increased use of credit. At reporting Fourth District banks, a temporary decline in the rate of expansion in 1949 resulted from a falling volume of net purchases of automobile paper from dealers. In the spring and summer of last year, a record volume of

CONSUMER INSTALMENT CREDIT OUTSTANDING, 1946-1950
(Monthly Reporting Banks—Fourth District)



. . . instalment credit expanded throughout the postwar period with only minor interruptions. An unprecedented increase occurred in the spring and summer of 1950, chiefly in credit on durable goods, and at the end of October outstanding debt stood at an all-time high of $163,000,000.

new credit was extended by these banks to finance the purchase of automobiles, which resulted in an increase in outstanding automobile credit in the second and third quarters of 1950 greater than in any other complete year since World War II. In September, a decline of more than seasonal proportions from the peak level of midsummer in new borrowing by car buyers first became evident. This was due in part to the advancing of buying plans following the outbreak of war in Korea which presumably diverted part of the demand which ordinarily would have been exerted in later months. Although lending on automobiles was still at a rate approximately the same as in November and December 1949, the increased volume of repayments led to a greater decline in outstanding automobile credit than that for all other types of credit combined.

Other Retail Instalment Credit Instalment purchases of durable goods such as appliances, radios, television sets, furniture, etc., were second in importance only to automobiles in causing the rapid postwar expansion of consumer instalment credit. In the five years 1946-1950, debt owed to all commercial banks in the country on these goods increased from $100 million to $1,300 million, and at reporting banks in this District from $3 million to $43 million. A substantial part of this expansion occurred in the years immediately following World War II, reflecting the rapid growth in production of household appliances after the end of hostilities. The rate of expansion slackened during 1948 and early 1949, but the recovery in demand for appliances towards the end of the latter year, the rapid extension of the market for television sets, and the high volume of residential completions contributed to a further upsurge in this category of borrowing which rose to new peaks in the spring and summer of 1950. During that year, the increase in outstanding instalment credit, most of which is dealer-originated, was almost double that of any of the previous four years. Despite a substantial drop in the volume of new credit extended in the late months

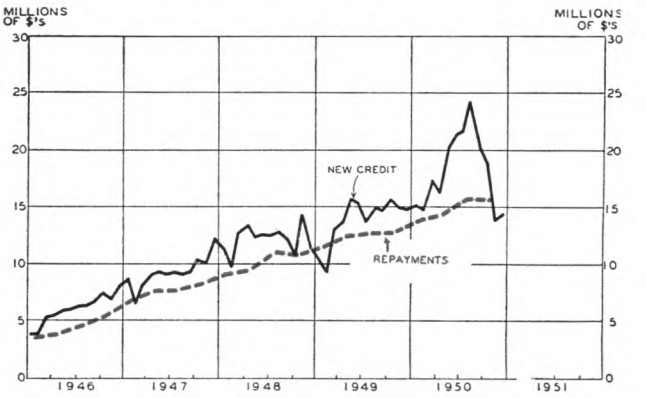
of the year, outstanding debt continued to expand, reaching an all-time high at the end of December.

Other Instalment Loans Repair and modernization loans expanded rapidly immediately following the war, but the rate of increase slowed down somewhat after 1948. In the summer of 1950, however, the volume of new borrowing for home improvement expanded sharply again from the seasonally low level of the early months of the year to reach a record figure in August. This expansion was followed by an equally sharp decline, and in December the volume of new loans extended was the smallest for that month since 1946. As a result, outstanding repair and modernization credit was reduced slightly. A further reduction in the early months of this year can be expected if the usual seasonal pattern is followed, and if F.H.A. insurance activity continues to decline.

The remaining category of consumer instalment credit, personal loans for educational, medical, debt consolidation and various other purposes, which bear little relation to durable goods production, registered the smallest expansion of any type of credit at reporting Fourth District banks since the war. In 1945, these loans aggregating $10 million had constituted the largest single classification of total instalment credit. At the end of 1950 they reached $29 million, and were the smallest individual component of the total. Almost half of the postwar expansion occurred in a single year, 1946, after which time the rate of increase became progressively slower until early 1950. A record volume of new loans during the summer lifted outstanding credit to a peak in September, and since that month, no net change has been apparent.

Effect of Regulation W The almost continuous growth of instalment credit since the end of World War II appears to indicate that Regulation W in its various forms had little effect on instalment borrowing. However, in the postwar period, the purpose of the control was essentially to prevent an over-extension of the credit position of lenders and borrowers alike, and to restrain rather than halt the expansion of instalment credit in order to reduce inflationary pressure. From this standpoint a measure of success is indicated by the slower rate of growth in periods of regulation than in unregulated periods. From the end of 1945 until November 1947, when the war-imposed Regulation W was first terminated, instalment credit at reporting Fourth District banks increased at an average monthly rate of nearly $2 million. From the end of September 1948 to the end of June 1949, during which time a modified form of the original regulation was in effect, the average monthly gain was nearly $1½ million. In contrast, the rate of expansion during the two periods of unregulated activity was around $3 million and $3½ million, respectively. A similar acceleration in the growth of instalment debt during the time when lenders were given a free reign was evident on a national scale.

NEW INSTALMENT CREDIT AND REPAYMENTS
1946-1950
(Monthly Reporting Banks—Fourth District)



. . . the volume of new credit granted was larger each successive year during 1946-50 and attained a record rate in August last year followed by an equally sharp decline in the late months of the year. The growth in repayments closely paralleled the trend of new credit.

NOTE: Data for new credit, monthly.
Data for repayments, monthly averages by quarters.

The disparity between the rates of growth in regulated and unregulated periods becomes less significant, however, when other factors are taken into consideration. In 1946, and to a lesser extent in 1947, physical shortages of consumer durables, together with the availability of substantial liquid assets were of major importance in limiting instalment purchases. The second postwar period of regulation coincided with the moderate decline in economic activity, particularly in the early months of 1949. The unregulated periods, on the other hand, coincided for the most part with high volume of physical production of durable goods and boom conditions of income and psychology, with the additional stimulus of fears of war shortages and higher prices in the third quarter of 1950. The decline in outstanding instalment debt since the latest imposition of Regulation W in September resulted from a sharp curtailment of new borrowing, which initially reflects the imposition of minimum down payment requirements and the restriction of the term of loans more forcibly than outstandings.

In view of the unprecedented concentration of purchases in the spring and summer months, it is conceivable that opposite movements in the prices of used cars as compared with the prices of furniture, rugs and major household appliances have both operated to restrain further increases in new borrowing. The sharp seasonal decline in prices of used cars

from the August peak has probably reduced the volume of credit extended to finance a given number of car purchases, while the continued rise in prices of other consumer durables may have exerted the traditional function of restricting the physical volume of purchases.

From the standpoint of banks, instalment lending to consumers has become an increasingly important part of operations since the end of World War II. At the end of 1945, instalment loans constituted less than 4 percent of the total loan portfolio of Fourth District member banks, and less than 3 percent of all commercial bank loans. By the end of 1950, the respective ratios were 12.5 percent and 11.0 percent. Both in this District and nationally, the proportion of instalment loans was substantially greater than in 1941 when instalment lending was at a prewar peak. The increase in the relative importance of consumer loans took place despite the rapid expansion of commercial and real estate lending during the postwar period, and it was not until the second half of last year, when commercial and real estate loans increased at an unprecedented rate, that the rise in the importance of instalment loans was overshadowed.

STEEL EXPANSION

(CONTINUED FROM PAGE 2)

the result of recent company public announcements of expansion plans without further identification of the type of production facility.

FOURTH DISTRICT STEEL INGOT CAPACITY BY TYPE OF FURNACE

(thousands of net tons)

	Open Hearth	Bessemer	Electric	Unclassified	Total
As of Jan. 1, '48..	35,900	3,040	3,550	—0—	42,485
Additions in '48.....	155	—0—	490	255	905
Additions in '49.....	380	665	505	120	1,670
Additions in '50.....	885	145	90	875	1,995
Additions in '51-'52.	4,350	300	16	300	4,960
Total, Jan. 1, '53....	41,665	4,150	4,650	1,550	52,015

Installation of new furnaces was responsible for about one-half of the new capacity in 1948 and for about 85 percent of the growth in 1949. In the planned 1951-52 program nearly one-half of the increase will come from new furnaces. Technological improvements (such as the use of oxygen and better charging techniques) and the rebuilding and enlargement of old furnaces account for the balance of the capacity increase.

The District steel mills have a distinct cost advantage in expanding present properties rather than building entirely new mills. It has recently been estimated that the cost of constructing a new integrated steel plant is $300 per ton of rated capacity whereas an existing plant can be expanded at only one-third of that cost, or roughly $100 per ton of rated capacity. When the competitive struggle for markets is again resumed on some distant day, this cost difference may assume real importance.

ANNOUNCEMENTS

This bank's *Annual Report for 1950,* a 44-page illustrated booklet of operations, was published late in January.

In addition to annual financial statements, the report contains a description of the nature of departmental operations within the bank, brief summaries of the bank's services and general functions, and an economic review of the past year.

Readers of the *Monthly Business Review* may obtain copies by addressing a letter of request to the Research Department of this bank.

* * *

The following appointments in the staff of the bank were announced on January 17:

MR. WILBUR T. BLAIR, formerly counsel and secretary, has been appointed vice president, counsel, and secretary.

MR. ELWOOD V. DENTON, formerly manager of the Personnel Department, has been appointed assistant cashier.

Inventories

DESPITE the rapid movement of goods into consumer hands during 1950, especially after the start of the Korean War, with the help of extremely high levels of production business establishments have added substantially to the dollar value of their inventories. This has been true not only with respect to manufacturing concerns, but in wholesale and retail trade as well. The general rise reflected increases in physical quantity as well as price changes.

By November the seasonally adjusted book value of business inventories had reached a record $60.0 billion, a gain of $5.9 billion, or 11 percent since the outbreak of hostilities last June. The previous peak in inventory accumulation had occurred in the closing months of 1948 when the initial postwar boom was slowing down. At that time stocks were valued at $56.8 billion and were generally viewed as somewhat excessive. In calendar 1949, business inventories receded $5.2 billion or about 9 percent.

From the point of view of physical volume of stocks on hand, there is probably not a great deal of difference between December 1948 and today's levels. The wholesale price index has risen 10 percent higher since the end of 1948, whereas the value of stocks last November was up 6 percent. Then, too, 1948 inventories were accumulated at very high prices that began to turn down in September, while 1950 inventory replenishment took place on a rising price level so that November stocks included a large proportion acquired at more moderate prices.

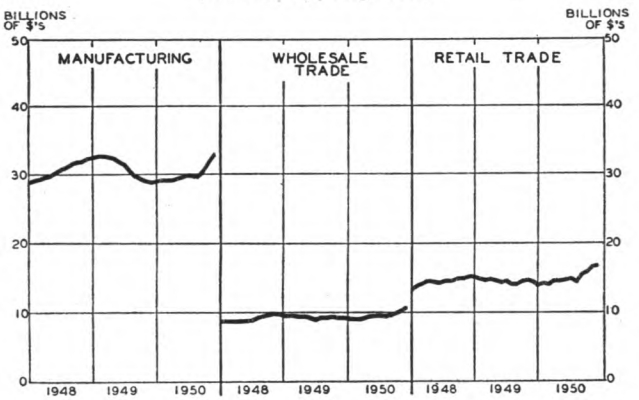
An accompanying chart depicts the trend of inventories in the hands of manufacturers, wholesalers, and retailers from early 1949 through November 1950 which is the most recent period available.

Inventories of manufacturers declined steadily through 1949 and then began to recover slowly through most of 1950. In November, they were up 10 percent from June and 13 percent from the beginning of the year. Nevertheless, stocks were only 1 percent above January 1949. As is evident in an accompanying table manufacturers hold slightly more than one-half of all business inventories.

Wholesalers' stocks, which amount to about two-tenths of the total, did not contract significantly during 1949 and at latest reporting date were 10 percent higher than in June and up 16 percent for the year. Moreover, holdings were 10 percent above the January 1949 level. It is estimated that wholesalers of durable goods boosted their inventories by about 16 percent or $500 million while wholesalers of nondurable goods increased stocks by nearly 17 percent or about $1 billion during 1950.

The nation's retailers have been the most aggressive in inventory accumulation. Retail stocks (which account for about three-tenths of total business stocks) last November were up 19 percent from January and were 14 percent higher than in June on a seasonally adjusted basis. Likewise they were nearly one-seventh larger than in January 1949, or at the end of a year of the largest retail selling volume in the nation's history.

TOTAL INVENTORIES
(Seasonally Adjusted)



. . . inventories at all levels have risen sharply since the start of the Korean War, despite heavy sales to consumers, and are now the highest on record.

Source: U. S. Department of Commerce.

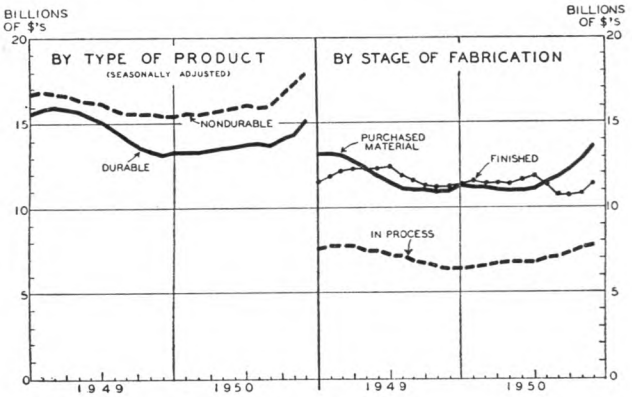
BUSINESS INVENTORIES
November 1950

	Billions of $'s	Percent of Total	—Percentage Change From— June '50	Jan. '50	Jan. '49
Manufacturing	$32.9	55%	+10%	+13%	+ 1%
Wholesale	10.4	17	+10	+16	+10
Retail	16.7	28	+14	+19	+14
TOTAL	$60.0	100%	+11%	+15%	+ 6%

The growth of inventories during 1950 would have been of much concern in more normal times, and would probably have been interpreted as a signal for an impending cutback in production and a period of price weakness. In fact some comment along these lines was made in the immediate "pre-Korean" period.

Now, however, the size of existing inventories does not cause apprehension—unless stocks are badly out of balance— and most busines establishments are trying to enlarge their holdings still further. The view is taken that merchandise on the shelves or in the warehouse is better than money in the bank since prices

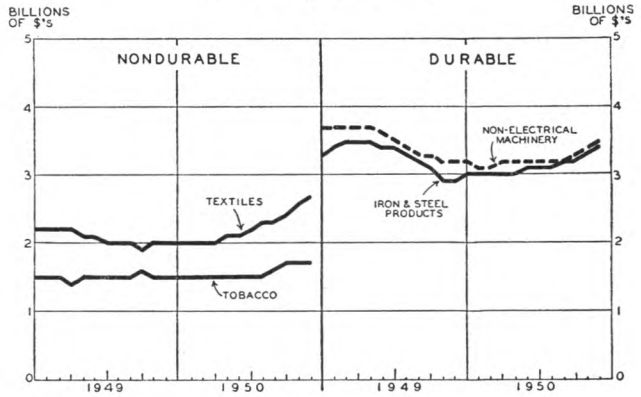
MANUFACTURING INVENTORIES*



. . . nondurable goods inventories have shown the largest gains and, unlike durable goods, are at record levels. Raw material stocks likewise are at record levels while finished stocks are relatively low.

*Inventories by stage of fabrication are not seasonally adjusted.
Source: U. S. Department of Commerce.

MANUFACTURING INVENTORIES
(Seasonally Adjusted)



. . . the rise in inventories has been far from uniform among various industries. For example, producers of iron and steel products added only 8 percent to inventories while textile inventories were enlarged by 22 percent.

Source: U. S. Department of Commerce.

are still rising, consumer demand is expected to remain high, and reduced production is certain for many lines of civilian goods. The continued rise in personal incomes and the promise of high-level defense spending seem to support this philosophy.

As a matter of fact the size of business stocks offers the public some degree of protection, or a cushion, against future reduction in rates of output of durable goods. The greatest protection against this contingency, however, is the vast inventory of durable goods in the hands of consuming public that has accumulated over the past four years in the form of automobiles, refrigerators, washing machines, radio, television sets and the like. At no time in the country's history has such a stock of nearly new merchandise been accumulated in such a short period of time.

Manufacturers' Inventories Although the book value of total manufacturing inventories in November was 13 percent higher than at the beginning of the year, there was a marked shift in their composition as shown in an accompanying chart.

Purchased materials were acquired aggressively during 1950 and the value of such stocks jumped $2.5 billion or some 22 percent. As a matter of fact, all of the increase in purchased goods inventories (these may be either raw materials or parts which will be incorporated in the final end product) took place since June. A good share of this rise in value, however, was probably due to the rise in raw material prices.

Likewise, there was a $1.1 billion or 17 percent gain in the value of goods in process as the tempo of production rose. The bulk of this rise also occurred after mid-year.

On the other hand, inventories of finished goods rose some $300 million in the first half of the year and then were pulled down sharply in the third quarter under the impact of the first wave of war-scare buying. Although finished goods inventories recovered somewhat in October and still further in November, they were still 1 percent under the January level. Higher prices in November probably caused this decline to be somewhat understated.

There was also considerable difference in the rate of change in inventories as between durable and nondurable goods as shown in the chart. In the liquidation period of 1949, stocks of durable goods dropped $2.5 billion, or 16 percent, while nondurable inventories declined a more moderate $1.2 billion, or 7 percent.

In 1950, durable goods manufacturers added steadily to stocks over the entire period for a net gain in book value of some 13 percent. About two-thirds of this gain took place after the start of the war. The high rate of consumer and industrial demand for metals in the face of limited supplies of raw materials since June kept finished stocks to minimum levels and well below January 1949 levels.

Nondurable manufacturers added 15 percent to inventories during the period with nearly four-fifths of the gain taking place since June. These recent gains carried stocks somewhat above the peak January 1949 period.

The difference in the ability to accumulate stocks —particularly in the months after the outbreak of war—is shown in the chart above. On the right half is plotted the trend of stocks of two typical hard goods industries, iron and steel products, and machinery manufacturers. The left side shows inventory trends

in two typical nondurable goods industries, tobacco manufacturers and textile mill products.

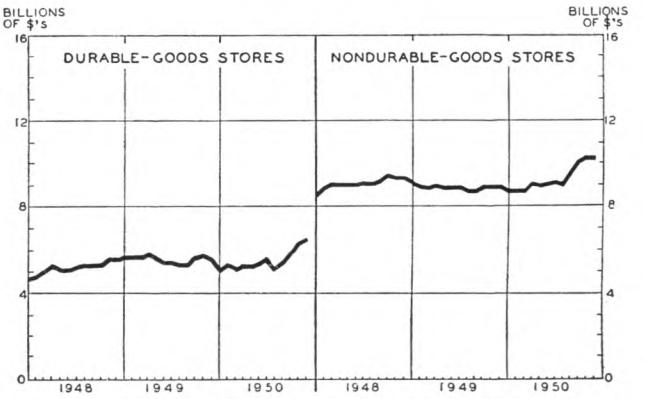
The drop in iron and steel product inventories was very sharp in the last half of 1949 and was accentuated by the prolonged labor dispute in the steel mills in the last quarter of the year. Raw material inventories in 1950 were probably inadequate for the volume of sales of finished goods. From June through November, manufacturers were able to increase their stocks by only 8 percent and these were still short of the level prevailing in the early part of 1949. Machinery builders added 9 percent to their inventories subsequent to June in the face of heavy increases in sales.

On the other hand tobacco processors raised their holdings 15 percent for the year, and textile mills jumped inventories by 22 percent. A good part of the latter increase was undoubtedly due to the rapid price increases of such raw materials as cotton and wool.

Retail Inventories The value of inventories of retail stores selling durable goods held virtually steady during the first six months of 1950 and then dropped a half-billion dollars or about 10 percent during July under the first wave of war-scare buying. Merchants were able to restock quickly, however, and by September, stocks were above the pre-Korean level. By November, stocks of durable goods had risen further to $6.5 billion, or 16 percent above June and were the highest on record.

War-scare buying of nondurable goods scarcely made a dent in retail stocks although July and August retail sales of soft goods were up about 7 percent from the June level. Manufacturers and wholesalers were able to step-up deliveries immediately and inventories by the end of November had gained 12 percent for the year.

RETAIL TRADE INVENTORIES
(Seasonally Adjusted)



. . . retail stocks remained comparatively stable until mid-1950. War-scare buying last summer by consumers scarcely made a dent in stocks, but since then retailers have built their inventories to the highest level on record.

Source: U. S. Department of Commerce.

The Fertility of Agricultural Research

by CLYDE WILLIAMS, *Director, Battelle Memorial Institute*

One hour of labor of a factory worker in this country will buy twice as much food as in England and seven times as much as in Russia. Back in 1920, the average American farm family produced enough food for itself and 12 other persons. Today that typical farm family feeds itself and 20 other persons. Six percent of this nation's population (only one-third of those who live on farms) is providing between 80 and 85 percent of the country's food crops. High efficiency is a major element in the picture.

This miracle of production rests on modern agricultural sciences. One branch of that science has given us farm mechanization that now replaces 12,000,000 horses which were major competitors of man in food consumption. One man with a good tractor and a three-bottom plow can turn as much land as six teams of horses, each with a plow and operator. One machine can pick as much cotton as 40 to 50 field hands.

Another branch of agricultural science has given us a host of new and powerful chemicals for crop and livestock protection. The new chemical, 2,4-D, usually applied by airplane, is being used to keep down the weeds on many millions of acres. Potent new insecticides and fungicides are revolutionizing the control of pests and diseases of crops and livestock. Other new chemicals are succeeding in disinfecting soil, regulating the growth of plants, and removing the leaves that interfere with mechanical harvesting.

In the same fashion the fertilizer industry, through such innovations as more concentrated fertilizers and newer forms of old materials, has made possible greatly increased farm production.

Lately agricultural research has proved that poor crop development is often caused by deficiencies of such "trace elements" as copper, boron, zinc, and magnesium. These are needed in very small amounts, only a few parts in a million of soil, but they are vital to the healthy growth of crops. Even in areas where no trace mineral shortages had been suspected, crop yields and values have been materially increased by use of these substances in fertilizers. This represents both an opportunity to increase crop production and a sizeable new market for the fertilizer industry and for producers of trace elements.

Still another branch of agricultural science has given us new varieties of crops and new breeds of livestock that are more efficient and productive than the older ones. Often the newer crops are resistant against diseases that formerly caused devastating crop losses.

An outlay of $200,000 a year in research has resulted in better wheat varieties that outyield old varieties by 10 to 30 percent, giving a continuing return of $50 million. The scientific studies that led to hybrid corn have increased American corn production by ¾ billion bushels per year. The introduction of soybeans to the United States, another research achievement, is adding a half-billion dollars to farm income with more millions coming from soybean processing.

The research that has made these advances possible is costing less than half of one percent of the gross value of farm products. Percentagewise this is small in comparison with the amounts invested in research by many other American industries. The U. S. agricultural research budget is about $150 million, of which two-thirds is expended in tax-supported state and federal experiment stations, and the remaining third in the laboratories and on the experimental farms of the industries that serve agriculture or at research institutes such as Battelle.

In spite of the contribution science and technology have made to the miracle of modern agricultural production, we still have far to go before we reach the limits of production. There are still many unanswered questions as to how to use our heritage of soil most efficiently and yet prudently, so that it will serve the generations to come. Investments in agriculture have promise of greater security than can be said for many other industries.

A prosperous and productive agriculture, of course, has more than local significance. Each day there are an added 6000 hungry souls in the United States, 50,000 more in the world each day, 20 million more each year. Social unrest and wars stem from hunger. Each forward step that science enables agriculture to make is a step toward national security and world tranquility.

Editors's Note:—While the views expressed on this page are not necessarily those of this bank, the *Monthly Business Review* is pleased to make this space available for the discussion of significant developments in industrial research.

FINANCIAL AND OTHER BUSINESS STATISTICS

Time Deposits at 56 Banks in 12 Fourth District Cities

(Compiled January 9, and released for publication January 10)

City and Number of Banks	Time Deposits Dec. 27, 1950	Average Weekly Change During: Dec. 1950	Nov. 1950	Dec. 1949
Cleveland (4)	$ 878,779,000	+$2,517,000	+$ 389,000	+$2,386,000
Pittsburgh (9)	481,565,000H	+ 282,000	+ 284,000	+ 138,000
Cincinnati (8)	175,232,000	+ 271,000	— 600,000	— 98,000
Akron (3)	100,239,000	+ 356,000	— 141,000	+ 146,000
Toledo (4)	104,923,000	+ 450,000	— 519,000	+ 375,000
Columbus (3)	85,740,000H	+ 198,000	+ 99,000	+ 173,000
Youngstown (3)	61,834,000	+ 49,000	— 11,000	— 27,000
Dayton (3)	44,816,000	— 42,000	— 21,000	+ 24,000
Canton (5)	41,369,000	+ 213,000	— 117,000	— 4,000
Erie (4)	39,980,000	+ 118,000	— 357,000	+ 66,000
Wheeling (5)	26,075,000	— 103,000	— 73,000	+ 57,000
Lexington (5)	9,981,000	— 4,000	— 46,000	+ 2,000
TOTAL—12 Cities	$2,050,533,000	+$4,305,000	—$1,114,000	+$3,238,000

H—Denotes new all-time high.

Time deposits at reporting banks in 12 Fourth District cities increased at an average weekly rate of $4,305,000 during December. This contrasted with the seasonal November decline and was in close accord with the usual expansion of time deposits in the last month of the year.

Most cities reported increases in time deposits greater than in the same month of 1949. At **Cincinnati, Youngstown** and **Canton** the December expansion was in contrast to net withdrawals from these accounts a year ago.

Akron registered the first increase in time deposits since April, while at **Dayton** the uninterrupted eight-month decline was continued.

Cleveland accounted for the greater part of the over-all gain with an average weekly rise of $2,517,000. The relatively more rapid rate of expansion at Cleveland banks than in the District as a whole is usual in December.

Although aggregate time deposits were at a record level for December at the end of 1950, most of the cities registered year-to-year declines in their outstanding time deposit liabilities. **Pittsburgh, Toledo, Columbus** and **Erie**, where the effect of the post-Korean buying wave on time deposits was less marked, were the only cities to report higher levels of time deposits at the end of 1950 than at the end of the previous year.

Adjusted Weekly Index of Department Store Sales*

Fourth District

(Weeks ending on dates shown, 1935-39 average = 100)

	1950r	1951		1950r	1951
Jan.	7....278	6....425	July	1....327	7....
	14....310	13....412		8....322	14....
	21....320	20....443		15....354	21....
	28....308	27....397		22....388	28....
				29....418	
Feb.	4....293	Feb. 3....	Aug.	5....374	4....
	11....308	10....		12....344	11....
	18....279	17....		19....330	18....
	25....255	24....		26....323	25....
Mar.	4....258	Mar. 3....	Sept.	2....295	Sept. 1....
	11....279	10....		9....324	8....
	18....264	17....		16....345	15....
	25....263	24....		23....318	22....
		31....		30....335	29....
Apr.	1....285				
	8....279	Apr. 7....	Oct.	7....297	Oct. 6....
	15....262	14....		14....307	13....
	22....283	21....		21....287	20....
	29....334	28....		28....298	27....
May	6....299	May 5....	Nov.	4....280	Nov. 3....
	13....296	12....		11....281	10....
	20....299	19....		18....288	17....
	27....295	26....		25....221	24....
June	3....295	June 2....	Dec.	2....195	Dec. 1....
	10....314	9....		9....328	8....
	17....309	16....		16....334	15....
	24....306	23....		23....314	22....
		30....		30....342	29....

* Adjusted for seasonal variation and number of trading days. Based on sample of weekly reporting stores which differs slightly from sample reporting monthly.

r—Revised

Bank Debits*—December 1950 in 31 Fourth District Cities

(In thousands of dollars)
(Compiled January 11, and released for publication January 12)

No. of Reporting Banks		Dec. 1950	% Change from Year Ago	3 Months Ended Dec. 1950	% Change from Year Ago
187	ALL 31 CENTERS—	$9,616,027H	+25.4%	$26,844,153H	+30.7%
	10 LARGEST CENTERS:				
5	Akron, Ohio	334,151H	+33.4%	935,847H	+29.5%
5	Canton, Ohio	139,806H	+30.2	397,713H	+31.8
15	Cincinnati, Ohio	1,130,800H	+19.3	3,324,527H	+25.6
10	Cleveland, Ohio	2,544,745H	+27.2	6,950,453H	+31.2
7	Columbus, Ohio	620,397	+ 4.9	1,746,644	+ 4.5
4	Dayton, Ohio	297,524H	+18.9	829,798H	+20.1
6	Toledo, Ohio	469,400H	+18.6	1,309,767H	+22.5
4	Youngstown, Ohio	204,939H	+27.4	573,908H	+33.4
6	Erie, Penna.	115,692H	+26.3	314,946H	+23.2
48	Pittsburgh, Penna.	2,862,364H	+31.9	8,086,413H	+45.2
109	TOTAL	$8,719,818H	+25.1%	$24,470,016H	+31.2%
	21 OTHER CENTERS:				
9	Covington-Newport, Ky.	$ 46,290	+ 8.6%	$ 134,295	+14.4%
6	Lexington, Ky.	149,297	+79.4	291,915	+50.0
3	Elyria, Ohio	28,635H	+30.0	78,357H	+36.2
3	Hamilton, Ohio	49,434H	+23.7	141,277H	+21.4
2	Lima, Ohio	58,081H	+36.0	163,474	+28.8
5	Lorain, Ohio	20,752	+14.7	62,722H	+22.9
4	Mansfield, Ohio	60,232H	+32.8	161,481H	+26.7
2	Middletown, Ohio	45,242H	+16.6	131,474H	+25.3
3	Portsmouth, Ohio	25,005	+15.7	71,176	+15.7
3	Springfield, Ohio	53,438H	+11.4	149,653H	+11.0
4	Steubenville, Ohio	27,645H	+14.0	76,618	+23.8
2	Warren, Ohio	49,848H	+25.4	142,583H	+32.0
3	Zanesville, Ohio	31,573H	+15.0	87,322	+12.1
3	Butler, Penna.	35,744	+21.2	103,992	+21.9
1	Franklin, Penna.	8,578	+21.1	23,647	+18.6
2	Greensburg, Penna.	27,192H	+29.1	76,231H	+33.1
4	Kittanning, Penna.	11,665	+ 8.9	32,541	+20.8
3	Meadville, Penna.	14,814	+25.6	42,530	+13.1
4	Oil City, Penna.	20,222	+ 5.5	57,794	+ 5.8
5	Sharon, Penna.	37,886H	+33.1	100,855H	+36.6
6	Wheeling, W. Va.	94,636H	+19.5	244,200H	+27.4
78	TOTAL	$ 896,209H	+27.9%	$ 2,374,137H	+25.8%

* Debits to all deposit accounts except interbank balances.
H—Denotes all-time high.

Debits to deposit accounts (except interbank) at banks in 31 Fourth District cities increased seasonally during December, aggregating $9,616,027,000, a new all-time record. This represented a gain of 25.4% over the comparable 1949 volume. Percentagewise, the year-to-year increment in December was smaller than the 30.7% gain for the fourth quarter as a whole, indicating a decline in the margin of increase of debit volume since October. The expansion in debits resulted in a record postwar rate of deposit turnover, despite a further rise in deposits to a new peak at the end of December.

TEN LARGEST CENTERS

Each of the ten largest centers except Columbus registered an all-time high in debit volume during December. **Akron** reported the largest year-to-year gain of 33.4%. **Pittsburgh** and **Canton**, where debits were relatively low in December 1949, also reported gains of more than 30%. **Columbus** and **Dayton** again registered year-to-year increments noticeably below the average, due in part to the relatively high debit volume in both these cities in the comparable periods of 1949 and to the stability of charges on public accounts at Columbus.

TWENTY-ONE SMALLER CENTERS

All of the smaller centers reported year-to-year increases in debits averaging 27.9% for the group as a whole. This was the first time since August that the margin of gain at the smaller centers exceeded that of the large cities.

The 79.4% increase in debit volume at **Lexington** reflects large transactions in the market for the 1950 tobacco crop. Transactions related to the 1949 crop were apparent chiefly in January 1950.

For the past three months combined, half of the smaller centers reported all-time high debit totals. **Sharon** and **Elyria** led the increases in these cities over the fourth quarter of 1949 with gains of 36.6% and 36.2%, respectively.

Indexes of Department Store Sales and Stocks

	Daily Average for 1935-1939=100 Adjusted for Seasonal Variation Dec. 1950	Nov. 1950	Dec. 1949	Without Seasonal Adjustment Dec. 1950	Nov. 1950	Dec. 1949
SALES:						
Akron (6)	369	286	299	598	352	485
Canton (5)	422	312	350	717	386	595
Cincinnati (8)	344	297	307	561	383	501
Cleveland (11)	328	248	263	528	305	424
Columbus (5)	372	303	345	606	384	562
Erie (4)	374	319	327	662	409	579
Pittsburgh (8)	267	219	268	422	278	423
Springfield (3)	323	249	294	559	302	508
Toledo (6)	316	289	277	540	367	474
Wheeling (6)	267	202	236	482	257	427
Youngstown (3)	410	297	321	672	371	527
District (98)	328	251	283	538	313	465
STOCKS:						
District	351	350	262	294	377	219

Back figures for year 1949 are shown in the February issue. For years 1946-48 see August 1949 issue, page 7.

SUMMARY OF NATIONAL BUSINESS CONDITIONS

By the Board of Governors of the Federal Reserve System

(Released for Publication January 30, 1951)

Industrial output was somewhat larger in December and January than during the autumn reflecting mainly further increases in output of producers equipment and military supplies. Consumer demand for most goods showed a sharp expansion and business demands continued strong. Retail prices of consumer goods and wholesale commodity prices showed more marked advances than in other recent months. The rate of expansion in bank loans to business slackened in January.

On January 26, a Federal order established maximum prices of most commodities at the highest levels existing between December 19, 1950 and January 25, 1951. Wage and salary rates were fixed at the rates prevailing January 25 pending the development of adjustment procedures.

Industrial production

The Board's production index in December was 216, and in January it is estimated that the index will be close to 220 per cent of the 1935-39 average. The current level is about one-tenth higher than in mid-1950 and one-fifth higher than a year ago.

Output of durable manufactured goods has expanded further following the temporary levelling off in November. Steel production, which had been reduced by severe weather conditions at the end of November, has increased to a rate somewhat above the earlier record reached in October. Output of producers equipment and munitions, mainly in the machinery and transportation equipment industries, has shown substantial further gains since last autumn. Passenger car assemblies are near the average rate prevailing in 1950 when output was 30 per cent greater than in any other year. Production of most other consumer durable goods and building materials has been maintained close to the record levels reached in the second half of 1950.

Production of nondurable goods in December and early January has continued at peak rates, reflecting mainly a sustained volume of output of textile, paper, petroleum, and chemical products 10 to 20 per cent above year-ago levels.

Minerals output declined slightly in December, as activity at iron ore mines was reduced from the exceptionally high autumn rate and as crude petroleum production was curtailed somewhat. Petroleum output increased again in mid-January to a new record rate.

Construction

Value of construction contract awards increased in December, reflecting a further contra-seasonal expansion in awards for public work and gains in private nonresidential awards. For the year, value of awards was two-fifths larger than in 1949, with substantial increases in almost all categories. The December rise in housing starts to 95,000 from 85,000 in November reflected a sharp increase in publicly financed units. Total starts of almost 1,400,000 in 1950 were more than one-third greater than the previous record in 1949.

Employment

Nonagricultural employment showed the usual large seasonal rise in December, reflecting mainly temporary increases in trade and post office employment. Average hours of factory workers rose to 41.6 per week, the highest in five years, and average hourly earnings continued upward, reflecting increases in wage rates and more overtime pay.

Distribution

Since the early part of December value of department store sales has been considerably above corresponding periods of other recent years. Increases in sales of household durable goods have been large, as during the upsurge in buying last summer and there have also been sharp increases in sales of apparel and various other goods. Despite record sales for this season, stocks have been maintained at high levels as a result of the very large volume of output. Purchases of new passenger automobiles have shown marked increases from the reduced level reached in November which was still about 10 per cent higher than in November of any other year.

Commodity prices

Wholesale prices generally continued to advance during the first three weeks of January. Increases for basic commodities approached the rapid rate of rise of the summer months. Marked advances also occurred in wholesale prices of numerous industrial products and foods prior to the announcement of general price controls on January 26.

The consumers price index rose 1.6 per cent from mid-November to mid-December, the largest monthly increase of the year, as retail food prices advanced 3 per cent. Since that time retail prices have generally continued to rise; foods have exceeded the July 1948 high.

Bank credit

Bank loans to business continued to expand rapidly in December but increases were less marked in the first three weeks of January. The expansion in real estate and consumer loans was smaller in the December-early January period than in previous months.

Average interest rates charged by commercial banks on short-term business loans rose from 2.6 per cent in the first half of September to 2.8 per cent in the first half of December. In early January, leading city banks announced further increases in rates to business borrowers.

Required reserves of member banks were raised by more than one billion dollars in mid-January as a result of the first step in the graduated increases in reserve requirement percentages announced in late December. Banks met this increase with funds obtained from a seasonal decline in currency in circulation and a reduction in Treasury deposits at Reserve Banks and by reducing excess reserves and selling Government securities.

Security markets

Yields on Government securities and high grade corporate bonds continued to show little change during the first three weeks of January. Prices of common stocks rose further and, effective January 17, the Federal Reserve raised margin requirements for purchasing or carrying securities from 50 per cent to 75 per cent.