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SURVEY OF

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THE BUSINESS SITUATION

By the Office of Business Economics

THE ACCELERATION of the Government's price decontrol program was among the chief economic developments during October. Price indexes moved higher, not only by reason of the rise in the decontrolled commodities but also of the rise in others where higher prices represented allowances for increased costs of materials in accordance with the pricing formulae.

A further expansion occurred in production, particularly in the reconversion area where improvement in the flow of parts and subassemblies aided in stepping up the rate of flow of finished commodities. Rising tendencies were less marked in the field of distribution. Though sales of durable goods moved upward with the increased flow of supplies to retailers, sales of nondurable goods have not been so strong. In September, the latter sales increased dollar-wise but by less than the seasonal amount.

More Selective Purchasing

The stepped-up flow of finished goods from the Nation's factories made only a small dent in the backlog of unfilled orders, but recent data on the flow of new orders give some evidence of more selectivity of purchasing. Merchants are purchasing less freely than a year ago and are giving more attention to the composition of both their inventories and commitments, partly because of the rising flow of merchandise of improved quality which may be expected to influence consumer buying of some alternative goods which have enjoyed a ready sale in the initial reconversion year.

Stock prices at the end of October were about the same as at the beginning of the month, but there were relatively wide fluctuations during the interim period. Thus the market average remained about 20 percent below the high reached last May. Whether the decline has had any direct influence upon the expansion plans of business is difficult to answer. Business spending for both plant and facilities and for inventory rebuilding continued to increase throughout the third quarter. However, fourth quarter plans for business expenditures for plant

The Month in Review

Price developments were again in the forefront during October, with prices moving upward over a broad front as a result of the accelerated decontrol program initiated in the middle of the month.

Production continued to expand. Retail sales continued high, but recent trends have not been uniform, with durable goods sales rising and nondurable goods sales lagging as consumers give evidence of more selectivity in purchasing. Inventory buying continues as a major source of business demand.

Business outlays for plant and equipment anticipated for the fourth quarter show a tendency to level off, but it is not possible to tell from the data whether this reflects other than Government restrictions and supply difficulties.

Income payments to individuals were lower in September than in July and August, reflecting the fluctuations in agricultural incomes. At an annual rate of 168 billion dollars for the third quarter, they were 7 billion dollars above the rate in the previous quarter and were also above the war peak.

* * * * *

Most of the statistical series used in this review of the business situation will be found in the statistical section at the back (pp. S-1 to S-40).

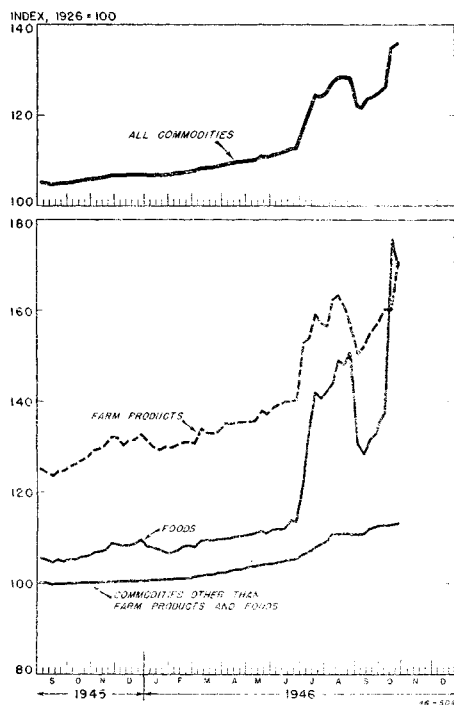
and equipment show a tendency for such outlays to level off, according to the quarterly survey of the Securities and Exchange Commission and the Department of Commerce. It is not possible to tell to what extent Government restrictions on commercial projects or anticipated difficulties in actual construction may have influenced the aggregate of these fourth quarter plans.

Advance in Wholesale Prices

The latest spurt in the wholesale price index—during the 4 weeks ending October 26 the index advanced 9 percent, bringing the total rise since the end of June to 21 percent—did not indicate an intensification of the pressure on prices; rather the rise was a response to the accelerated price decontrol program announced by the President on October 14. Immediate removal of ceilings on meats and livestock followed—which action led to the speedy resumption of meat production in heavy volume. Subsequently, controls were lifted on a whole series of other commodities. The magnitude of the price rise following decontrol was indicative of the degree of restraint previously exercised, although former ceilings were not always representative of actual prices paid by buyers.

Among the consumers' goods, price ceilings were removed during the latter half of October from practically all foods, tobacco products, alcoholic beverages, shoes, small home appliances, and many housewares. Price controls were still applicable to household rents, most clothing, many durable consumer goods, and a variety of miscellaneous items, but a further shrinkage in the area of controls was in prospect for the near future. In the aggregate, the shrinking controlled area of prices in early November accounted for about two-fifths of total consumer purchases, compared with four-fifths in early 1946.

The distinction between controlled and uncontrolled prices has never been a distinction between fixed and flexible prices, nor is it likely to be such in the period ahead. Thus, the prices of all commodities in the wholesale price index under price control both on June 29 and on October 26 rose 7 percent, or about one-third as much as the rise in the total index. On the other hand, the prices of commodities which were uncontrolled on August 13 and were still uncontrolled on October 26 were 33 percent higher on the latter date as compared with end-of-June quotations. In general, however, the prices in the uncontrolled group are

Chart 1.—Weekly Wholesale Prices

Source of data: U. S. Department of Labor.

of the type which fluctuate most widely—farm products, for example.

Comparison With 1920 Peak

As of the week ending October 26—which was 2 weeks after the decontrol program had been accelerated—the food component of the wholesale price index was substantially above the high established after World War I, and the farm products component was about as high as the 1920 peak.

The index of commodities other than farm products and foods, on the other hand, ended the month considerably below the 1920 peak. As shown in chart 1, the slow but steady uptrend in the latter group of prices—most of which are still under ceilings or have only recently been decontrolled—stands in sharp contrast both with respect to the level of, and movement of, prices of farm products and foods.

The breakdown given in table 1 shows that the 7-percent increase in the wholesale prices of commodities other than farm products and foods since the end of June compares with increases of 50 percent and 21 percent for foods and farm products, respectively. The non-farm, nonfood classes showing the largest gains for the 4-month period were textile products and hides and leather, but in some cases, notably building materials, large increases had occurred prior

to the end of June. Immediately after the lifting of price controls on hides and skins on the last day of October, the prices of these commodities rose very sharply.

Some Price Declines, Notably in Cotton

A few commodity prices have moved against the general trend. Prices of feed grains, particularly corn, moved lower, as the bumper harvest got under way. A few foods such as poultry and eggs, which had been in heavy demand because of the scarcity of meat a few weeks earlier, also were selling for substantially less at the end of the month.

By far the most spectacular price reversal during the month occurred in cotton prices. Cash cotton in New York rose to a high of almost 40 cents per pound on October 2, about 70 percent higher than the price a year ago. Later in the month the market broke sharply, dropping the permissible limit of 2 cents a pound on several successive days and forcing the Nation's cotton exchanges to close on 3 separate occasions. A low point slightly under 30 cents was reached on October 29, after which date the cotton market staged a mild recovery which extended into early November.

The downward adjustment in raw cotton prices had a stimulating effect on trading in textiles, since it stimulated

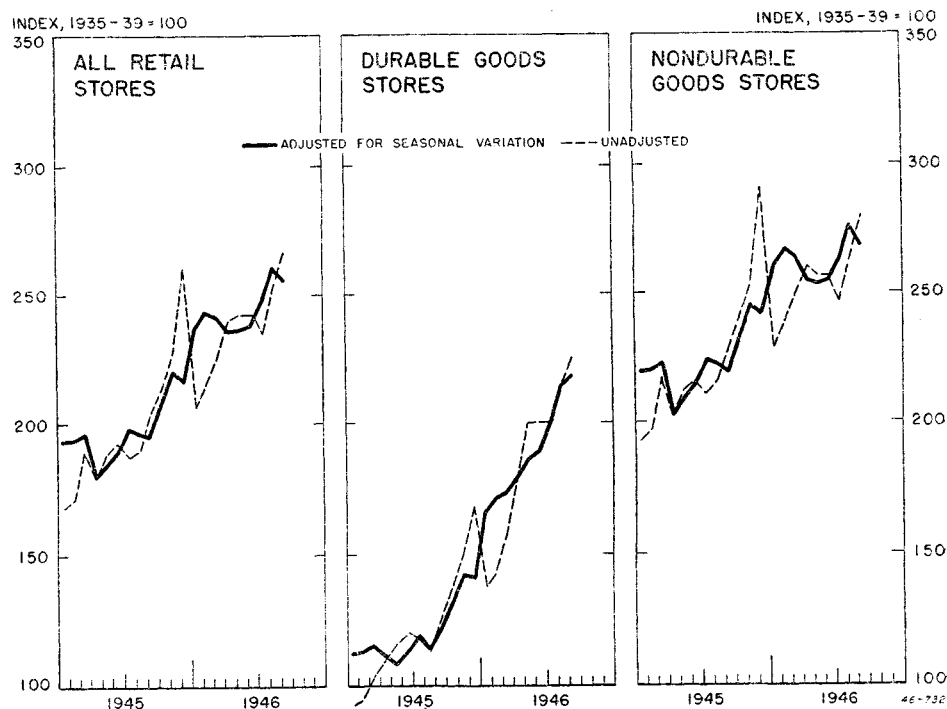
selling of goods which were being priced under the escalator clause of the Price Control Extension Act. With this incentive to delay shipments eliminated, selling became more active and contracts for future delivery, which are widely used in the industry, were being offered more generally, according to trade reports.

Retail Buying Undergoing Adjustment

Total retail sales have continued to increase in dollar volume. However, the increase from August to September was less than seasonal, notwithstanding some further increase in prices. Department-store sales reports point to a lagging tendency in October, but data are not yet available for other groups.

As shown in chart 2, whatever lag is implied in these sales results is wholly attributable to sales of nondurable goods. There has been no interruption of the rise at durable-goods stores where sales have been sharply upward in physical volume as well as in dollar totals. Shifts of this nature were suggested by the analysis of retail sales presented in the October issue.

Certain qualifications should be noted regarding the significance of these developments. In the first place, the September and October sales figures were held back by the poor showing in New

Chart 2.—Sales of Retail Stores¹

¹ Indexes are based upon daily average sales.

Source of data: U. S. Department of Commerce.

York City and Pittsburgh, where shopping was impeded by strikes.

Secondly, any hesitancy suggested by the trade figures is associated with less-than-seasonal gains rather than with actual declines, and is likely to be submergled in the holiday season ahead. In view of the current high income payments, there is no reason to revise the general expectation that pre-Christmas buying will be the heaviest on record.

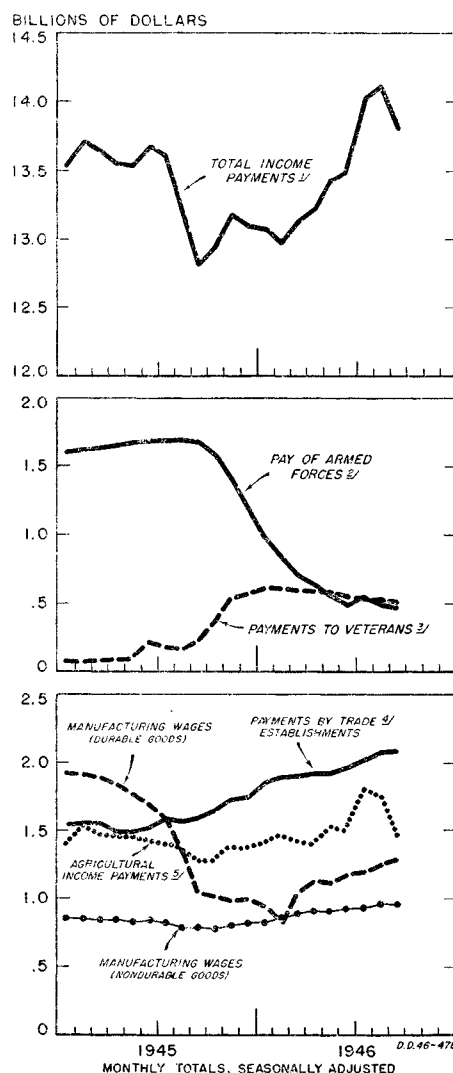
Nevertheless, the recent trends confirm last month's statement that some of the keen edge has been taken off the demand for goods at nondurable goods stores. Sales at the latter stores during the third quarter of the year exceeded the average for the first 6 months by only 4 percent, after allowance for seasonal factors, as compared with a considerably larger percentage increase in retail prices of nondurable goods.

Contrast With Sales Rise in Late 1945

Two distinct phases can now be distinguished in the flow of goods to consumers since the end of the war. In the first phase, which began almost immediately after VJ-day and extended into early 1946, consumer supplies increased, principally through the diversion to civilians of goods formerly purchased by the military, and the larger supplies generally were absorbed by heavier consumer purchasing. Some reduction actually occurred in the inventories held by retailers by the end of 1945.

In the second phase, increased supplies of consumers' goods resulted from rising production, but part of the increase went into business inventories. The increase in durable goods output was large both in absolute and in relative terms, but the increase in nondurables was large only in individual instances, and not in the aggregate. As previously indicated, sales at nondurable goods stores, after adjust-

Chart 3.—Income Payments to Individuals, by Selected Components



¹ Includes items not shown separately in chart.
² Includes Government's contribution to family allowances paid to dependents of enlisted personnel.
³ Represents mustering-out payments, redemption of adjusted service bonds (bonus to World War I veterans), and veterans' pensions, compensation, and readjustment allowances.
⁴ Data represent pay rolls and net income of proprietors.
⁵ Includes net income of farm operators (adjusted for change in inventories of crops and livestock), farm wages, net rents, and dividend and interest payments.

Source of data: U. S. Department of Commerce.

cumulation had been large and had recently accelerated.

September reports show that inventory buying in that month continued at approximately the same rate as in August. The reported increase in inventories was about 1 billion dollars for the month, with almost three-fifths of the rise going to wholesalers and retailers. The latest addition to business inventories brings the total accumulation for the third quarter of the year to 3½ billion dollars—from 28.8 billion dollars at the end of June to 32.3 billion at the close of September. Thus, inventory rebuilding continues as an important segment of current demand.

Income Payments Above Wartime Peak

Throughout the third quarter of 1946 total income payments to individuals were running at a rate in excess of the wartime peak, after allowance for seasonal factors. The annual rate of payments for the third quarter was approximately 168 billion dollars, as compared with 161 billion dollars in the second quarter of 1946 and 164 billion dollars in the first quarter of last year.

It is apparent from chart 3 that the recent movement of total income payments mirrors to a large extent the fluctuations in agricultural income. The unusual volatility of the latter component has been due chiefly to the varying policies with respect to livestock ceilings (see bottom panel of the chart). Livestock marketings were heavy during July and most of August, while ceilings were suspended, and exceedingly light during the succeeding month and a half when ceilings were reimposed.

There have been steady increases in other types of income payments which have had a bolstering influence on the total. Thus, agricultural income payments in September were back to the June figure, after seasonal adjustment, but total income payments remained substantially higher than in June, although down from July and August. As shown in the chart, wages in both durable and nondurable goods manufacturing have been moving upwards since February—under the stimulus of higher wage rates and larger employment totals—and payments by trade establishments have also risen substantially.

Among the components of income payments on the downtrend in the recent period have been pay of the armed forces and payments to veterans—see middle panel of the chart—but these declines have lately been of small magnitude. Unemployment compensation payments also were lower in September, as the result of fewer unemployed workers filing claims.

Table 1.—Wholesale Commodity Prices

[Indexes, 1926=100]

Commodity group	Week ended June 29	Week ended Oct. 26	Percent increase
Combined index (all commodities).....	112.7	135.9	20.6
Foods.....	113.4	169.9	49.8
Farm products.....	140.3	170.1	21.2
All commodities other than farm products and foods.....	105.4	113.1	7.3
Textile products.....	108.5	126.5	16.6
Hides and leather products.....	123.8	143.3	15.8
Miscellaneous products.....	92.9	103.7	11.6
Fuel and lighting products.....	87.5	95.0	8.6
Housefurnishing goods.....	110.7	115.9	4.7
Building materials.....	130.3	134.2	3.0
Chemicals and allied products.....	96.9	99.5	2.7
Metals and metal products.....	111.6	114.4	2.5

Source: U. S. Department of Labor.

ment for seasonal factors and for price changes, were somewhat lower in the third quarter than earlier in the year.

No Change in Rate of Inventory Buying

Last month's analysis of the inventory situation pointed out that inventories were not high in relation to sales, that they were unbalanced, and that further accumulation could be expected this year. Not only does the adequacy of stocks on hand vary widely among different lines, but price increases and upgrading have been important factors in raising the dollar value of inventories. It was likewise noted in the article that the rate of ac-

Planned Investment Outlays Level Off

The quarterly survey of planned expenditures on new plant and equipment conducted jointly by the Department of Commerce and the Securities and Exchange Commission indicates only a small increase in planned outlays between the third and fourth quarters of the year. The latest results, which are summarized in table 2, are quite different than the results in earlier surveys which showed large quarter-to-quarter increases. The fourth quarter total of 3.4 billion dollars compares with planned expenditures of 3.3 billion dollars in the third quarter and actual outlays of 2.2 billion and 2.8 billion in the first and second quarters, respectively.

The manufacturing and mining group, which accounts for more than half of all capital outlays of nonagricultural businesses, anticipated a small reduction in investment outlays in the final quarter of the year, but the drop is centered in the mining and smaller manufacturing companies. The very large manufacturing concerns, as well as railroads, utilities, and commercial and miscellaneous companies, all anticipated fur-

Table 2.—Expenditures On New Plant and Equipment ¹

[Millions of dollars]

Industry	1945	1946				
		Total	Actual		Anticipated	
			January-March	April-June	July-September	October-December
Manufacturing and mining	3,650	6,380	1,210	1,530	1,850	1,790
Railroads	550	620	100	130	180	210
Electric and gas utilities	630	1,000	180	230	280	310
Commercial and miscellaneous ²	1,820	3,720	720	920	990	1,090
Total	6,650	11,720	2,210	2,810	3,300	3,400

¹ All industries except agriculture. Figures for 1945 and the first three quarters of 1946 are revised data.

² Includes trade, service, finance, communication, and transportation other than railroad.

Source: U. S. Department of Commerce and Securities and Exchange Commission.

ther increases in investment expenditures. The increases, however, were the smallest recorded for any quarter of 1946.

Marked Contrast in Production Trends

The contrast between postwar trends in the production of finished durable and non-durable goods has, of course, been very marked. This is evident from a comparison of the production series

shown in charts 4 and 5, which in most cases cover the 12 months ending in September. With only few exceptions, the output of consumer durable goods has moved sharply upward since the end of the war when the large-scale shift from war to peacetime production was begun. Production of nondurable goods, on the other hand, has not conformed to any general pattern, although most series are about as high as a year ago or are moderately higher.

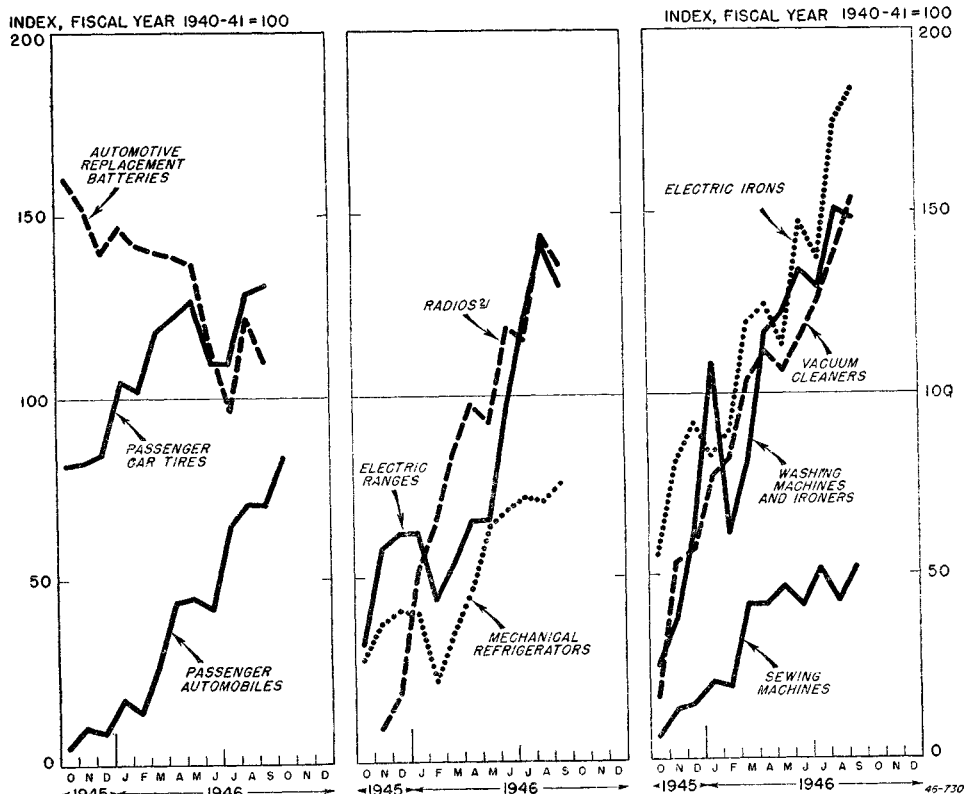
The current levels of durable goods and nondurable goods output also provide a sharp contrast, since the comparison with a prewar base period is much more favorable in the case of nondurable goods. The base period is the fiscal year 1940-41 for most of the durable consumer goods and the calendar year 1940 for the nondurables.

Many Durables Exceed Prewar Volume

Turning, first, to the durable consumer goods illustrated in chart 4, it is apparent that prewar production was exceeded earliest in the case of washing machines and ironers, where January 1946 output was already above the base period line shown in the chart. However, output fell off sharply in the succeeding month due to work stoppages in the industry. By March of this year—7 months after full-scale reconversion got under way—production of electric irons and vacuum cleaners also was higher than in the base period. Radios and electric ranges exceeded base period production a few months later. In view of this production performance and the expected high rate of output in the period ahead, the prices of radios and many home appliances were decontrolled by the OPA at the end of October.

Passenger automobiles, mechanical refrigerators, and sewing machines are the outstanding examples among the durables where output still is low by prewar

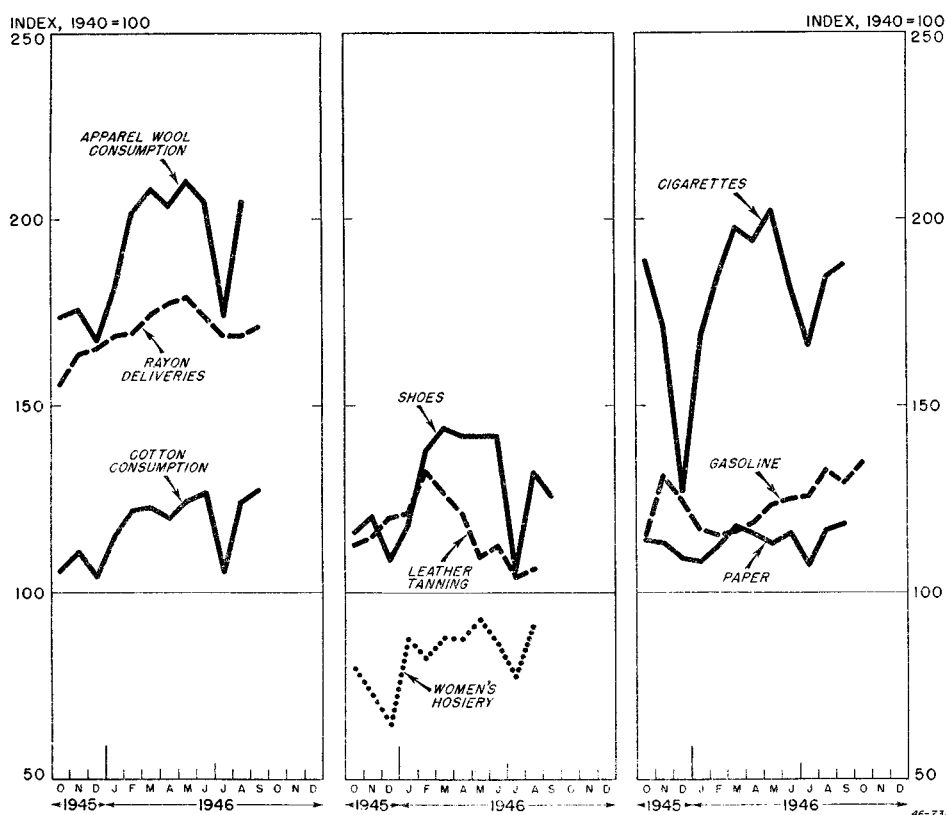
Chart 4.—Output of Consumers' Durable Goods ¹



¹ Data represent production for batteries, tires, and automobiles and shipments for all other products, except that base period data for automobiles represent factory sales. The base period data represent monthly averages for the fiscal year 1940-41, except for electric irons and sewing machines for which the base periods are the calendar years 1940 and 1941, respectively.

² Data for October 1945 are not available.

Sources: Basic data, U. S. Department of Commerce and Civilian Production Administration, except data for batteries and tires, which are from Association of American Battery Manufacturers, Inc., and Rubber Manufacturers Association, Inc., respectively. Indexes were computed by U. S. Department of Commerce.

Chart 5.—Output of Selected Nondurable Goods ¹

¹ Data for leather tanning, cigarettes, and paper are adjusted for seasonal variation; all series except women's hosiery are adjusted for the number of working days.

Sources: Industrial production indexes of Board of Governors of the Federal Reserve System, except basic data for cigarettes and women's hosiery, which are from U. S. Treasury Department and National Association of Hosiery Manufacturers, respectively. Data for cigarettes, which include tax-paid and tax-free withdrawals for consumption, were adjusted by U. S. Department of Commerce, using Federal Reserve seasonal factors. Indexes with 1940 as base computed by U. S. Department of Commerce.

standards. Despite periodic temporary shutdowns in some of the principal automobile manufacturing plants, daily average production of passenger cars has been rising steadily from 7,100 units in June to 12,400 units in October. Production of 285,000 cars in the latter month compares with an average monthly rate of about 340,000 during 1940-41.

By way of comparison, truck production (not shown in the chart) has made a much better showing since the end of the war. The prewar rate of production was exceeded as early as April 1946, while average monthly output since June has been more than one-fourth above the 1940-41 level. Assemblies of approximately 110,000 units in October represented a new all-time high.

Production of automotive replacement batteries and passenger car tires was already at a high rate when the war ended. Since then, tire production has risen substantially and, at 5.9 million in September, was probably at an all-time high. Automobile replacement batteries have shown an opposite trend, due to the tight lead supply situation, and no marked improvement is in prospect for the near future.

Decline in Shoe Production

Among the significant developments in the nondurable goods sector is the decline in shoe output to about 40 million pairs

in September as compared with a monthly average of 46 million pairs during the first half of the year. The decline is traceable to the difficulty in procuring leather. Price uncertainties and the low volume of cattle slaughter in June and again in September and the first half of October curtailed tanning operations.

The supply of women's hosiery has remained below prewar volume. Over 50 million pairs were manufactured during September, as compared with a monthly average of 57.5 million in 1940. Nylons accounted for almost three-fifths of the September total. So far this year, monthly production of nylons has averaged about 29 million pairs, as compared with a production objective for 1946 of 30 million pairs a month. A cut in deliveries of nylon yarn, effective in September, forecasts somewhat lower production of nylon hose during the remainder of the year.

With raw silk again becoming available, output of silk stockings rose to slightly more than 3 million pairs in September, or about 6 percent of total hosiery production for the month. An average of 43½ million pairs of silk hose a month was manufactured during 1940.

Building Materials Score Gains

In spite of continued increases in the production of major building materials throughout the summer months, the supply situation in the industry is still tight. August lumber production was almost 3.5 billion feet and was the fourth successive month in which production

Table 3.—New Security Issues

[Millions of dollars]

Year and month	Gross proceeds, all offerings	Corporate									Noncorporate, gross proceeds	
		Gross proceeds, total	Net proceeds by proposed uses									
			Total net proceeds	New money by use			Retirement of debt and stock			Other purposes		
				Total new money	Plant and equipment	Working capital	Funded debt	Other debt	Preferred stock			
1945:												
Total	54,712	6,011	5,902	1,080	638	442	4,117	134	438	133	48,701	47,353
Monthly average	4,559	501	492	90	53	37	343	11	36	11	4,058	3,946
1946:												
January	1,585	253	245	111	63	49	56	5	62	10	1,333	1,261
February	1,190	297	291	37	17	20	222	2	16	15	883	803
March	1,305	417	405	99	55	44	257	2	30	17	888	805
April	1,937	682	666	213	148	65	320	57	56	21	1,255	967
May	1,786	844	825	153	91	62	514	28	116	14	943	793
June	1,542	663	643	245	169	77	285	14	32	67	879	755
July	1,859	672	655	327	198	129	218	46	40	25	1,186	1,053
August	1,360	497	488	331	126	206	77	50	21	10	863	778
September	1,088	267	261	138	101	37	38	18	60	6	821	742
Total, 9 months	13,643	4,592	4,479	1,654	966	688	1,986	222	434	183	9,051	7,959
Monthly average	1,516	510	498	184	107	76	221	25	48	20	1,006	884

NOTE: More complete details for 1946 are given on p. S-18.

Source: Securities and Exchange Commission.

exceeded 3.0 billion feet. Thus, the production goal of 35 billion feet for 1946 seems more likely of attainment than it did earlier in the year.

All of the 16 materials included in the Department of Commerce index of production for selected construction mater-

ials registered gains in August compared with July. Only the cast iron radiation component was below its 1939 index in August and only four materials (cast iron radiation, lavatories, water closets and rigid steel conduit and fittings) were at a point below their 1941 index

levels. However, the rates of production of many important building products, including some not covered by this index, are still below those required to meet current demand and the situation is aggravated by the lack of inventories at all distributive levels.

New Capital Issues

Coincident with the declining trend of security prices, the market for new corporate issues has undergone considerable change. The rapid expansion in the first half of 1946 has been followed by a decline in offerings and some revisions of contemplated terms of sale.

All during the war the new corporate financing undertaken was mainly for refunding purposes, and the amount of new capital secured through public issues was small in relation to the volume of economic activity. During this period the Government financed most of the required expansion since it was primarily for either direct or indirect war purposes. Even refunding issues were very limited during the first two years of the war when the Federal Government requirements for war expenditures grew tremendously.

Enlarged Volume of Refunding

By 1944, it was possible for the corporations to enlarge refunding operations to take advantage of the declining trend of interest rates. In 1945, this situation still prevailed though, with VJ-day, more capital was needed for the enlargement of facilities and for carrying the higher inventories required to expand civilian production. The shifting of the financing of industrial and other facilities, and of working capital requirements, from public to private channels, resulted in a marked reactivation of the new issue market.

Peak Flotations in May

During the early months of this year, the capital market absorbed an increasing quantity of new corporate issues. The peak of this financing occurred in May when total issues, including new money and refunding issues, exceeded \$800 million. In that same month the stock market averages made their peak. Subsequently, the flotation of new issues declined as difficulty developed in marketing a variety of securities at the offering prices. In a number of cases, new issues went to a substantial price discount in the market, once support of

The increased volume of new corporate security issues floated during the first half of 1946 reflected the favorable financing terms then possible and, to a smaller extent, the need for new money to finance postwar expansion. The sharp decline in new corporate issues since the May peak does not indicate a lack of investment funds which are still large in the aggregate, nor any change in the upward trend of profits. Rather, it can be ascribed to a shift in buyers' expectations which, as in the stock market, has resulted in a reappraisal of offering prices.

the underwriters was withdrawn. Frequently underwriters were forced to carry large inventories of sticky offerings in the hope that they could be distributed later in a more favorable market.

That the causal factor in this was a dearth of investment capital is hardly a tenable assumption in view of the comparatively low volume of new capital secured through the issues that have been floated. Actually a high proportion of the flotations was for the refunding of outstanding bonds and preferred stock. Only about 5 percent of the gross proceeds of all issues was used for retiring debt other than funded obligations.

Table 3 shows the amount of corporate and noncorporate securities issued so far during 1946 and the amount floated in the full year 1945.

The noncorporate issues this year have comprised 90 percent Federal Government direct and guaranteed issues. Since the Federal Government has been retiring outstanding indebtedness, these issues have not meant an increase in funds utilized—rather the reverse. The bulk of the debt retired came out of the holdings of banks, and there has been

only a slight increase—about a half billion dollars—in the holdings of non-bank investors since the end of 1945. The remainder of the noncorporate issues so far this year were mostly State and municipal securities.

New Funds About a Third

Of the corporate total of \$4.6 billion raised during the first three quarters of 1946, only \$1.7 billion, or 36 percent, represented new money secured. This is the new money slated for this purpose and does not necessarily represent net new additions to aggregate corporate capital since there has been in 1946 a large volume of retirements not covered by the data in the accompanying table.

Of this new money raised, about two-fifths went into working capital and the remainder was for plant and equipment expenditures. That only a small part of the expansion of plant and equipment so far during the reconversion period has been financed by new issues is apparent from a comparison of the estimates of plant and equipment expenditures with the funds raised through public issues for this purpose.

While there obviously are lags in the application of funds, and the results of the comparison are not exact, the following table shows the small fraction of the expenditures that was met by new issues. The figures in the first column are from the quarterly survey conducted jointly by the Department of Commerce and the Securities and Exchange Commission, and those in the second are from the SEC.

[In millions of dollars]			
	Plant and equipment expenditures	New capital issues for plant and equipment expenditures	Ratio in percent
1946:			
First quarter.....	2,210	135	6
Second quarter.....	2,810	408	15
Third quarter.....	3,300	434	13

(Continued on p. 14)

Construction and Business Cycles

By Sidney Gertler

THE MARKET FORCES which most actively determine the volume of construction at the present time are primarily forces stemming from the war. They include the enormous volume of internal migration during the war; the substantial increase in incomes; the rise in the general price level and in construction costs; the extraordinary accumulation of savings; the development of large backlogs of demand for many types of goods; and, with particular effect upon housing, the great increase in marriages and the rise in the number of doubled-up families.

The war has disrupted the continuity between the prewar construction situation and that existing at the present time. Analysis of the present construction prospects by the usual technique of examining the current situation in comparison with substantially comparable immediately preceding periods and assessing the results of relatively small changes in demand and supply factors is therefore a method that seems at this particular juncture to offer little promise.

In view of the need for longer-range analysis, the purpose here is to undertake an examination of the recent history of construction and of the association between business and construction cycles. This entails an examination of the short cycle which followed the last war for the purpose of finding the contrasts and similarities between that and the current cycle.

Some of the major factors which have enjoyed historical or academic acceptance as explanations of observed trends and events can thus be weighed. An attempt will be made to evaluate a few of the more important explanations which have been offered for construction behavior, and to review some of the shortcomings of the data now available for construction analysis.

Cycles in Business and Construction

Fluctuations in construction activity affect general business activity because

Note: Mr. Gertler is a member of the Construction Division, Office of Domestic Commerce.

Summary

The recent war interrupted the rising phase of a major construction cycle which began in the mid-thirties. Deficiencies carried over from the prewar period are being reinforced by war-caused stimuli, so that construction activity will almost certainly carry forward at high levels in the immediate future, although such factors as high prevailing costs or the possibility of a short business recession cannot be disregarded.

The very strength of the underlying construction situation can be relied upon to bolster the economy in the period ahead even if weaknesses should appear in other business sectors.

construction is itself a major component of general business, and because the expansion and contraction of construction activity have repercussions upon the other components of general business. However, the fluctuations of general business activity by no means follow the same pattern as do those of construction activity.

Thus, general business activity has been found by one investigator to fluctuate in a major cycle of from 6 to 12 years, but generally within a range of from 7 to 10 years, and averaging somewhat over 8 years. Superimposed upon these major business cycles and distorting their course are minor business cycles of from 2 to 6 years, but generally within a range of from 3 to 4 years, and averaging about $3\frac{1}{2}$ years.¹

However, the course of general business activity is not merely cyclical, since it also exemplifies the effect of random factors which stimulate or depress business in various degrees. Wars are the most notable of such stimuli, and there

are some grounds for believing that a great war breaks at least partially the continuity between prewar and postwar business cycles, with the result that after each great war a new set of minor and even major business cycles is likely to be generated. Among the other random factors affecting business are the weather, discoveries of natural resources, the settlement of new regions, the rise of new industries, changes in tariffs, and other significant acts of government.

Length of Construction Cycles

The most pronounced cycles of construction activity have had a length of from 16 to 19 years and have averaged between 17 and 18 years.² In addition to these cycles, construction is also subject to less pronounced cyclical fluctuations resulting from the successive stimulation and depression of construction during the swings of the major and minor business cycles. Such movements, reflecting general business conditions, affect the course of construction activity and to some extent determine the precise timing of its peaks and troughs, but the major swings of the construction cycle appear to be largely unaffected.

The amount of decline of business activity in its cycle from peak to trough has in recent business cycles ranged from 25 to 35 percent below its peaks. On the other hand, the decline of construction activity in its cycle has fallen 50 to 70 percent below the peak level attained,

² Much of the discussion on cycles is based on the findings of earlier investigators and depends heavily on the published results of their researches. The principal sources for the materials used are the following: Alvin H. Hansen, *Fiscal Policy and Business Cycles*, (1941); George F. Warren and Frank A. Pearson, *World Prices and the Building Industry* (1937); Clarence D. Long, *Building Cycles and the Theory of Investment* (1940); William H. Newman, *The Building Industry and Business Cycles*, Studies in Business Administration, Volume V, No. 4, University of Chicago Journal of Business, Volume VIII, No. 3, July 1935; John R. Riggleman, "Building Cycles in the United States, 1875-1932", *Journal of the American Statistical Association*, June 1933, Vol. 28; and Wesley C. Mitchell and Arthur F. Burns, *Statistical Indicators of Cyclical Revivals*, National Bureau of Economic Research, Bulletin 69 (1933).

¹ Cp. Alvin H. Hansen, *Fiscal Policy and Business Cycles* (1941), pp. 18-19.

so that construction activity at its peak is two or three times that at the trough. Because of the greater variation of construction and because of its importance as the largest single industry except agriculture, it is a particularly significant component of general business.

Construction and Business Interaction

Since the construction cycle with its average length of some 17 or 18 years encompasses four or five minor business cycles, there is a tendency for about half of the business booms to be somewhat accentuated by construction booms, as appears to have been the case in the 1920's, while the other half of the business booms attains relatively low peaks due to the insufficient responsiveness of a depressed construction industry and of others contributing heavily to capital formation, as during the business recovery of 1933-1937. Similarly, about half of the business depressions are mitigated by the buoyancy of construction as an important factor in capital formation, as in the business declines commencing in 1847, 1864, 1883, 1900 and 1920, while the other half of the business depressions tend to be more severe and prolonged because they are coincident with a low phase of the construction cycle—as in the depressions commencing in 1837, 1857, 1873, 1893, and 1929.

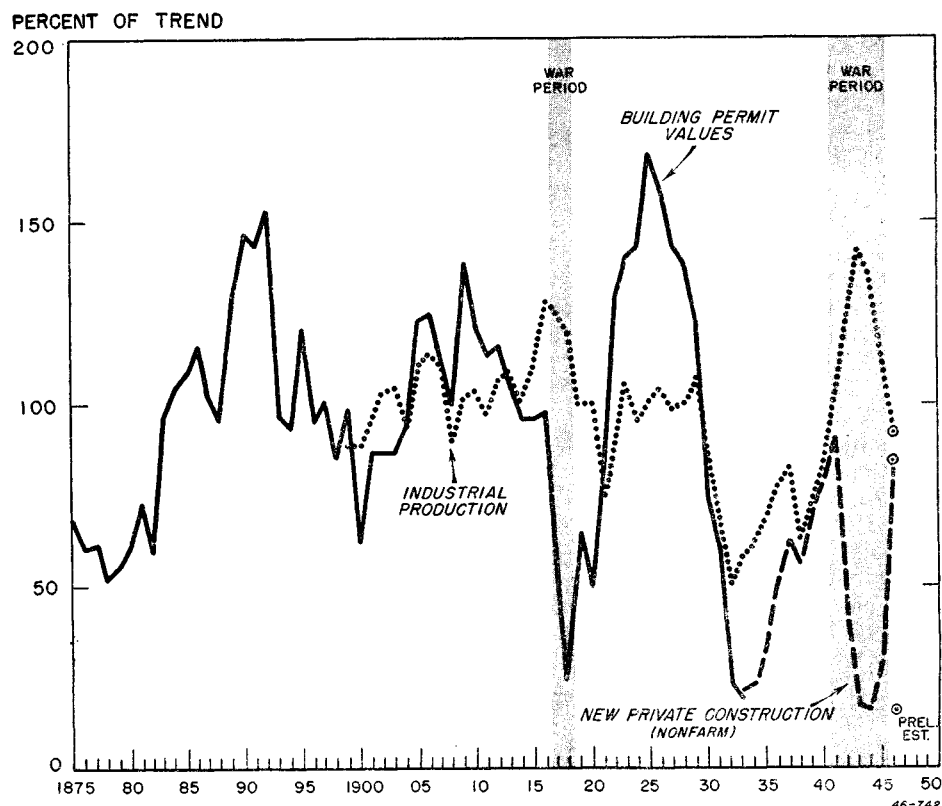
A high level of construction activity does not assure a continuous business boom, but what is assured is that the peaks and the troughs in business activity will both tend to occur at a higher level than if construction had been depressed. In addition, when construction is active or increasing in activity, the upswings in business tend on the average to be longer in duration, and the downswings shorter.

The longer upward and downward swings of the construction cycle are interrupted by many contrary movements due in large part to—or perhaps in anticipation of—the temporarily opposing movements of major and minor business cycles. An outstanding exception occurs during a great war, when business expands while construction may be forced to contract despite considerable, but repressed, demand for the products of the industry.

Similarities in War Periods

The present post-World War II situation of both construction and general business is at least in part analogous to the post-World War I situation. Prior to World War I, construction had reached a peak in 1909, at which time a surplus of real property was considered to have been produced, so that construction of buildings declined to a trough by 1918,

Chart 1.—New Private Nonfarm Construction and Industrial Production, Expressed As Percentages of Long-Term Trends¹



¹ Trend for building permit values was calculated for 1875-1933, and for industrial production for 1899-1929. Building permit values and new construction were deflated by use of cost indexes described in footnote 3 of text.

Sources of data: Industrial production, indexes of National Bureau of Economic Research for manufactures and minerals combined for 1899-1918, linked to industrial production series of Board of Governors of the Federal Reserve System for subsequent years. For other series, see footnote 3 of text. Deviations from trends calculated by U. S. Department of Commerce.

with the physical volume of all construction reaching its trough in 1920. War-time restrictions may have helped determine the precise timing of the low point, but on the basis of past experience with the construction cycle a low point was to be expected at about that time. This trough in construction activity came at a time when general business activity was stimulated by war and its after effects, so business moved oppositely from construction.

At the end of World War I, the demand for the products of construction had again caught up with the available stock of such products, so that thereafter a construction boom gradually developed, reaching a peak for new construction in 1926 and for all construction, including maintenance, in 1927. Meanwhile, business went through a number of cycles, with peaks in 1920, 1923, 1926 and 1929, and troughs in 1921, 1924 and 1927. These fluctuations of business activity were reflected to varying degrees in the minor movements of construction activity, but without noticeable effects on the major movements of construction, i. e., the rise to a peak in 1926-1927 and downward thereafter. Throughout most of

the 1920's the buoyancy of construction cooperated with other factors to keep business at a generally prosperous level.

The great depression of the 1930's was brought on by a combination of many factors, only one of which was the decline of construction activity after 1927. Nevertheless, the low level of construction during most of the 30's was one of the chief obstacles to full recovery. It was only at the very end of the decade that construction attained anything like a high level.

The evidence available indicates that construction cycles preserve considerable continuity through even a great war, though such a war may delay or even split the peak of a construction cycle. If a great war comes when construction is inactive, as during the Civil War or World War I, construction, if affected by wartime restrictions, will expand less than other business, thereby leaving the low phase of the construction cycle largely unaltered. After such a war, any war-caused stimulation of construction, such as results from a higher marriage rate or the needs of reconstruction, will merely accentuate the subsequent active phase of the construc-

tion cycle without much affecting its timing. If a great war comes at a time when the active phase of the construction cycle would be expected, as during World War II, most construction will have to wait; but the prewar shortages that had been about to generate a construction boom might carry over into the postwar period, when they will be reinforced by war-caused stimuli, so that construction will tend to boom in the immediate postwar period.

Two World War Cycles Compared

Are there any lessons to be learned from our economic experience during and after the last war which may now serve as a guide in formulating policy, and in dictating action aimed at bringing about high and sustained levels of construction activity? The problem is primarily to ascertain whether there are any factors in the current construction outlook which may cause a sharp reaction from present levels, and secondarily to note whether the boom and rapid collapse which followed World War I offer any clues to the behavior of the construction market in the near term.

Though analysis of cycles indicates a postwar construction boom, the size and duration of such a boom cannot be deduced solely from cyclical analysis, particularly since the construction boom of the 1940's appears to have been split by the war into two parts: the earlier 1940-1942 phase, and the postwar phase. Exactly how much construction boom the latter will include must be deduced from a study of pertinent factors in the current situation, and whatever can be learned from the situation following World War I.

Chart 1 presents indexes of construction and of business activity in the United States from 1875 to 1946.³ Chart 2 illustrates fluctuations in building activity and in the index of building costs for two World War periods. The permits series for the World War I period is seasonally adjusted and covers privately financed buildings such as office

buildings, lofts, warehouses, factories, garages, hotels, apartments and dwellings, and represents the value of work started each month. The panel for World War II shows the fluctuations of the dollar value of work put in place on new private construction (Commerce series excluding public utilities) monthly from August 1939 to July 1946, as compared with the American Appraisal Company cost index for the same period.

The salient points in the movement of the building permits series after the first World War may be summarized as follows: (1) the volume of private building covered by permits got off to an excellent start in 1919; (2) activity in the first quarter of 1920 indicated a record year on the basis of normal seasonal factors; (3) that promise was not fulfilled, and 1920 became a year marked by continuous slump with the low point reached in December; (4) an unbroken rising trend, which obliterated the usual seasonal pattern, prevailed all through 1921 and continued with only minor setbacks through the peak years of the late 1920's.

A similar situation seems to be emerging in the post-World War II period. Construction in the private commercial and industrial categories and in the residential categories proceeded at a moderate rate in the beginning of 1945 and drew little stimulus from the termination of hostilities with Germany in May of that year. (See chart 3.)

Other construction, heavily weighted by military projects, levelled off after VE-day. After VJ-day, construction for the military services began a precipitate drop, but private construction of all types continued to rise at an accelerated pace. The effect on the year as a whole was that the rather small volume of \$4.75 billion was completed, as compared with \$4 billion in the previous year of war-restricted construction.

The monthly rate of operations, which had begun to speed up in the fall of 1945, continued right on through June 1946 with hardly any slackening. Some

straws in the wind, however, seemed to indicate that a downturn might be imminent. Especially noteworthy were: a diminution in the rate of increase in value of construction put in place; a decline in number of new dwellings started after a peak in May; the fact that the time required to complete new structures was lengthening, and had increased by at least 50 percent for single dwelling units; and increasing complaints that actual costs of construction were well above those reflected in official materials prices or nominal wage rates.

Close examination of all factors is required to determine whether a turning point has been reached.

Factors Influencing Construction

Before coming to any conclusions as to the meaning of similarities in short cycles of building construction it is necessary to examine some of the reasons which have had more or less historical or academic acceptance as causal elements in the patterns observed. This is a prerequisite for an effort to determine on a logical basis whether the parallelism indicated on the charts is significant, and, too, may make some contribution to the analysis of the present situation and its foreseeable consequences.

Population Movements

Population movement, an important factor influencing construction, includes not only changes due to natural increase but to additions resulting from immigration, and migration within the borders of the country. Increase in the number of dwelling accommodations necessarily requires increases in the number of schools and hospitals; community, business, and recreational facilities; roads, highways and public utility services. The influence of major movements in population growth upon construction is unquestioned.

But the effects of population growth in the short run must be carefully appraised if the conclusions are not to be misleading. In a single area, population changes may not affect building activity noticeably; on the other hand, building activity may change while population growth is approximately level. Some of the reasons for this are contained in the economic abilities of the new population, availability of capital, interboundary movements, vacancy rates, general business conditions, legal restrictions in the form of zoning or housing laws, and the age and characteristics of both the existing buildings and the existing population.

³ For 1875-1933, the building permit index used was obtained from William H. Newman, *The Building Industry and Building Cycles* (1935), table IX, pp. 63-71. This index is based on: Bradstreet's building permit values, 120 identical cities for 1911-1933; Babson's monthly values of building permits in 20 cities for 1903-1910; Ayre's permits in 50 cities for 1900-1902; and permit data from 13 cities, for 1875-1900. The building cost index of the American Appraisal Company (revised) was used for 1913-1933. For earlier years, use was made of Newman's cost data based on arithmetic averages of the American Appraisal Company's cost indexes for frame, brick, and reinforced concrete buildings, for 1900-1913,

and of the frame and the brick building cost indexes for 1875-1900. For 1933-1946, cost and building value data of the Department of Commerce are used. Due to the incompleteness of the major building cycle commencing in 1933, no normal trend for building was computed for 1933-1946 and a constant normal was assumed. The relatively low level of the building index for these years reflects in part the low level (at constant prices) of building in 1933-1946 as compared to a normal determined by the high average level of the 1918-1933 building cycle, and in part results from the smaller proportion of total new construction in the private nonfarm building category, particularly during wartime or depression.

In considering the growth of population or increases due to migration it is important to note that the significant feature is the net addition to population in a given area—and not the net addition to population for the country as a whole. "An increase of population in one locality does not offset a decrease in population in another locality. Because of the immobility of buildings, a migration of people within a nation or from the farm to the city may call forth new building activity in just the same way that a net rise in total population will. Therefore, in speaking of 'population growth' we mean the sum of all increases in population, rather than a net change in total population."⁴

For this reason, estimates of total need for additional housing based on national figures for the increased total population, estimated number of marriages, undoubling and doubling of families, and number of vacancies are apt under favorable conditions to understate the total demand. These data lead to a figure representing needs considered relative to *net* changes in the total population.

In spite of these deficiencies, the analyst is not helpless in the absence of data for many important local areas. While it is true that a more precise estimate of need can be made from a summation of the increases in population

in each community, this total may approximate the net figure under certain sets of circumstances. However, the sum of positive increases must necessarily be larger than a net figure and would provide a more realistic estimate of total need than a net difference between positive and negative changes in population over the entire country.

It seems evident that accumulated demands resulting from migration, increases in population, and family formation are much greater in relation to total population now than they were after the last war.

The gross requirements for additional housing by the end of 1947 are estimated by the National Housing Agency at about 4.5 million units. Against this requirement, approximately 1.4 million existing units will become available due to normal turnover and vacancies occurring as the result of dissolution of families through death or divorce. Thus the net need of 3.1 million dwelling units will not be completely satisfied by the Veterans' Emergency Housing Program, the goal of which is to make a total of 2.7 million temporary and permanent units available by the end of 1947.

A measure of the stress imposed on family living by the current shortage is provided by a recent government survey. Although, as of June 1946, almost three-fourths of the married veterans had separate dwellings, the remaining 1,500,-

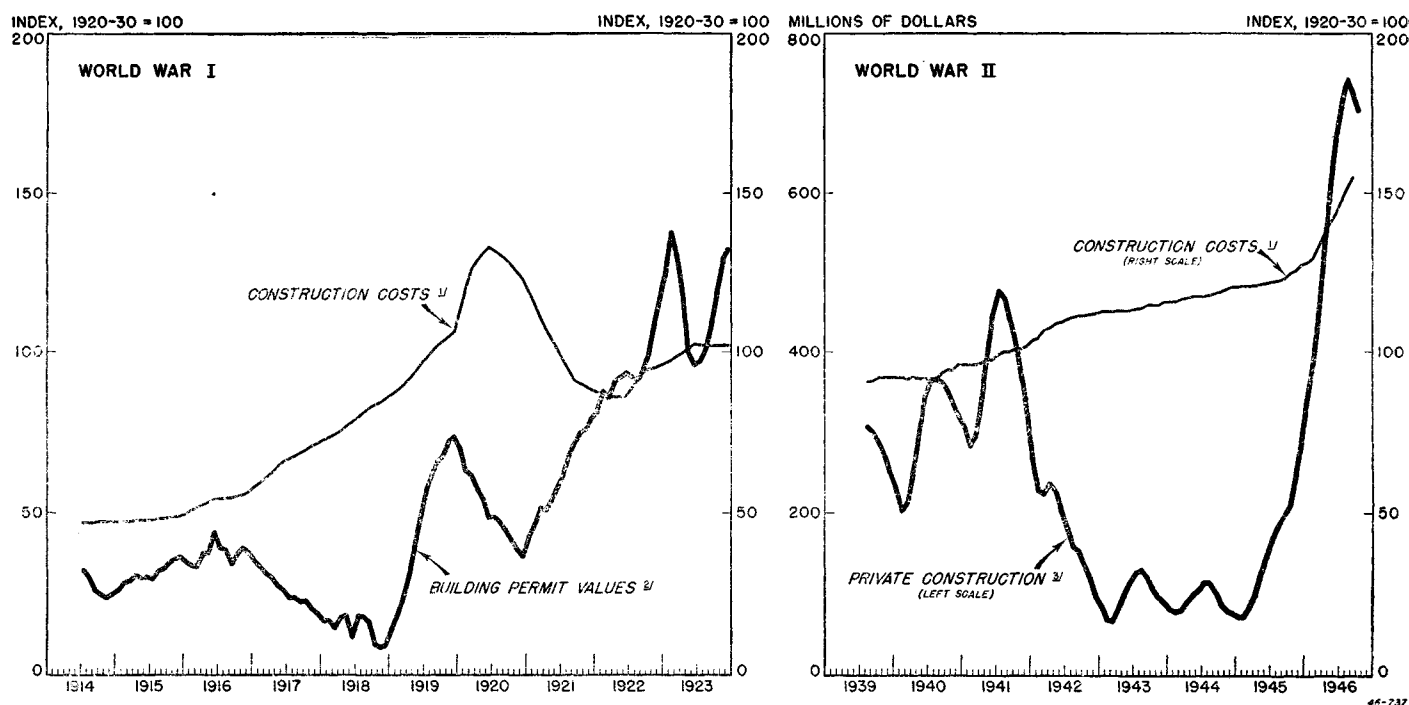
000 were living with other families or in trailers or rented rooms.

Construction Costs

Considerable weight is usually assigned to the hypothesis that building costs are the controlling factor in construction activity. The rigidity of building materials prices and cost of services come under the most intensive scrutiny in any surveys to forecast demand for the products of building. An examination of the data during short cycles indicates that building costs rise as building activity increases, and fall off very slowly or even advance slightly when building activity slackens.

The association of rising costs with falling building activity has been generally analyzed as a contributing reason for choking off a boom, or contributing to an unsound price structure which may result in deferred collapse of the real-estate market. These considerations are important, but they do not mean that rising costs necessarily choke off building volume. During most of the upward phase of a short cycle, volume and costs rise simultaneously. The subsequent decline in volume, perhaps accompanied by a further rise in costs, may or may not be due to the influence of costs alone. The association between these two factors has no implications for a causal relationship between the two; indeed, the assignment of a causal relationship is as

Chart 2.—Private Construction Activity and Construction Costs in Two War and Postwar Periods



¹ Basic data for World War I period are the unrevised series and for World War II are revised series; revisions of annual data are available from 1913 and of monthly data from January 1939.

² Data are 3-month moving averages, adjusted for seasonal variation.

³ Represents new private residential and nonresidential construction, excluding public utilities.

Sources of data: Construction costs, American Appraisal Company, recomputed to a 1920-30 base by U. S. Department of Commerce; building permit values (120 cities), Dun & Bradstreet, Inc.; private construction, joint estimates of U. S. Departments of Commerce and Labor.

difficult here as in any other branch of economic behavior.

It is clear, of course, that under some circumstances an increase in costs is itself responsible for a downturn in building activity. Such a chain of causation is perhaps particularly likely to operate if the increase in building costs is seriously out of line with increases in income. Costs, however, are not necessarily a continuous dominant factor in the construction market, and many of the rises and declines in construction volume are brought about by the operation of other forces.

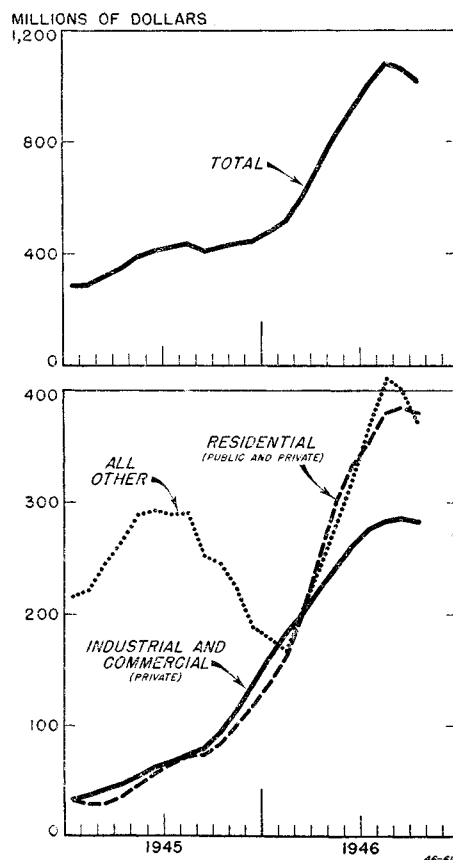
It is perfectly understandable that the introduction of these other factors could offset the effect of rising prices and permit a building boom to progress despite increasing costs. One writer on this subject⁵ concludes that if "[certain] comparisons between building costs and minor building cycles suggest any cause and effect relationship, it would be that fluctuations in building activity give rise to fluctuations in building costs, rather than vice versa."

The record of building costs is of particular interest during the first World War period. In 1915 and 1916 small increases in building volume initiated were registered, but these increases were coincident with increases in building costs. In 1917 and 1918, building activity dropped off, due principally to war restrictions. Building costs, however, continued to rise steadily during 1917 and 1918. A likely explanation is that wage rates were high and the war-engendered building activity was extremely profitable. There existed the peculiar situation of a sharp rise in costs (the index rising from 140 to 180) while building activity slackened off and fell to one of the lowest points recorded in that period.

Following the armistice in November 1918, building activity initiated—as measured by building permits—began to boom. The value of permits issued increased without any let-up until June 1919. This increase was not visibly hampered by the steady increase in building costs which continued at the same rate which had characterized it since the middle of 1917. After June 1919, issuance of building permits dropped off and the boom collapsed, reaching its low point in December 1920.

Simultaneously with the beginning of the collapse in building construction, costs began to rise at a steeper rate than they had in the previous three years, reaching the high point in June of 1920 while building activity was still tumbling. From that point until mid-1922 building costs declined again, but the low point

Chart 3.—New Construction Activity



Sources of data: Joint estimates of U. S. Departments of Commerce and Labor.

was practically the same as the point of departure for the original post-war building boom which began early in 1919. Such behavior of costs, in rising sharply after the number of permits issued had begun to drop, perhaps is explained by the fact that the volume of construction in progress but not completed created sufficient pressure of demand to force prices higher. Although the longer-range outlook indicated by new permits granted was such as to foreshadow a decline in demand and hence weakening of prices, the short run effect was quite the opposite.

Many students of construction trends have concluded that the rise in building costs brought about the decline in building activity, and that the recovery of building in 1921 and 1922 occurred because building costs declined sufficiently to make it profitable once more to undertake new construction. Some of the more astute observers have hedged with the qualification that the decline was sufficient to permit a rise in building activity to get under way, but that it did not go far enough to permit the boom to be built on a sound basis. In other words, the building boom was founded on an unsound cost basis and the high prices

which were paid were responsible for the ultimate collapse of building activity several years before general business conditions turned down.

The explanation offered above implies that there is a disparity between the movements of building costs (and building materials prices as an element of those costs) and other prices—that building materials prices rise so much more rapidly than general prices that their real cost becomes prohibitive. Thus, when prices of building materials are out of line with general prices, rents, and national income—and the exchange value of building materials is high relative to general commodity prices—building activity must decline until building costs are more nearly in balance with other prices and economic indexes. But if the state of balance is misjudged and building activity proceeds prematurely, the groundwork is laid for a serious collapse.

It is not necessary to reject these explanations in order to conclude that they are insufficient as a basis for determining at what point building activity will relapse. The importance of other factors in the situation is so great that for a considerable period their weight may overbalance the effect of high relative prices and costs of building. Without denying the possible bearish influence of price factors in the present situation, there are counter-tendencies in the 1946-47 construction outlook for example, which may bring about a high level of sustained construction activity.

The association between rising building costs and building activity that was noted after the first World War made its appearance again in the comparable period following the second World War. The years 1939, 1940 and 1941 were good building years, with each year's total of building activity successively higher. During this period the index of building costs rose steadily if slowly from 200 in mid-1939 to 225 at the end of 1941. Private building activity declined in 1942, but this decline was more than offset by a tremendous volume of war-inspired public construction—so that 1942 was the biggest year in the recent history of construction. The same causes which were responsible for the rise in building costs in the previous war were effective during this period, and high wages, coupled with large demands, made a high cost level almost inevitable.

In 1943 and 1944 new construction activity was restricted by government order to essential projects; total volume was \$7.9 billion in 1943 and \$4.2 billion in 1944. Despite the low level of construction and the fact that price controls on building materials were effective dur-

⁵ Newman, op. cit., p. 23.

ing most of this period, costs of construction continued to rise and stood at 265 at the end of 1944, as compared with 240 at the peak of building activity in 1942.

Relaxation of controls on building in 1945 occurred in two stages. Industrial construction was encouraged after the cessation of hostilities with Germany and all types of construction were encouraged after VJ-day. Controls on construction were completely removed with the revocation of Limitation Order L-41 in October 1945. Private builders reacted very strongly to the opportunities in building and started off a boom which resembles closely the pattern of 1919.

Although price controls continued in effect during this period, increases in wage rates and official price increases granted by OPA were sufficient to accelerate the rate of increase in the cost of building construction which had prevailed for almost four years.

The increases in costs shown by the index do not measure all the increase in cost which occurred. On the materials side, the difficulty of policing lumber prices and minor illegalities in the case of half a dozen other important construction materials raised actual market prices considerably above official prices. On the labor side, increases in wage rates were magnified by occasional side payments. Total costs of labor were increased by an inability to proceed efficiently on the job due to delays in delivery of materials, lower productivity, and inability to obtain craftsmen at the particular time required by the progress of the job.

Despite these cost increases, building activity has attained a tremendous rate. The fact that increasing building activity was again in this instance associated with sharp price increases would seem to temper the theory that rising prices impede the inauguration of a building boom. The coincidence of high prices and rising construction volume is evidence, too, of the importance of psychological factors in business economics. Entrepreneurs, and speculators particularly, are not deterred by the level of costs they must meet to engage in business. Their motivation lies in the fact that costs can be met and covered by a profit if their ventures are successful. The expectation of profit in a given deal or series of deals is the lure that permits high and increasing prices to be paid. The study of changes in building activity seems to exemplify the thesis that business advances by expectation of gain and that high prices alone do not discourage builders.

Rent Levels and New Construction

It is sometimes maintained that restrictions on the amounts which may be charged in rentals have a depressing effect on the market and thereby tend to retard construction of new multi-family facilities. The matter of determining the magnitude of a rental increase which is necessary to compensate for total increases in building costs for various types of structures is a subject worthy of close study. However, the assumption that pressure on rents was a contributing factor to the slackening in residential building which occurred in 1919 does not seem to conform to the facts. During World War I there were restrictions on rentals that had but slight legal support. Consequently it is not surprising that the available indexes of rentals for that period show that rents began to rise in 1917 and continued through the middle of 1919.

The assumption that rental rates were a depressing factor at least partly responsible for the slump in building in 1919-20 is contradicted by the fact that the decline in construction in mid-1919 coincided with a stepped-up rate of increase in rentals. By 1921, which was the year of recovery for residential building, residential rents had become fairly stabilized and their increase from that year until 1926 was rather minor. Despite the tapering off in rental indexes, residential construction continued its upward pace and reached its peak in 1925. The 849,000 dwelling units built in 1926 still constituted a high total when compared with the level of building in the period 1917 through 1921.

The apparent lack of relevance of changes in rent indexes as an explanation for changes in residential volume might perhaps be countered with the claim that the decline in building which occurred in 1920 was associated with circumstances in which rent levels obtainable were not sufficient to support the projected number of rental units, and that building of these units consequently dropped off. In terms of this reasoning, the higher rent level which prevailed in 1922 and following years—although only very slightly higher than the previously existing ones—provided enough financial incentive to make building of additional residential units attractive. That this explanation does not cover the data from 1917 to 1920 detracts somewhat from its usefulness. Perhaps the most satisfactory conclusion to be reached is that rent returns considered as a single element do not explain the upward and downward movements of residential building and must be considered in conjunction with other factors.

Thus, the factors which we have already examined and which receive general recognition as being among the most important in influencing the volume of construction seem to have provided no conclusive direction to an understanding of the building situation which concerns us at the present time. The contention which has been advanced by many analysts that rising building costs are responsible for stifling building activity seems particularly inadequate in the face of the data which have been presented for the two World War periods, from which it seems fairly plain that rising costs by themselves have little effect on the inauguration of a period of great building activity.

Inadequacies of Relevant Data

At least a partial explanation for the failure of the elements considered in this analysis to provide a clear cut basis for forecasting the future can be offered. The basic difficulty appears to be that the data available are almost all averages or net figures which purport to represent activity for the country as a whole. These measures have been adopted and are used because they have the merit of condensing a wealth of data into a few series of figures which can be easily handled. But the merits of convenient series also contain serious drawbacks to their usefulness, because they frequently obscure the interaction of significant factors and tend to hide rather than to reveal underlying causes which are the objective of research.

We have made the point above that an increase in population is one of the factors for which a national figure has little meaning. The factor in which we have an interest is the net addition to population at any given locality. The measure of need for new dwelling units based on increase in population in the nation as a whole would be the sum of all net additions in various localities. A similar point can be made for the study of vacancies. It does not matter if the net vacancy rate of the United States is 2 percent or 4 percent or 6 percent. The data required are vacancy rates for given localities which can be associated with the population increases and with other important factors such as incomes, savings, rent levels, general business activity, age distribution of the population, and characteristics of housing for the specified areas.

In like manner, the effect of differences in savings and income on the total effective demand for housing may be considerable in communities which otherwise have superficially similar prospects for construction activity. Other factors, including some whose in-

fluence may not have been apparent to us, succeed in differentiating various local markets for building. Close study for one area might give us a sound basis for forecasting progress of construction over a fairly short period. However, an attempt to study these factors on the basis of the averages or net figures available for the nation as a whole does not seem to offer as good prospects for forecasting. Difficult as the undertaking would be, it seems that a first rate forecasting job can be done better on the basis of adding together the findings for individual communities than by attempting to analyze the national situation on the basis of a half dozen convenient indexes of economic progress.

Prospects for Construction

Although it can be shown that general price increases do not retard the beginning of a construction boom, it is evident that price increases may affect the progress of the boom. The difficulty of assuming an association between high costs and the cessation of a construction boom on a national basis may perhaps be resolved by consideration of what might happen in individual cases and for particular localities. It is perhaps also possible to ascertain how much of a difference is necessary to stifle an upward movement in construction after it is under way. This consideration should include the case of private individuals building residential units, as well as commercial and industrial structures and publicly financed construction.

Home Sales Market

Treating private individuals first, it is estimated that more than two-fifths of American families receive incomes of less than \$50 per week and are not candidates, generally speaking, for houses whose carrying and maintenance charges amount to \$50 per month or more. By common agreement, the latter means a house which sells for \$6,000 including the lot. Such individuals are now being asked to extend themselves and to buy houses at prices averaging more than \$8,000. The rush to buy these houses seems to indicate that there are enough people with incomes sufficient to afford them, or that people who cannot afford them are brushing aside the implications of the burden of the long-term obligations they are assuming, because of the desperate housing plight in which they find themselves now.

The effect of over 100 OPA increases for building materials in April, May, and June 1946, unofficial price rises in the period of decontrol between July 1st and July 27th, and the inability of the

OPA to resist most of the price increases demanded, has been further large increases in the prices of building materials. These increases may merely produce a level of prices no higher than the unofficial quotations which have prevailed for several important materials for more than 6 months.

These price increases will, to some extent, stabilize contractors' costs, and it may be that contractors who have previously been afraid to make commitments to build houses will now undertake to do so. The prevailing high costs—with an upward trend indicated—have a slight advantage over the previous cost situation in that they are relatively stable costs. If these conditions stimulate builders sufficiently to produce an increase in the supply of houses, it is, of course, an encouraging development, but it can be fairly well assumed that individuals who can afford a \$6,000 house and who might extend themselves to buy an \$8,000 house will simply depart from the house purchase market when the price goes up to the neighborhood of \$10,000.

The controls imposed by the Veterans' Emergency Housing Program set a ceiling of \$10,000 for single family homes which may be built while the program is in effect. Because of high prices and costs, homes selling for \$10,000 contain the amenities and equipment associated with \$5,000-\$7,000 price tags in the pre-war period. There is a substantial market for houses embodying more facilities and more elaborate construction than those which can be built while controls are in effect.

Since this demand must of necessity remain unsatisfied, some observers conclude that there is thus created a backlog of demand for high-priced construction which will help to support building activity when demand for utility units at low prices tapers off. This is true to a certain extent but its importance can easily be exaggerated. Some support will come from those whose incomes, savings, and standard of living warrant the construction or purchase of truly high-priced, high-quality homes. This may be termed the bona fide demand, and, calculated on prewar statistics adjusted for wartime changes, it produces only a very small number of potential purchasers, who may be considered the cream of the market.

Another segment of the demand for higher-priced homes is less substantial and is supported chiefly by the inflated price levels prevailing for residential property. In this category we have home owners who are candidates for high-priced houses by virtue of the fact that they have homes which they can

sell. An individual who bought a \$10,000 home in 1939 may receive as much as \$16,000-\$18,000 if he sells now. Therefore, such a person is likely to be in the market for a \$16,000-\$20,000 house. Obviously, the contribution to support of the higher-priced market made by such individuals is not very firm and depends upon the continuance of present high prices for real property.

Despite the importance of demand for high-priced dwellings in setting styles and creating the market for new materials, equipment, and improvements to be incorporated into new homes, the volume of home buying by the upper-bracket groups is not large and cannot for long sustain the house-building market. With high prices forcing low- and middle-income demand out of the house-purchase market, the demand for housing accommodations must inevitably express itself as demand for rental units.

Residential Rental Market

In general, rents demanded for new multi-family units are rather high, reflecting, in part, expensive building practices under present conditions. However, high rental rates are not now strong deterrents to prospective tenants, and they offer better than average returns to building operators.

The outlook for the building of apartments and apartment units is good because of high demand. Even at very high rentals, new dwellings for rent present a distinct contribution to the relief of existing shortages. The main reason for this is that individuals who undertake contracts to pay rents which they cannot afford are not undertaking long-term legal contracts and jeopardize no equity. It is quite possible to pay two or three times as much as one can afford for a period of two or three years if one has a backlog of savings. Such a condition prevails for a great many individuals and family units. In the long run, such a deal would probably prove better than undertaking now to buy a house which is overpriced and possibly jerry-built.

Favorable opportunities for landlords are also present in the current situation. Recognition of the fact that present and anticipated costs are not out of line for large builders is evidenced by the emergence of several life insurance companies as builders in New York City, Boston, and one or two other communities. Efficient management, large scale purchasing and bargaining power—both with material suppliers and with labor unions—give them an advantage in holding the costs of their completed structures to a minimum in the present mar-

ket. Of course, it is possible that the returns which tempt life insurance companies to embark on long-term investments would not attract individuals or groups with smaller capital resources.

Nonresidential and Public Building

The situation in commercial and industrial building is even better than the outlook for residential building. These types of construction can earn a much larger return for their owners or operators. The cushion of savings acquired by business concerns is very large, and the ability to write off losses under generous tax laws lessens the risks for those ordering the construction of commercial and industrial buildings. High prices affect this class of builders far less than they do residential builders.

Publicly financed building is unlikely to play an important part until the demand for private structures has been satisfied. The volume of public construction will be confined largely to the provision of streets, public utility services, and a few long-delayed development projects and public improvements such as bridges, tunnels, and other measures necessary to save some growing cities from self-strangulation. Perhaps the one exception to the control of public building is the construction which is proceeding for the Army and Navy. However, the military services have agreed to limit their construction in order to permit scarce materials to be channelled to private residential and to private and public hospital buildings.

The Current Outlook

Prospects for construction, including housing, appear very good for the period immediately ahead. Beyond this short

period—perhaps the next two years—many of the elements of demand will continue to work powerfully toward a long-sustained high level of construction activity, but this longer period is outside the scope of the present discussion.

The underlying strength of the construction situation depends upon the enormous size of the demand for housing and other products of construction. While it is recognized that latent factors exist—particularly the possibility of further sharp increases in construction costs and the possibility of a fairly general recession in business activity, originating in other segments of the economy—which might work against continuance of high levels of activity in construction, it is not believed that if those forces developed they would be powerful enough to affect seriously the strong demand for new buildings and other construction products.

Construction costs, though greatly increased since the last prewar year, do not appear to be sufficiently high to bring about, of themselves, a construction decline. There is some evidence, however, in the recent decrease in the volume of real-estate transfers, in the recent apparent tendency towards stability in prices of residential property, and in the increasing discussion of deferment of industrial and commercial construction, that further large price increases might lead to at least a temporary decrease in demand at the new, higher prices. Such a decline would probably be particularly noticeable in residential construction. However, if the building of dwelling accommodations should falter as a result of sharp price increases, the slack might very well be made up—at least in 1947—by private commercial and industrial building.

A major factor to be considered in assessing the short term situation is the effect of a general business recession or depression occurring within the next several years. The accumulated demand for housing and the low level of residential building during the war years imply that the demand for more dwellings will be substantial even during a short recession. The effect of a recession, in fact, might be to bring about a cost structure which would provide housing at lower than prevailing prices.

The effect of a recession upon private commercial and industrial construction would probably be more pronounced than upon residential construction, because there would be a strong tendency to postpone construction to take advantage of prospective lower prices, and because more of the edge would be taken off the demand.

Support for a high level of construction would be provided by public construction. Backlogs of demand have been built up during the war years in public construction as well as in private, and an increasing volume of this demand could be unleashed—though with some lag.

It has been assumed in the above remarks that a near-term recession would be neither sufficiently severe nor sufficiently long-lasting to have an extended depressing effect on employment and incomes. More consideration would have to be given to the effects which might flow from a long-continued major depression. However, the very strength of the underlying construction situation appears to be one of the strongest possible guarantees against a major depression of this nature in the period immediately ahead.

The Business Situation

(Continued from p. 6)

Thus, while the ratio of capital secured through new issues has been increasing, this has not been the major source of the funds used for plant expansion. The corporations came out of the war with substantial liquid reserves, and current depreciation charges plus retained earnings have provided a large volume of funds for expansion purposes. To some extent, also, bank loans may have provided funds for plant and equipment expenditures.

Profits Rising

Corporate profits in the aggregate have been rising since the low point of

the reconversion period in the first quarter of 1946. Second quarter profits were larger than in the first quarter, and the company returns so far issued covering the third quarter reflect a further rise, as well as considerable lessening of the disparity of performance between the so-called reconversion industries and the others. The former group is not yet reporting profits relatively as high as the others, but the difference in comparative performance is not so striking as in the first quarter. The railroads, which experienced a deficit in the January-June period, did better in the third quarter.

Profits before taxes are less than during the war, but with the reduction in the effective tax rate profits after taxes

are currently above the war levels. They are likewise considerably above any prewar totals, though in relation to the volume of corporate sales, profits so far this year did not reach prewar ratios for years of high business volume.

The difficulties in the new capital market can hardly be ascribed to either the lack of investment funds available or to the current level of profits. What appears clear is that—just as in the stock market where a shift occurred in buyers' expectations—doubt arose as to the prices at which new securities were being offered.

Savings Reduced, But High

While available data do not indicate that the demands for additional capital

in the new issue market are outpacing the supply of available funds, it is nonetheless a fact that, compared with a year ago, the supply of investment funds available from current savings of individuals has been reduced.

The large rise in consumer expenditures immediately following the end of the war occurred during a period when the disposable income of individuals (income received less taxes paid) underwent a decline. While this income subsequently rose from the reconversion low, it was not until mid-1946 that disposable income moved above the war peak. This sharp rise in the ratio of spending to income has meant that by the past quarter

the net savings of individuals were reduced to only about half as much as they were in early 1945.

While the current \$20 billion annual rate of savings is still large on the basis of prewar totals, the amount is much less than it was at the end of the war. Nevertheless, the liquid funds of individuals rose to an all-time high by the end of the third quarter of this year. Furthermore, the reduction in current savings does not mean that the funds available for investment out of current incomes have necessarily been reduced in proportion to the decline in total savings since the reduction in savings would

not be expected to be uniform by income groups. The flow of dividends, an important source of incomes available for investment, has increased about 10 percent so far this year over a year ago.

Under prevailing economic conditions which have been reviewed in the preceding section, it is not surprising that a more cautious attitude is appearing with regard to the value of new security offerings. Prices of these securities over the longer run will be determined by the trend of basic interest rates, and by the earning power of securities over a period when a more usual demand-supply position than exists at the moment has been restored.

New or Revised Series

Estimated Number of New Dwelling Units in Nonfarm Areas: Revised Series for Page S-5¹

Year and month	Total non-farm	Urban	Item	January	February	March	April	May	June	July	August	September	October	November	December	Total	Monthly average
1910.....	475,000		1940														
1911.....	480,000		Total nonfarm.....	27,022	34,862	46,762	56,551	57,737	49,972	57,393	56,483	57,762	65,960	48,533	43,563	602,600	50,217
1912.....	490,000		Urban, total.....	18,916	24,891	31,572	38,324	37,941	29,861	36,631	36,918	38,481	43,099	31,126	28,852	396,612	33,051
1913.....	455,000		Privately financed, total.....	15,981	20,974	28,513	34,194	33,237	27,694	31,580	31,630	31,082	33,159	23,471	21,651	333,166	27,764
1914.....	445,000		1-family.....	11,018	14,329	21,882	26,891	26,809	23,102	25,774	26,283	25,481	26,171	18,490	15,791	262,021	21,835
1915.....	475,000		2-family.....	997	1,352	1,568	2,035	1,770	1,513	1,841	1,912	2,091	2,219	1,449	1,219	19,966	1,664
1916.....	480,000		Multifamily.....	3,966	5,293	5,063	5,268	4,658	3,079	3,965	3,435	3,510	4,769	3,532	4,641	51,179	4,265
1917.....	230,000		Publicly financed.....	2,935	3,917	3,059	4,130	4,704	2,167	5,051	5,288	7,399	9,942	7,651	7,203	63,446	5,287
1918.....	120,000		1941														
1919.....	330,000		Total nonfarm.....	41,198	43,765	60,172	75,159	70,690	77,203	74,610	69,750	67,046	56,179	46,651	32,777	715,200	59,600
1920.....	247,000	196,000	Urban, total.....	27,505	28,094	36,171	48,045	43,885	47,994	45,025	41,622	40,389	33,646	27,868	19,338	439,582	36,632
1921.....	449,000	359,000	Privately financed, total.....	24,361	21,795	31,838	38,316	39,405	37,302	40,474	34,029	30,801	29,709	24,337	17,098	369,465	30,789
1922.....	716,000	574,000	1-family.....	17,035	16,480	24,760	30,828	30,967	30,549	31,887	29,356	26,011	24,727	17,910	14,514	295,024	24,585
1923.....	893,000	716,000	2-family.....	1,321	1,518	2,257	2,334	2,388	2,211	2,061	1,977	2,218	2,000	1,298	1,169	22,752	1,896
1924.....	937,000	752,000	Multifamily.....	6,005	3,797	4,521	5,154	6,050	4,542	6,526	2,696	2,672	2,982	5,129	1,415	51,689	4,307
1925.....	849,000	681,000	Publicly financed.....	3,144	6,299	4,333	9,729	4,480	10,692	4,551	7,593	9,588	3,937	3,551	2,240	70,117	5,843
1926.....	810,000	643,000	1942														
1927.....	753,000	594,000	Total nonfarm.....	34,500	51,300	52,700	59,700	60,600	46,300	26,700	27,500	40,400	32,200	30,400	34,300	496,600	41,383
1928.....	509,000	400,000	Urban, total.....	21,552	36,071	31,970	33,336	26,091	21,998	16,636	16,975	22,479	22,431	14,954	16,345	280,838	23,403
1929.....	330,000	236,000	Privately financed, total.....	16,956	21,599	28,988	25,422	12,381	11,344	12,838	13,397	13,312	11,518	9,144	7,993	184,892	15,408
1930.....	254,000	174,000	1-family.....	13,866	15,679	23,045	17,765	10,065	8,387	9,248	10,087	9,854	8,876	6,554	5,482	138,908	11,576
1931.....	134,000	64,000	2-family.....	1,163	1,464	1,964	2,804	889	1,056	1,139	793	1,105	1,121	1,165	1,084	15,747	1,312
1932.....	93,000	45,000	Multifamily.....	1,927	4,458	3,979	4,853	1,427	1,901	2,451	2,517	2,353	1,521	1,425	1,427	30,237	2,520
1933.....	126,000	49,000	Publicly financed.....	4,596	14,472	2,982	7,914	13,728	10,636	3,798	3,578	9,167	10,913	5,810	8,352	95,946	7,996
1934.....	221,000	117,000	1943														
1935.....	319,000	211,000	Total nonfarm.....	45,000	40,100	33,000	26,700	33,600	21,800	24,200	27,600	24,300	28,100	26,100	19,500	350,000	29,167
1936.....	336,000	218,000	Urban, total.....	21,010	22,578	17,994	16,779	20,682	14,132	14,798	17,430	14,016	16,724	19,100	14,007	209,250	17,438
1937.....	406,000	262,000	Privately financed, total.....	5,870	6,115	9,299	9,868	12,346	11,422	11,086	13,088	10,906	11,840	9,412	8,462	119,714	9,976
1938.....	515,000	359,000	1-family.....	3,567	4,676	6,600	6,543	8,326	7,440	7,497	7,251	6,685	7,018	7,015	6,132	78,750	6,563
1939.....	32,300	23,230	2-family.....	1,163	1,464	1,964	2,804	889	1,056	1,139	793	1,105	1,121	1,165	1,084	15,747	1,312
January.....	30,700	21,648	Multifamily.....	1,927	4,458	3,979	4,853	1,427	1,901	2,451	2,517	2,353	1,521	1,425	1,427	30,237	2,520
February.....	42,900	30,143	Publicly financed.....	4,596	14,472	2,982	7,914	13,728	10,636	3,798	3,578	9,167	10,913	5,810	8,352	95,946	7,996
March.....	42,900	28,605	1944														
April.....	53,300	38,202	Total nonfarm.....	17,300	13,500	18,100	14,300	16,500	17,500	14,500	12,800	11,300	11,100	11,600	10,800	169,300	14,108
May.....	45,900	31,788	Urban, total.....	11,016	9,050	12,359	9,586	10,923	11,558	9,830	8,768	7,758	7,469	8,460	8,022	114,799	9,567
June.....	44,200	29,835	Privately financed, total.....	8,222	7,860	9,020	8,528	9,743	9,973	8,114	7,273	6,228	6,884	6,362	4,966	93,173	7,764
July.....	51,200	35,495	1-family.....	6,257	6,161	6,922	6,359	6,981	7,554	6,537	5,443	4,948	5,288	4,860	3,950	71,278	5,940
August.....	42,400	28,244	2-family.....	977	409	1,165	1,003	956	1,393	860	655	575	735	612	568	9,908	826
September.....	42,000	28,638	Multifamily.....	988	1,290	935	1,166	1,806	1,026	717	1,175	705	861	870	448	11,987	999
October.....	45,100	32,294	Publicly financed.....	2,794	1,190	3,339	1,058	1,180	1,585	1,716	1,495	1,530	585	2,098	3,056	21,626	1,802
November.....	41,200	30,828															
December.....	42,900	29,900															
Monthly avg.....	42,900	29,900															

¹ Compiled by the U. S. Department of Labor, Bureau of Labor Statistics, except estimates for 1920-29 which are from the National Bureau of Economic Research. The estimates are based on building permits issued for privately financed dwelling units and notifications of contract awards supplied by the awarding agencies for publicly financed units. Normally they are considered to represent the estimated number of new family dwelling units upon which construction work was started. In recent months critical shortages of building materials and limiting orders have caused considerable delays in the start of construction or, in some cases, abandonment of the work. The data since the beginning of 1945 should, therefore, be considered as number of new dwelling units for which permits were issued or contracts awarded. Family units gained by alterations and conversions, trailer units, and dormitory accommodations are not included. The urban estimates beginning 1930 cover urban areas as defined in the 1940 census, including all incorporated places with a 1940 population of 2,500 or more plus a small number of unincorporated civil divisions classified as urban by special rule; earlier urban data include places of this size as defined in the 1930 census. The total for all nonfarm areas includes the data for urban areas and estimates of all other new family dwelling units, except those on farms, which are not shown separately.

The basic data on building permits for 1920 and earlier years included only the larger cities; the coverage has been steadily expanded and reports now include over 2,400 cities, accounting for 85-90 percent of the total urban population, and 1,000 rural incorporated places; since 1939 a small number of counties have reported building permits for unincorporated areas. Supplemental data were made available for January 1940 to August 1942 by the Defense Housing Agency and the Works Progress Administration.

The classification of urban units by type of dwelling shown in the Survey prior to the May 1946 issue includes both privately financed and publicly financed construction. The latter has not been reported by type of dwelling since April 1943 but has been predominantly 1-family since that time and was included in the 1-family classification as shown in the monthly Survey through the April 1946 issue. Since the middle of 1942 most of the public housing has been temporary.

Monthly Business Statistics

The data here are a continuation of the statistics published in the 1942 Supplement to the SURVEY OF CURRENT BUSINESS. That volume contains monthly data for the years 1938 to 1941, and monthly averages for earlier years back to 1913 insofar as available; it also provides a description of each series and references to sources of monthly figures prior to 1938. Series added or revised since publication of the 1942 Supplement are indicated by an asterisk (*) and a dagger (†), respectively, the accompanying footnote indicating where historical data and a descriptive note may be found. The terms "unadjusted" and "adjusted" used to designate index numbers refer to adjustment of monthly figures for seasonal variation.

Data subsequent to September for selected series will be found in the Weekly Supplement to the Survey.

Unless otherwise stated, statistics through 1941 and descriptive notes may be found in the 1942 Supplement to the Survey	1946	1945				1944							
	September	September	October	November	December	January	February	March	April	May	June	July	August
BUSINESS INDEXES													
INCOME PAYMENTS †													
Indexes, adjusted:													
Total income payments..... 1935-39=100..	246.4	229.0	231.4	235.7	234.1	233.5	231.7	234.7	236.4	239.7	240.9	250.6	* 252.1
Salaries and wages..... do.....	253.7	243.4	239.5	238.5	236.1	231.1	227.8	235.1	239.0	240.6	244.1	249.9	* 254.1
Total nonagricultural income..... do.....	242.4	226.7	229.5	232.2	230.5	229.3	226.1	230.4	232.6	233.8	235.6	240.0	* 243.2
Total..... mil. of dol.	14,263	13,424	13,531	13,075	14,272	13,047	12,068	13,199	12,960	12,768	14,478	13,979	* 13,481
Salaries and wages:													
Total..... do.....	9,106	8,708	8,674	8,543	8,525	8,179	8,041	8,360	8,541	8,629	8,787	8,845	* 8,905
Commodity-producing industries..... do.....	3,409	3,106	3,048	3,044	3,046	2,938	2,917	3,222	3,318	3,425	3,641	3,701	* 3,878
Distributive industries..... do.....	2,280	1,890	1,928	1,966	2,073	2,018	2,021	2,075	2,168	2,228	2,176	2,216	* 2,255
Service industries..... do.....	1,547	1,296	1,316	1,363	1,391	1,396	1,431	1,476	1,495	1,476	1,503	1,537	* 1,546
Government..... do.....	1,370	2,416	2,382	2,170	2,015	1,827	1,672	1,587	1,560	1,500	1,467	1,391	* 1,316
Public assistance and other relief..... do.....	98	83	85	87	88	90	92	94	93	94	95	96	* 97
Dividends and interest..... do.....	1,435	1,383	870	535	2,056	1,122	525	1,386	892	558	2,238	1,113	554
Entrepreneurial income and net rents and royalties..... mil. of dol.	2,863	2,586	3,042	2,909	2,599	2,609	2,415	2,402	2,507	2,577	2,500	3,099	* 3,020
Other income payments..... do.....	761	664	860	1,001	1,004	1,047	995	957	927	910	858	826	* 815
Total nonagricultural income..... do.....	12,638	11,868	11,588	11,312	12,846	11,719	10,930	12,059	11,698	11,423	13,178	12,082	* 11,684
FARM MARKETINGS AND INCOME													
Farm marketings, volume:*													
Indexes, unadjusted:													
Total farm marketings..... 1935-39=100..	129	155	184	162	139	131	120	118	117	125	111	154	* 145
Crops..... do.....	160	181	224	171	137	135	107	97	78	99	94	150	* 156
Livestock and products..... do.....	105	135	154	155	140	129	130	134	146	145	125	168	136
Indexes, adjusted:													
Total farm marketings..... do.....	112	130	134	148	144	150	155	149	131	159	131	155	139
Crops..... do.....	121	122	128	152	143	170	162	164	119	189	150	142	* 130
Livestock and products..... do.....	106	135	139	146	144	135	150	138	140	136	117	164	146
Cash farm income, total, including Government payments*..... mil. of dol.	2,027	* 1,883	* 2,474	* 2,317	* 1,909	1,648	1,455	1,426	1,569	1,657	* 1,523	2,407	* 2,257
Income from marketings*..... do.....	2,014	* 1,867	* 2,368	* 2,277	* 1,893	1,534	1,383	1,370	1,419	1,551	* 1,469	2,271	* 2,193
Indexes of cash income from marketings:†													
Crops and livestock, combined index:													
Unadjusted..... 1935-39=100..	303	295	364	333	268	231	208	206	214	233	* 221	342	* 330
Adjusted..... do.....	264	264	261	282	252	231	205	285	276	299	286	353	* 229
Crops..... do.....	319	298	299	325	331	351	360	348	302	411	375	351	* 333
Livestock and products..... do.....	227	231	236	253	250	235	268	243	259	249	226	355	* 327
Dairy products..... do.....	288	213	206	201	201	187	194	207	223	223	220	271	* 284
Meat animals..... do.....	141	211	228	260	252	235	317	258	284	255	214	441	* 367
Poultry and eggs..... do.....	366	330	323	340	345	330	278	291	269	294	281	298	323
PRODUCTION INDEXES													
Industrial Production—Federal Reserve Index													
Unadjusted, combined index†..... 1935-39=100..	* 183	171	164	167	161	156	148	164	163	159	171	* 174	* 180
Manufactures†..... do.....	* 189	177	171	173	167	160	151	170	174	167	176	178	* 186
Durable manufactures†..... do.....	* 212	195	187	192	184	164	136	182	190	176	194	203	* 209
Iron and steel†..... do.....	184	163	146	167	164	102	43	169	159	109	154	179	183
Lumber and products†..... do.....	* 146	104	94	95	86	99	110	120	129	121	141	137	* 144
Furniture†..... do.....	* 154	115	120	123	131	135	139	142	144	142	146	144	* 152
Lumber†..... do.....	* 142	98	82	81	63	80	95	108	122	126	138	133	* 140
Machinery†..... do.....	* 257	230	232	231	232	217	188	207	225	230	241	242	* 254
Nonferrous metals and products†..... do.....	* 162	139	144	148	147	151	139	141	132	130	135	* 148	* 156
Fabricating*..... do.....	135	143	148	150	155	144	148	141	139	* 147	* 145	163	
Smelting and refining*..... do.....	* 146	150	148	148	141	140	128	123	109	109	110	* 131	* 138
Stone, clay, and glass products†..... do.....	* 210	166	167	162	159	163	174	184	187	180	191	193	* 202
Cement..... do.....	188	112	123	122	108	107	113	125	145	134	166	171	179
Clay products*..... do.....	* 155	114	122	123	128	134	138	143	144	140	147	147	* 154
Glass containers†..... do.....	247	242	237	227	242	247	251	243	228	237	* 239	* 239	261
Transportation equipment†..... do.....	* 245	273	258	252	217	220	199	209	245	* 239	* 238	* 241	* 242
Automobiles†..... do.....	* 188	165	120	137	95	107	98	114	161	* 162	* 167	* 176	* 182
Nondurable manufactures†..... do.....	170	161	158	158	154	157	162	* 162	161	* 160	* 162	* 159	* 166
Alcoholic beverages†..... do.....	199	199	214	201	188	198	211	162	164	157	174	* 187	174
Chemicals†..... do.....	235	236	232	230	231	233	233	234	237	231	231	* 232	* 233
Industrial chemicals*..... do.....	* 400	386	371	370	378	384	379	382	392	383	389	* 396	* 395
Leather and products†..... do.....	118	113	117	111	117	137	137	134	131	127	127	101	119
Leather tanning*..... do.....	110	108	113	113	113	115	136	119	114	105	104	93	100
Shoes..... do.....	123	116	116	120	109	118	138	144	142	142	142	106	132

* Preliminary. † Revised.

* New series. For a description of the indexes of the volume of farm marketings and figures for 1929-42, see pp. 23-32 of the April 1943 Survey; indexes since 1942 are from the Department of Agriculture. Data for 1913-41 for the dollar figures on cash farm income are shown on p. 28 of the May 1943 Survey; revised monthly averages beginning 1940 based on annual data are as follows (millions of dollars). Cash farm income, total including Government payments—1940, 759; 1941, 979; 1942, 1,335; 1943, 1,668; 1944, 1,753; income from marketings—1940, 695; 1941, 930; 1942, 1,276; 1943, 1,612; 1944, 1,686; the monthly figures have not as yet been adjusted to the revised totals. Data beginning 1939 for the new series under industrial production are shown on p. 18 of the December 1943 issue.

† Revised series. Data on income payments revised beginning January 1939; for figures for 1939-41, see p. 16 of the April 1944 Survey and for 1942-44, p. 20 of the May 1945 Survey. Revised data beginning 1913 for the indexes of cash income from farm marketings are shown on p. 28 of the May 1943 Survey. For revisions for the indicated series on industrial production, see table 12 on pp. 18-20 of the December 1943 issue.

Unless otherwise stated, statistics through 1941 and descriptive notes may be found in the 1942 Supplement to the Survey	1946	1945					1946						
	Sep- tember	Sep- tember	Octo- ber	Novem- ber	Decem- ber	Janu- ary	Febru- ary	March	April	May	June	July	August

BUSINESS INDEXES—Continued

PRODUCTION INDEXES—Continued														
Industrial Production—Continued														
Unadjusted—Continued.														
Manufactures—Continued.														
Nondurable manufactures—Continued.														
Manufactured food products ¹1935-39=100	160	166	153	151	149	143	145	139	139	137	137	161	164	
Dairy products ¹do	152	155	120	100	84	75	85	101	134	160	189	197	175	
Meat packing.....do	37	134	133	171	182	155	171	129	120	120	84	154	122	
Processed fruits and vegetables ¹do	292	242	165	118	108	94	92	89	101	103	125	228	255	
Paper and products ¹do	149	144	143	142	134	133	141	148	146	142	147	136	147	
Paper and pulp ¹do	143	138	139	138	131	130	137	143	141	138	142	131	142	
Petroleum and coal products ¹do	184	156	174	172	166	161	171	171	166	163	174	178	181	
Coke.....do	152	116	148	174	116	91	151	113	73	137	160	165		
Petroleum refining ¹do	128	110	117	118	114	122	129	129	126	129	115	123		
Printing and publishing ¹do	223	172	191	192	205	215	221	219	215	218	211	221		
Rubber products ¹do	165	144	141	146	143	151	159	162	161	164	165	144	162	
Textiles and products ¹do	153	138	128	133	125	138	146	147	144	149	152	127	149	
Cotton consumption.....do	236	215	215	226	228	233	234	241	245	247	240	233	233	
Rayon deliveries.....do	142	147	160	149	153	171	173	169	174	174	144	173		
Wool textile production.....do	166	169	173	157	104	142	148	152	147	164	159	145	161	
Tobacco products.....do	148	137	125	134	126	134	134	131	99	115	141	150	147	
Minerals.....do	151	139	126	143	137	146	149	145	108	124	149	153	150	
Fuels ¹do	125	114	120	112	94	114	121	125	121	126	86	128	120	
Anthracite ¹do	163	148	110	159	142	159	160	168	10	60	156	150	156	
Bituminous coal ¹do	149	138	133	141	139	144	147	138	146	149	153	154	151	
Crude petroleum.....do	123	116	80	61	60	47	44	46	62	95	126	129		
Metals.....do	178	167	162	168	163	160	152	168	165	159	170	172	177	
Adjusted, combined index.....do	184	173	168	173	169	163	154	173	176	167	176	177	183	
Manufactures.....do	211	194	186	191	185	166	138	183	100	175	193	202	208	
Durable manufactures.....do	136	98	91	96	92	108	119	125	130	129	133	129	135	
Lumber and products.....do	127	89	76	83	72	95	108	117	123	123	127	121	126	
Lumber.....do	162	139	144	148	147	151	139	141	132	130	137	148	156	
Nonferrous metals.....do	202	161	161	158	164	172	185	192	190	175	190	192	197	
Stone, clay, and glass products.....do	162	97	106	113	119	131	149	152	152	127	155	155	159	
Cement.....do	150	110	116	119	124	144	150	148	140	148	147	150	150	
Clay products ¹do	243	235	235	244	247	255	251	243	213	240	240	249	251	
Glass containers.....do	163	156	154	158	156	161	167	166	164	161	162	157	162	
Nondurable manufactures.....do	235	192	201	216	212	231	238	176	169	155	161	176	174	
Alcoholic beverages.....do	239	230	228	230	234	232	232	235	231	233	233	235	237	
Chemicals.....do	119	112	116	111	117	133	134	131	127	128	103	120		
Leather and products.....do	112	107	109	114	115	126	120	115	104	107	99	101		
Leather tanning ¹do	134	144	143	150	153	154	160	156	153	145	139	150	146	
Manufactured food products.....do	145	148	154	154	131	116	117	122	129	120	129	136	137	
Dairy products.....do	38	141	129	155	155	131	178	140	130	120	85	165	138	
Meat packing.....do	132	109	128	128	138	145	146	163	165	158	162	175	155	
Processed fruits and vegetables ¹do	150	143	143	142	134	133	140	148	146	142	146	136	147	
Paper and products.....do	144	138	139	138	132	130	136	143	141	138	142	131	142	
Paper and pulp.....do	184	156	174	172	166	161	171	166	163	174	178	181		
Petroleum and coal products.....do	128	109	115	114	112	118	123	127	126	124	129	124	129	
Petroleum refining.....do	165	144	141	146	143	151	159	162	161	164	165	144	162	
Printing and publishing.....do	157	160	167	154	112	143	156	161	154	163	153	140	155	
Textiles and products.....do	145	134	124	138	133	141	141	137	104	115	139	146	143	
Metals.....do	106	109	109	108	107	93	89	76	63	78	103	103		
Munitions Production														
Total munitions ¹1943=100	26													
Aircraft ¹do	9													
Ships (work done) ¹do	37													
Guns and fire control ¹do	23													
Ammunition ¹do	11													
Combat and motor vehicles ¹do	8													
Communication and electronic equipment ¹do	16													
Other equipment and supplies ¹do	59													
Manufacturers' Orders, Shipments, and Inventories														
New orders, index, total ¹avg. month 1939=100	228	166	180	183	182	188	186	193	203	209	214	204	212	
Durable goods industries.....do	255	121	160	171	173	176	179	203	219	224	231	229	232	
Iron and steel and their products.....do	282	119	176	181	174	165	163	221	240	231	223	252	250	
Machinery, including electrical.....do	323	111	158	188	217	215	235	240	269	297	331	295	293	
Other durable goods.....do	174	130	144	146	137	156	152	155	157	159	161	153	166	
Nondurable goods industries.....do	211	194	193	191	188	196	189	188	194	200	203	188	200	
Shipments, index, total ¹do	241	210	204	202	197	184	183	197	206	208	209	206	223	
Durable goods industries.....do	260	216	203	200	199	169	153	183	203	207	212	216	233	
Automobiles and equipment.....do	222	118	102	119	94	88	81	98	134	142	126	169	188	
Iron and steel and their products.....do	229	194	182	184	191	140	92	174	186	178	187	197	209	
Nonferrous metals and products.....do	274	157	167	192	183	172	163	167	185	186	210	206	241	
Machinery, including electrical.....do	286	272	267	250	263	199	198	202	222	233	255	240	258	
Transportation equipment (exc. autos).....do	522	796	592	529	626	572	492	504	547	554	535	497	446	
Other durable goods industries.....do	251	190	197	178	161	176	188	199	211	223	220	211	234	

¹ Revised. ² Preliminary. ³ Value of orders cancelled exceeded new orders received.

*New series. Data beginning 1939 for the new series under industrial production are shown on pp. 18 and 19 of the December 1943 Survey. Indexes of munitions production have been revised to incorporate corrections in the basic data and weights changed to unit prices in 1945 instead of 1943, as formerly; except for this change in weighting, the description of the indexes published on p. 24 of the February 1945 Survey is applicable to the revised data; revised monthly averages for 1940-45 are shown on p. 32 of the February 1946 Survey, revisions in monthly data published prior to the January 1946 Survey will be published later.

¹ Revised series. For revisions for the indicated unadjusted indexes and all seasonally adjusted indexes shown above for the industrial production series, see table 12 on pp. 18-20 of the December 1943 issue. Seasonal adjustment factors for a number of industries included in the industrial production series shown in the Survey have been fixed at 100 beginning various months from January 1939 to July 1942; data for these industries are shown only in the unadjusted series as the "adjusted" indexes are the same as the unadjusted. The indexes of new orders were revised in the November 1945 Survey and the indexes of shipments were revised in the February and March 1945 issues; data for electrical machinery and other machinery, which were shown separately in the May 1946 and earlier issues of the Survey have been combined; data for 1939-44 for all series, except the combined indexes for machinery, are shown on p. 23 of the July 1946 Survey and combined indexes for machinery are on p. 22 of the August 1946 issue.

Unless otherwise stated, statistics through 1941 and descriptive notes may be found in the 1942 Supplement to the Survey	1946	1945					1946							
	Sep-tember	Sep-tember	Octo-ber	Novem-ber	Decem-ber	Janu-ary	Febru-ary	March	April	May	June	July	August	

BUSINESS INDEXES—Continued

MANUFACTURERS' ORDERS, SHIPMENTS, AND INVENTORIES—Continued														
Shipments†—Continued.														
Nondurable goods industries—avg. month 1939=100.....	227	206	205	204	196	195	204	206	208	209	206	199	216	
Chemicals and allied products.....do.....	221	199	192	201	189	203	213	221	221	215	208	198	208	
Food and kindred products.....do.....	242	241	236	230	218	218	225	216	213	210	209	210	257	
Paper and allied products.....do.....	221	183	178	183	167	182	185	196	200	206	208	185	189	
Products of petroleum and coal.....do.....	215	183	153	165	178	161	154	167	173	181	185	193	197	
Rubber products.....do.....	200	200	260	212	292	229	242	260	282	288	293	288	282	
Textile-mill products.....do.....	209	167	167	165	166	178	187	185	197	207	208	171	179	
Other nondurable goods industries.....do.....	219	197	208	207	189	184	199	203	208	208	199	186	192	
Inventories:														
Index, total.....do.....	190	165	166	167	164	165	167	169	169	170	173	181	185	
Durable goods industries.....do.....	206	185	182	177	171	171	174	181	182	184	189	195	200	
Automobiles and equipment.....do.....	255	173	178	175	187	191	200	210	222	223	234	245	252	
Iron and steel and their products.....do.....	135	123	123	124	120	118	120	122	120	120	124	128	130	
Nonferrous metals and products*.....do.....	165	146	136	134	136	135	139	145	145	149	152	157	161	
Machinery, including electrical†.....do.....	267	235	230	230	218	223	226	236	241	245	251	256	261	
Transportation equipment (except automobiles) avg. month 1939=100.....do.....	703	819	792	687	594	579	587	615	593	615	626	642	687	
Other durable goods industries†.....do.....	142	119	119	118	118	119	120	123	124	125	128	132	136	
Nondurable goods.....do.....	176	147	152	157	158	159	161	159	159	158	158	169	173	
Chemicals and allied products.....do.....	174	160	161	162	165	165	167	166	167	165	166	170	171	
Food and kindred products.....do.....	185	158	165	177	177	170	167	161	157	153	150	180	182	
Paper and allied products.....do.....	180	145	148	151	155	157	161	163	162	160	164	171	178	
Petroleum refining.....do.....	129	109	112	114	112	111	112	114	114	116	118	120	124	
Rubber products.....do.....	177	168	167	169	174	180	186	199	196	192	195	198	198	
Textile-mill products.....do.....	169	116	121	128	130	136	141	148	153	157	156	164	168	
Other nondurable goods industries†.....do.....	191	163	169	173	173	180	182	177	174	174	176	182	185	
Estimated value of manufacturers' inventories* mil. of dol.....	18,876	16,364	16,457	16,554	16,288	16,369	16,590	16,829	16,837	16,934	17,175	18,010	18,426	

BUSINESS POPULATION

OPERATING BUSINESSES AND BUSINESS TURN-OVER* (U. S. Department of Commerce)														
Operating businesses, total, end of quarter... thousands.	3,134.1				2,234.8				2,346.7					
Contract construction.....do.	176.4				189.1				214.1					
Manufacturing.....do.	255.5				262.5				276.7					
Wholesale trade.....do.	137.4				141.8				151.8					
Retail trade.....do.	1,450.1				1,504.2				1,536.2					
Service industries.....do.	602.6				619.8				639.7					
All other.....do.	512.1				517.4				528.2					
New businesses, quarterly.....do.	106.0				137.4				151.8					
Discontinued businesses, quarterly.....do.	37.4				36.7				39.9					
Business transfers, quarterly.....do.	83.2				82.1				137.3					
INDUSTRIAL AND COMMERCIAL FAILURES (Dun and Bradstreet)														
Grand total.....number.	64	62	60	42	80	92	86	81	92	69	74	92		
Commercial service.....do.	16	3	7	5	12	13	8	5	13	3	7	12		
Construction.....do.	5	13	8	2	8	14	10	7	8	13	9	12		
*Manufacturing and mining.....do.	24	24	21	23	35	29	41	34	41	25	36	37		
Retail trade.....do.	17	14	14	10	22	27	17	25	26	24	17	26		
Wholesale trade.....do.	2	8	10	2	3	9	10	10	4	4	5	5		
Liabilities, grand total.....thous. of dol.	1,658	3,114	1,268	1,824	4,372	2,983	4,421	3,785	3,656	3,066	3,434	3,799		
Commercial service.....do.	424	344	60	372	2,279	748	902	40	60	7	413	459		
Construction.....do.	87	225	225	107	155	215	436	133	191	262	162	516		
*Manufacturing and mining.....do.	780	2,194	721	1,141	1,677	874	2,285	2,734	2,066	1,996	1,948	2,113		
Retail trade.....do.	347	209	135	125	245	258	269	249	1,323	661	835	297		
Wholesale trade.....do.	20	142	127	70	16	888	529	629	16	80	76	414		
BUSINESS INCORPORATIONS														
New incorporations (4 states).....number.	3,399	2,072	2,861	3,010	3,507	5,521	4,191	4,774	4,843	4,634	4,388	3,916	3,550	

COMMODITY PRICES

PRICES RECEIVED BY FARMERS†														
U. S. Department of Agriculture:														
Combined index†.....1909-14=100.	243	197	199	205	207	206	207	200	212	211	218	244	249	
Crops.....do.	236	191	196	203	206	207	213	215	220	215	223	240	233	
Food grain.....do.	207	167	175	178	178	179	180	185	185	198	200	215	203	
Feed grain and hay.....do.	221	157	160	161	162	164	166	171	171	183	195	244	225	
Tobacco.....do.	396	365	373	375	378	375	368	367	368	369	370	369	388	
Cotton.....do.	285	175	180	182	184	180	186	183	190	194	210	249	271	
Fruit.....do.	210	217	219	217	230	225	233	229	244	248	261	249	203	
Truck crops.....do.	154	159	181	235	223	249	275	283	282	177	185	163	162	
Oil-bearing crops.....do.	236	213	210	213	213	213	212	208	210	214	219	242	242	
Livestock and products.....do.	250	203	202	206	207	204	202	203	205	207	213	247	263	
Meat animals.....do.	249	207	202	203	204	206	214	219	225	226	230	268	294	
Dairy products.....do.	271	197	199	202	204	203	202	201	199	198	207	245	257	
Poultry and eggs.....do.	221	201	204	218	222	197	168	167	166	173	178	196	199	

* Revised. † Preliminary.

*New series. See note marked † with regard to the new series for inventories of "nonferrous metals and their products." For the estimated values of manufacturers' inventories for 1938-42, see p. 7 of the June 1942 Survey and p. S-2 of the May 1943 issue. The series on operating businesses and business turn-over have been revised beginning 1940, see pp. 21-23 of the May 1946 issue for data prior to 1945.

†Revised series. The indexes of shipments were revised in the February and March 1945 issues; data for 1939-44 are on p. 23 of July 1946 Survey. See p. 22 of the August 1946 Survey for 1938-45 data for the index of inventories for "machinery, including electrical" and 1938-42 data for "nonferrous metals and their products"; the index for "other durable goods industries" has been further revised since publication of the 1938-42 data in the August 1946 Survey; revised figures beginning September 1945 for this series and also for "other nondurable goods industries" are shown above; revisions for December 1938-August 1945 for these two series will be published later. The indexes of prices received by farmers are shown on a revised basis beginning in the March 1944 Survey; data back to 1913 will be published later. Data for October 15, 1946, are as follows: Total 273; crops, 244; food grain, 218; feed grain and hay, 222; tobacco, 410; cotton, 304; fruit, 208; truck crops, 151; oil-bearing crops, 255; livestock and products, 299; meat animals, 318; dairy, 300; poultry and eggs, 257.

Unless otherwise stated, statistics through 1941 and descriptive notes may be found in the 1942 Supplement to the Survey	1946	1945					1946							
	Sep-tember	Sep-tember	Octo-ber	Novem-ber	Decem-ber	Janu-ary	Febru-ary	March	April	May	June	July	August	
FINANCE—Continued														
PUBLIC FINANCE (FEDERAL)—Continued														
Government corporations and credit agencies†—Con.														
Assets, etc.—Continued.														
Commodities, supplies, and materials... mil. of dol	2,487				2,288			1,918			1,550			
U. S. Government securities... do.	1,756				1,683			1,789			1,767			
Other securities... do.	368				325			285			439			
Land, structures, and equipment... do.	20,816				21,017			20,784			17,438			
All other assets... do.	3,411				3,241			3,480			3,295			
Liabilities, except interagency, total... do.	6,320				6,078			6,856			6,498			
Bonds, notes, and debentures:														
Guaranteed by the United States... do.	551				555			536			325			
Other... do.	1,135				1,113			1,133			1,234			
Other liabilities... do.	4,634				4,410			5,187			4,939			
Privately owned interests... do.	465				472			479			482			
U. S. Government interests... do.	27,610				27,492			26,218			22,889			
Reconstruction Finance Corporation, loans outstanding end of month, total... mil. of dol	2,012	1,826	1,847	1,861	1,827	1,807	1,776	1,680	1,689	1,474	1,453	1,433		
Banks and trust cos., incl. receivers... do.	277	275	273	268	234	229	223	221	219	214	212	208		
Other financial institutions... do.	113	111	106	104	100	99	89	87	85	83	81	51		
Railroads, including receivers... do.	202	202	201	198	192	171	172	171	171	171	148	147		
Loans to business enterprises, except to aid in national defense... mil. of dol	40	40	144	145	145	146	175	140	143	171	168	158		
National defense... do.	746	755	682	707	694	703	689	642	656	419	429	459		
Other loans and authorizations... do.	633	443	442	440	461	459	427	420	416	416	415	410		
SECURITIES ISSUED														
Securities and Exchange Commission:†														
Estimated gross proceeds, total... mil. of dol	1,088	1,465	2,136	4,403	14,447	1,585	1,180	1,305	1,937	1,786	1,542	1,859	1,360	
By types of security:														
Bonds, notes, and debentures, total... do.	1,016	1,352	1,963	4,355	14,333	1,406	1,122	1,168	1,680	1,579	1,257	1,633	1,178	
Corporate... do.	195	695	909	104	387	74	239	280	425	637	377	447	315	
Preferred stock... do.	55	78	109	24	43	11	25	74	154	146	129	99	34	
Common stock... do.	17	34	64	24	71	68	33	63	103	61	156	126	148	
By types of issuers:														
Corporate, total... do.	267	508	1,082	152	560	253	297	417	682	844	663	672	497	
Industrial... do.	134	140	235	63	189	188	104	134	424	299	421	289	399	
Public utility... do.	113	382	572	64	216	44	33	79	140	430	182	342	41	
Rail... do.	20	274	249	0	69	7</								

* Revised. • Less than \$500,000.

⊗ Includes for certain months small amounts for nonprofit agencies not shown separately.

§ Small amounts for "other corporate," not shown separately, are included in the total net proceeds, all corporate issues, above.

† See note in the April 1946 Survey regarding revisions in the data for 1944.

† Revised series. Data for Government corporations and credit agencies have been shown on a revised basis beginning in the May 1946 Survey; data for certain items were further revised in the October issue to take account of recent changes in the classifications. The classifications are those currently used in the revised form of the Treasury Daily Statement. All asset items, except the detail under loans receivable, are on a net basis (after reserves for losses); reserves against loans are not completely segregated as to the type of loans to which they are applicable and the detail of loans by purpose is, therefore, shown before reserves; most of the reserves are held against agricultural loans. Revised data beginning with the third quarter of 1944 will be published later; earlier data are not available on a comparable basis. Revisions in the October 1946 Survey resulted from inclusion of guaranteed loans held by lending agencies in the figures for agricultural loans, foreign loans, total loans, total assets and the appropriate liability items. Guaranteed foreign loans are included in the 1945 figures published in the May and June 1946 issues of the Survey; \$569,000,000 and \$262,000,000, respectively, should be added to the March and June 1945 figures in those issues for agricultural loans, total loans, total assets, total liabilities and other liabilities to obtain figures comparable with later data shown above. June data include May figures for R. F. C. and its affiliates. The classification of Reconstruction Finance Corporation loans was revised in the November 1943 Survey (see note in that issue); the figures include payments unallocated, pending advice, at end of month. There have been unpublished revisions in the 1941-44 data for security issues compiled by the Securities and Exchange Commission as indicated from time to time in notes in the Survey; and revisions in the 1945 data as shown in the September 1946 and earlier issues; all revisions will be shown later.

Unless otherwise stated, statistics through 1941 and descriptive notes may be found in the 1942 Supplement to the Survey	1946	1945				1946							
	September	September	October	November	December	January	February	March	April	May	June	July	August
METALS AND MANUFACTURES—Continued													
MACHINERY AND APPARATUS													
Electric overhead cranes:†													
Orders, new.....thous. of dol.	1,795	2,033	1,799	1,366	1,607	1,386	1,422	1,049	1,792	1,456			
Orders, unfilled, end of month.....do.	8,274	9,597	10,690	11,365	12,185	12,772	13,396	13,546	14,677	15,132			
Shipments.....do.	461	709	675	640	757	786	781	850	1,029	994			
Foundry equipment:													
New orders, net total.....1937-39=100.	424.4	577.2	457.8	416.6	547.6	392.8	432.8	536.6	701.2	577.3	491.7	453.4	538.7
New equipment.....do.	415.4	617.2	456.8	419.4	600.8	391.1	458.7	576.7	779.8	621.7	492.8	444.8	555.5
Repairs.....do.	453.5	436.9	461.6	406.8	360.8	391.7	342.6	351.8	427.7	426.2	488.2	481.1	484.1
Heating and ventilating equipment:													
Blowers and fans, new orders.....thous. of dol.	10,338				12,262			13,423			16,591		
Oil burners:‡													
Orders, new, net.....number	80,294	80,100	50,895	58,075	32,150	82,489	138,828	78,941	127,285	159,375	92,927	87,531	99,907
Orders, unfilled, end of month.....do.	931,882	211,799	235,073	266,976	277,211	330,206	442,220	498,600	590,942	717,642	777,381	824,335	907,301
Shipments.....do.	55,713	20,123	27,621	26,172	21,915	29,494	28,814	30,681	34,943	32,675	33,188	40,577	55,999
Stocks, end of month.....do.	5,195	6,422	5,435	5,279	6,166	6,531	6,256	4,691	5,785	6,130	5,835	6,626	5,543
Mechanical stokers, sales:†													
Classes 1, 2, and 3.....do.	19,436	14,352	19,493	21,434	13,746	14,007	14,328	16,038	14,399	14,688	13,889	17,503	20,535
Number.....do.	450	428	465	400	331	245	248	275	345	303	309	329	427
Horsepower.....do.	63,055	90,088	94,777	76,520	63,380	59,382	69,070	73,717	88,485	80,586	75,274	82,700	70,827
Unit heater group, new orders*.....thous. of dol.	5,381				8,526			8,417			7,975		
Warm-air furnaces (forced air and gravity flow), shipments*.....number	71,809	34,871	40,165	41,465	33,253	37,789	39,664	47,100	43,186	47,321	49,337	48,912	61,927
Machine tools, shipments*.....thous. of dol.	25,500	27,300	31,200	26,084	23,276	30,263	26,949	27,326	28,108	26,580	28,580	22,360	26,850
Pumps and water systems, domestic, shipments:‡													
Pitcher, other hand, and windmill pumps.....units	24,082	22,995	25,470	24,050	23,600	27,563	24,093	27,231	28,157	23,587	27,741	22,663	25,003
Water systems, including pumps.....do.	58,544	32,400	38,927	36,529	33,718	46,094	37,528	44,870	44,887	45,150	45,349	54,434	59,874
Pumps, steam, power, centrifugal, and rotary:													
Orders, new.....thous. of dol.	3,223	2,171	2,975	2,482	1,925	2,836	2,728	2,489	2,803	2,856	2,648	4,014	3,789
ELECTRICAL EQUIPMENT													
Battery shipments (automotive replacement only), number*.....thousands	1,318	1,675	1,926	1,834	1,685	1,768	1,706	1,686	1,672	1,645	1,377	1,161	1,471
Electrical products:†													
Insulating materials, sales billed.....1936=100	164	206	202	227	217	187	224	225	242	227	252	284	
Motors and generators, new orders.....do.	256	323	254	345	213	222	429	385	404	465	432	492	
Furnaces, electric, industrial, sales:													
Unit.....kilowatts	7,092	8,104	5,856	7,626	6,343	6,589	5,786	6,105	5,357	9,099	9,379	9,889	
Value.....thous. of dol.	701	690	624	7,613	570	614	604	527	351	606	771	2,104	
Laminated fiber products, shipments.....do.	3,761	2,005	2,659	2,556	3,144	2,694	2,759	2,738	3,060	2,878	3,268	3,507	
Motors (1-200 hp.):													
Polyphase induction, billings.....do.	4,462	5,417	5,633	6,143	3,365	3,243	5,924	4,726	5,281	5,873	6,154	7,519	
Polyphase induction, new orders.....do.	6,624	10,691	7,260	10,813	5,818	6,530	12,767	10,222	10,809	13,095	13,377	15,445	
Direct current, billings.....do.	1,695	1,678	1,720	1,358	565	456	868	1,000	1,847	973	987	1,234	
Direct current, new orders.....do.	2,663	1,355	1,352	2,067	779	894	1,840	1,414	1,544	1,735	1,589	2,067	
Rigid steel conduit and fittings, shipments† short tons	8,826	11,383	12,732	12,900	14,109	10,887	6,590	12,940	16,103	16,129	15,705	21,471	
Vulcanized fiber:													
Consumption of fiber paper.....thous. of lb.	4,125	3,017	2,490	3,152	4,093	4,359	4,222	4,474	3,389	3,214	3,247	3,183	3,790
Shipments.....thous. of dol.	1,330	746	825	875	921	1,265	1,104	1,211	1,138	1,038	824	1,056	1,288

PAPER AND PRINTING

PULPWOOD AND WASTE PAPER													
Pulpwood:*													
Consumption.....thous. of cords (128 cu. ft.)	1,505	1,339	1,465	1,401	1,314	1,294	1,286	1,511	1,512	1,516	1,514	1,423	1,558
Receipts, total.....do.	1,820	1,502	1,535	1,225	1,070	1,354	1,511	1,716	1,433	1,331	1,604	1,723	1,920
Stocks, end of month.....do.	3,953		3,017	2,877	2,627	2,687	2,913	3,117	3,038	2,853	2,942	3,241	3,639
Waste paper:*													
Consumption.....short tons	608,052	540,190	602,143	568,048	500,546	590,097	555,229	616,542	606,662	620,830	578,075	558,257	635,827
Receipts.....do.	604,725	533,384	620,472	566,858	496,036	589,511	545,602	637,199	653,188	639,991	606,548	596,609	635,567
Stocks.....do.	456,585	314,644	330,579	330,919	326,689	326,238	316,488	337,518	382,992	401,667	426,750	464,831	460,946
WOOD PULP													
Exports, all grades, total.....short tons	1,399	3,711	3,461	1,095	2,906	1,058	3,198	1,359	5,092	6,057	4,780		
Imports, all grades, total.....do.	166,839	257,561	230,024	271,856	232,963	142,069	109,769	118,276	123,985	150,216	212,697	147,417	
Bleached sulphate.....do.	8,112	18,455	6,846	7,817	5,780	5,213	5,322	4,783	3,996	10,584	9,757	3,263	
Unbleached sulphate.....do.	45,352	62,600	55,922	100,745	88,447	31,741	11,435	10,505	20,352	26,482	46,109	33,864	
Bleached sulphite.....do.	27,980	56,880	38,609	36,779	37,299	38,672	36,194	42,638	39,406	37,757	37,439	33,988	
Unbleached sulphite.....do.	66,685	92,659	99,529	99,480	78,483	45,242	37,715	36,085	37,158	49,818	78,176	49,574	
Soda.....do.	1,719	2,012	2,170	1,740	1,943	1,699	1,990	1,717	1,879	1,928	1,249	1,529	
Groundwood.....do.	16,991	24,955	26,948	25,295	21,011	19,502	17,113	22,548	21,194	23,647	21,967	25,199	

* Revised.

† Revisions in unfilled orders for April-July 1942 are available on request; data cover 9 companies since September 1944; earlier data back to March 1943 covered 8 companies.

‡ Data are based on reports of 124 manufacturers accounting for practically the entire production of oil burners; in prewar years the reporting concerns accounted for around 90 percent of the industry.

§ Data cover almost the entire industry; in prewar years the reporting concerns represented over 95 percent of the total.

|| Includes unit heaters, unit ventilators, and heat transfer coils; the designation has, therefore, been corrected from "unit heaters" to "unit heater group" to avoid misinterpretation.

¶ It is believed that data shown currently and also earlier data for these products are substantially complete.

* Data continue series published in the 1942 Supplement but suspended during the war period; data for October 1941-February 1945 will be published later.

† New series. The series on automotive replacement battery shipments are estimated industry totals compiled by Dun and Bradstreet; data beginning 1937 are available on request. For 1940-41 and early 1942 data on machine tool shipments, see p. S-30 of the November 1942 Survey; data beginning August 1945 are estimated industry totals compiled by the National Machine Tool Builders Association; earlier data were compiled by the War Production Board. The new series on shipments of warm-air furnaces is compiled by the Bureau of the Census from reports by manufacturers accounting for almost the entire production; data beginning January 1944 will be published later. Data through August 1945 for the pulpwood series and for receipts and stocks of waste paper were compiled by the War Production Board; data beginning October 1945 for all series and earlier data for waste paper consumption are compiled by the Bureau of the Census (waste paper consumption through September 1945 were compiled from reports to the War Production Board; September data for all series were estimated by that agency from partial reports to the War Production Board. Data cover all known producers of pulp, paper, and paper board; a small proportion of the data is estimated).

† Revised series. The index for motors and generators includes adjustments for cancellations reported through December 1945; data published for this index prior to the July 1946 Survey and for the index for insulating materials prior to the April 1945 Survey, have been revised (revised April 1945 figure for the index of sales of insulating materials, 378); all revisions are available on request. Data for rigid steel conduit and fittings have been revised to cover domestic sales only (some manufacturers formerly included export sales); revisions through April 1945 will be published later.

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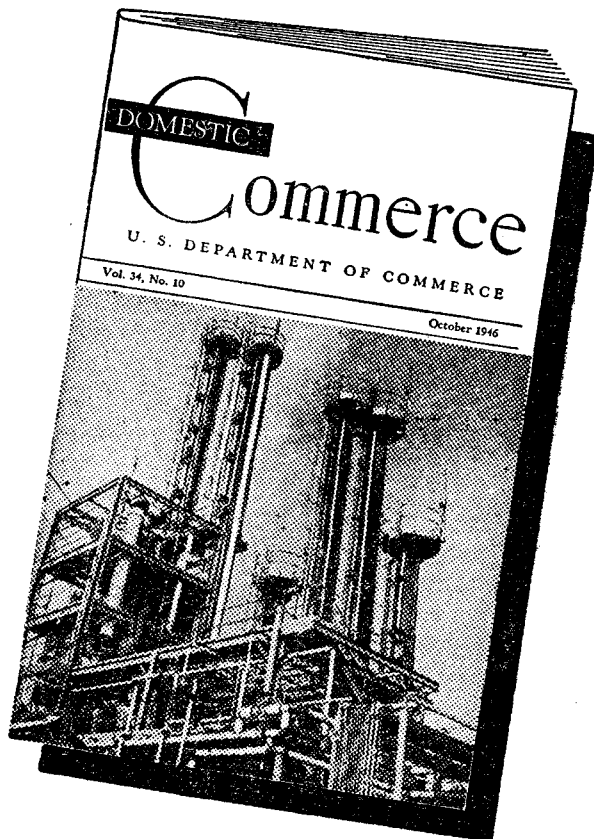
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