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**FINANCE • INDUSTRY • AGRICULTURE • TRADE**

FOURTH FEDERAL RESERVE DISTRICT

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Federal Reserve Bank of Cleveland

Cleveland 1, Ohio

## Industrial Retrospect

THE most significant event of 1950 on the industrial scene was the outbreak of hostilities in southern Korea in late June and the subsequent launching of a long-term multi-billion dollar defense and economic expansion program. The outlook for the foreseeable future appears to be that of a continuous struggle to raise production in an attempt to meet military and strategic stockpiling demands together with as much of normal civilian requirements as possible. Inextricably tied to the production problem is the acute and growing problem of restraining inflationary pressures that are being generated as more and more materials are diverted from civilian consumption channels while incomes continue to expand.

The year began on a strong note of recovery as industry bounced back from the mild recession of 1949 and the labor-management conflicts of October and November. The Federal Reserve Board index of production continued to expand in the second quarter and averaged 195 (1935-39 equals 100) with June establishing a new peacetime high of 199. Physical output of goods in that quarter was 12 percent larger than in the comparable 1949 period.

The expansionary forces in the first half of the year came from several sectors of the economy. Businesses were trying to rebuild inventories that had been allowed to run off at a too rapid rate in the preceding months and were then found to be below efficient working levels. The unseasonably warm winter had permitted an unusually large amount of construction work to continue and this, combined with the revised and very favorable terms of government home mortgage insurance guarantees, served to push construction activity (particularly residential)

to unprecedented levels. The demand for all kinds of durable goods and automobiles from consumers, and from distributors who were trying to rebuild inventories, was also an important force. Not to be forgotten as a stimulating factor was the distribution in this period of nearly \$3 billion in National Service Life Insurance refunds to veterans, much of which was used to buy or finance the purchase of durable goods.

The outbreak of war found the industrial machine already functioning close to capacity and only a limited supply of unemployed labor. The ensuing wave of scare and anticipatory buying pushed manufacturers' order backlogs to such high levels that at this time continued high production well into the future seems guaranteed. The Federal Reserve index of production rose about five percent in the third quarter and the preliminary November estimate was for a figure of 215 or some 24 percent over the strike depressed year-ago level.

The year's rise in production has been accompanied by a substantial gain in employment. Adjusted nonagricultural employment rose from 42.5 million persons in January to 45.8 million in October. The increase in manufacturing employment was particularly marked, rising from 14 million in January to nearly 16 million in October. The report from over the District is one of tight labor markets with inadequate supply of skilled labor, particularly in trades related to metal working and production and all the multitude of machinery industries.

The impact of the current boom upon prices at all levels is also noteworthy. Wholesale prices began to advance in February and by June had risen some 4 percent from the first of the year. Prices rose

sharply in succeeding weeks to reach a level in mid-November fractionally above the peak of 1948 and 9 percent above June. November wholesale prices were 13 percent higher than a year ago. Consumer prices, exhibiting their customary more sluggish action, rose only 2 percent in the first six months and then another 2 percent by September 15. The trend in the cost of living is definitely toward higher levels.

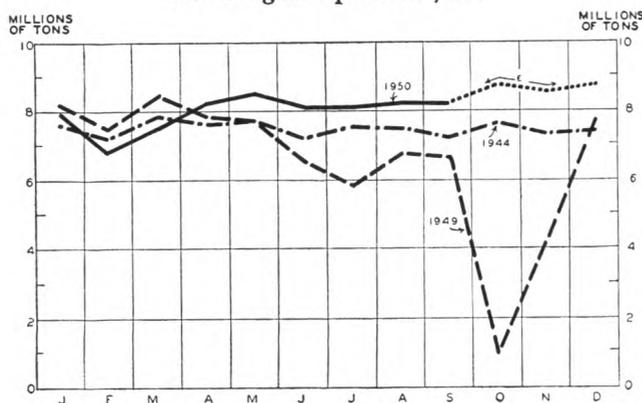
The Board of Governors of the Federal Reserve System and the Reserve Banks have embarked upon a program to place curbs on the expansion of credit and so to reduce inflationary pressures in the economy. Principal measures to date have been advances in the discount rate, open market operations leading to a rise in interest rates, controls upon consumer instalment credit, and regulation of credit for construction or purchase of new homes. It is too early to judge the effectiveness of these measures.

**Steel** Steel mills in the United States this year, barring a major work stoppage, will pour the greatest tonnage of steel for ingots and castings ever recorded in this country or in any other country.

During the first 10 months of 1950 steel ingot production amounted to 80.3 million tons. From April through October, the industry averaged 8.3 million tons of steel a month with October output setting a new all-time record of 8.7 million tons. Continuance of the October rate of production of 102 percent of capacity for the balance of the year would yield a 12-month total of about 97.5 million tons. Such a figure would exceed last year's output by nearly 19.5 million tons and top the former record established under war conditions in 1944 by nearly 9 million tons.

Part of this amazing record of output is due to

**STEEL PRODUCTION**  
1950 as against previous years



... steel mills this year will pour an all-time record tonnage of ingots. Previous record was established in 1944 under all-out war production conditions.

E Estimated.

Source: American Iron and Steel Institute.

the expansion in plant capacity that has taken place during the past two years. As reported by the American Iron and Steel Institute, steel ingot capacity on January 1, 1949 was 96.1 million tons. By January 1, 1950, this had been raised to 99.4 million tons. At mid-year, capacity had expanded to 100.6 million tons. Goaded by the continuing high level of consumer demand and the insistence of the Government, plus the swelling needs for rearmament, the industry is currently planning to increase ingot capacity by about another 10 million tons by the end of 1952. In the light of present circumstances, this planned two-year increase probably represents the minimum rather than the maximum that will ultimately be achieved. Washington defense planners are now reported to believe that a capacity of 125-130 million tons a year is necessary to achieve national security goals.

Accelerated expansion of steel producing capacity at this time, however, has the disadvantage of reducing the amount of steel available for current consumption. On a rough basis, it takes about one ton of steel to produce one ton of capacity. This takes into consideration not only the building of more open hearth furnaces and rolling mills but augmenting the whole supply line of blast furnaces, coke ovens, ore ships and cars, material handling and storage equipment, and coal and iron mine expansion.

The pressure for steel by all classes of consumers has been intense all year and mills have been unable to meet the demand. Part of the shortage early this year was due to the coal and steel strikes that prevailed in the fourth quarter of 1949 which cost producers at least 10 million tons of ingots. Continuation of the coal strike into January and February lost another estimated two million tons of steel. These losses of steel combined with unprecedented consumer demand for all kinds of durable goods and housing resulted in the revival of the familiar postwar "conversion deal" by which customers purchased ingots and had them processed wherever rolling capacity was available. Such was the situation last June when the Korean war broke out.

Since that date, the supply situation has become even tighter as civilian industries tried vainly to build inventories and to increase production in anticipation of larger takings of steel for defense and essential purposes in the months ahead. Steel inventories are reported by manufacturers to be very low and steel warehouses have been virtually stripped of inventories as they have tried to meet customer demand. Sheet and strip as well as galvanized and tubular goods are particularly hard to obtain.

Shipments of steel for ordnance and other direct military requirements have been only nominal to date. In September, for example, finished steel shipments as reported by the American Iron and Steel Institute totaled 6.1 million tons. Of this total slightly

less than 33,000 tons were for ordnance and other military purposes, or only 0.6 of 1 percent.

Military taking of steel will be sharply accelerated. It is estimated that total fourth quarter procurement will amount to about 750,000 tons and advance to some 800,000 tons for the first quarter of 1951. By the third quarter of the year, military requirements may amount to as much as 15 percent of steel production.

In addition to these military needs, steel is also being earmarked by the National Production Authority for other essential purposes. A railroad freight car building program has been approved and beginning in January the steel industry will be required to deliver 310,000 tons of steel a month during the first quarter. It is calculated that this will provide enough material to build 10,000 new cars a month and also to provide for maintenance and repair of old equipment.

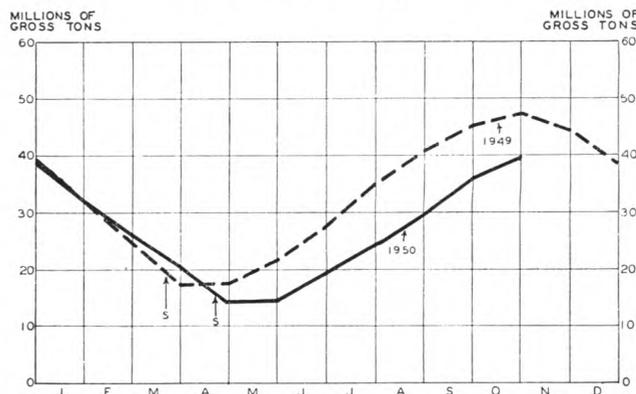
After steel mills have taken care of Defense Order requirements under scheduled programs, they must provide steel warehouses with their customary share of the remaining output, or about 17.5 percent. Other essential civilian programs are reported to be under consideration, such as for the oil and gas industry, shipbuilding and barge construction, agriculture, and steel expansion programs. Many of these programs (military, freight cars, shipbuilding, etc.) will require substantially larger tonnages of plate which can be obtained only by reducing current output of sheet and strip. The initial impact of the defense program in 1951 is thus likely to fall heavily upon the major sheet and strip consuming industries such as automobile and consumer durable appliances.

**Ore Supply** In view of the need for continued high steel production, the matter of sufficient iron ore supply for the mills this winter and late spring is of the utmost importance. Shipments of Lake Superior iron ore were cut off prematurely in October 1949 by the steel strike and only 69.5 million tons were brought down as compared with nearly 83 million tons in the previous season. Unseasonably cold weather this spring delayed the opening of navigation by about a month and a half so that iron ore stocks at the mills and on Lake Erie docks on May 1 amounted to only 14 million tons.

To November 1, shipments of Lake Superior iron ore amounted to 70.3 million tons or only slightly more than a year ago. Iron ore stocks on that date amounted to only 39.7 million tons, the lowest for the period since 1939. Inability to build up stocks was due not only to the low level of initial stocks but also to the short shipping season and the exceedingly high rate of ore consumption. The trend of stocks for this year as compared with a year ago is shown in an accompanying chart.

It was planned in November to continue lake

### STOCKS OF LAKE SUPERIOR IRON ORE AT FURNACES AND ON LAKE ERIE DOCKS (first of month figures)



... ore stocks on October 1 were the lowest for the date since 1936 as shippers fought the handicaps of low initial stocks, a short season, and high consumption.

S Start of Lake shipping season.

Source: Lake Superior Iron Ore Association.

shipments as long as the weather permitted, which might be through the first week of December. In this event, total shipments might amount to as much as 80 million tons. In addition to this amount, about three million tons will have been shipped by all-rail routes as mills resorted to this expensive practice to add to stockpiles. Since iron ore consumption will be about 7 million tons a month, stock piles on next April 1 would be little more than 15 million tons, a very low figure for that season and one which will require prompt opening of the lakes if mills are to continue capacity operation.

Continued high steel production and the long-term nature of the defense program has stimulated Great Lakes transportation, steel, and ore companies to announce plans for 10 new giant bulk iron ore or limestone freighters. Some of these new ships are already under construction but none will be completed in time for the 1951 navigation season. In the past 22 years only 22 new ore carriers have been built on the lakes and 16 of these were for the U. S. Maritime fleet in the early part of World War II. The new vessels by 1952 should go a long way to reduce the strain on the present fleet of 265 ships.

**Iron** Pig iron production through the first three quarters of the year totaled 48.5 million tons and exceeded the same 1949 period by 2.8 million tons. For the year to date, operations have averaged nearly 91 percent of capacity. If the third quarter rate is maintained by blast furnaces to the end of the year, annual output will be more than 65 million tons and will top the 1944 record by about 3 million tons.

Gray iron foundry operations climbed steadily through the year from the recession that visited the

industry in 1949. Shipments crossed the million-ton mark in May for the first time since March 1949. Shipments for the year through September totaled 9.3 million tons or 1.1 million tons above the comparable year-ago figure. September shipments were 1.2 million tons and continuation of this rate through December would bring the year's production to a figure very close to the 1948 record of 12.8 million tons.

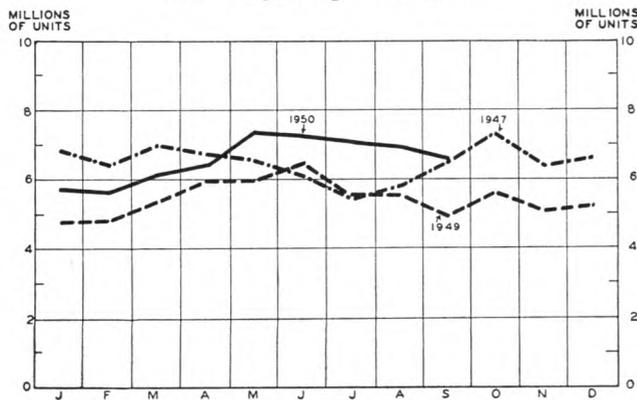
Every type of gray iron casting has shared in the upsurge of business including molds for steel ingots, railroad car wheels, pressure and soil pipe, and the vast range of miscellaneous products. Order backlogs are 83 percent higher than a year ago and are particularly heavy for pressure and soil pipe.

**Rubber** The rubber industry was the first industry in the country to have controls placed upon it as a direct result of the new defense program. On August 25 the Department of Commerce imposed a limitation on new rubber consumption during the last four months of 1950. Manufacturers were permitted in this period to use one-third of the amount they used during the 12 months ended June 30, 1950. Supplies needed to fill defense orders could be used above this basic quota.

Strict observance of this order would have reduced monthly consumption for nondefense purposes to 90,000 tons as compared with the May-June-July average of nearly 109,000 tons. So many exceptions were made to the order to relieve hardship cases that actual new rubber consumption in September was virtually unchanged at 109,000 tons and in October rose to a new monthly record of 117,000 tons.

On October 24 additional steps were taken to reduce rubber consumption effectively and to free larger quantities for the national strategic stockpile.

#### PASSENGER CAR TIRE PRODUCTION 1950 as against previous years



... tire production this year promises to exceed the previous record output of 1947 by a small margin. Even so, shipments (not shown in the chart) have been still larger and inventories are at a low level.

Source: The Rubber Manufacturers' Association.

Manufacturers were ordered to reduce new rubber consumption in November and December to 84 percent of their base period. Natural rubber consumption—as distinguished from synthetic rubber—may be only 75 percent in November and 63 percent in December of the base period. The purpose is to force a higher use of synthetic rubber in this period, but manufacturers are skeptical as to whether synthetic output will increase rapidly enough to permit this increase in usage.

In recognition of the danger to the supply lines and the availability of natural rubber in the event of a general war in the Far East, action has been taken by both Government and private companies to reactivate all synthetic rubber producing plants. Total capacity of these plants is 920,000 tons a year and it is hoped that all will be in production by early 1951. Reactivation of synthetic plants, however, is proceeding more slowly than originally anticipated and attainment of scheduled goals may not be achieved. In July manufactured rubber was being produced at an annual rate of 525,000 tons.

High production rates of finished rubber products have reduced sharply the crude rubber inventories at factories. At the end of January natural rubber stocks totaled about 109,000 tons, but by September 1 these had been drawn down to 87,000 tons. Synthetic rubber stocks dropped from 92,000 tons to only 62,000 tons for these same dates.

The rubber industry, at the present time, fears that the Government is attempting to increase its stockpile of natural rubber at too rapid a rate in attempting to reach its goal by next June. It is felt that if stockpiling is completed by that date, a severe contraction will occur in the demand for natural rubber and that prices will collapse and have adverse effects upon inventory valuations and world markets. In addition, the industry is advocating that the Government, as soon as possible, should begin to accumulate a stockpile of synthetic rubber to meet any possible adverse international situation.

Under the pressure of recent war developments and the unprecedented demand for new rubber by both consumers and stockpiling needs, natural rubber prices have been forced up at a rapid rate. Spot market prices in New York advanced from an average of 18.4 cents a pound in January to 30.9 cents in June and then shot up to 87.5 cents on November 9, but dropped back to 67.5 cents by November 22. This was the highest level since the Stevenson Plan pushed prices to \$1.25 a pound in the mid-1920's.

The continued pressure of advancing natural rubber prices together with rises in other raw material costs and labor rates has pushed passenger car tire prices ever higher. The price of the popular 6.00-15 size casing has been advanced five times this year and at the end of October was listed at \$20.10. A year ago this same tire was selling at \$14.75.

# TITANIUM... A NEW WORKHORSE?

by CLYDE WILLIAMS, Director, Battelle Memorial Institute



It seems to be only a question of time until titanium will attain the position of a major structural metal. It deserves close attention as an interesting example of the way American business can adapt itself to unusual situations. The emergence of titanium has brought with it some unique industrial combinations and planning.

Titanium's special qualities fit it well for use in an age of supersonic aircraft, rockets, and gas turbines.

Large-scale production at comparatively low-cost is no more than a few years away.

Titanium has been a laboratory curiosity for about half a century. Within the past 15 years, however, intensive research, much of it at Battelle, has brought it out of seclusion by finding ways to prepare ductile metal in spite of titanium's tremendous affinity for oxygen.

Titanium is light, strong, and corrosion-resistant. It can be easily welded, forged, hot-worked, and extruded. Its electrical resistivity is high. It can be readily surface-hardened, and it will alloy to some extent, with every known metal, which gives it a wide range of applications.

On the debit side, titanium will demand wholly new casting techniques, is not easily machined, and is expensive to produce with present methods.

The sheet metal today costs \$20 a pound, largely because production is too low to achieve the economies of large-scale operation. It seems reasonable, however, to expect that current research efforts on new techniques for producing and fabricating titanium may bring the price down to \$1 per pound. At that price, titanium would have a possible market of some 50,000 tons a year—a figure that would be tremendously increased if aircraft production should be stepped up appreciably. It promises to be a serious competitor of tantalum, silver, nickel, and stainless steel for some applications, of aluminum for others, and might even crowd out such diverse materials as glass and plastics for some special uses.

The economics of titanium production are interesting and significant. They give an insight into some of the factors that influence the development of a new material. A well-developed market for titanium oxide, a pigment, has existed for some time. The ore was obtained from enormous deposits on the ocean beaches of India. Subsequently, growing Indian nationalism and the uncertainties of international politics since the war encouraged the development of ore bodies on this continent, such as the Florida beach sands which DuPont is working and National Lead's large deposits in upstate New York. But the find that has done the most to enhance the possibilities of titanium metal is the tremendous ore body at Allard Lake, just southwest of Labrador, owned by the Quebec Iron and Titanium Corporation (which, in turn, is owned by Kennecott Copper and New Jersey Zinc).

It is all very well to say titanium is the fourth most

plentiful structural metal in the earth's crust, as it is; but that fact in itself does not guarantee a concentration of usable ore large enough to make the metal a serious contender for a place in the economy. The Allard Lake deposit is just such a concentration, and settles any doubt about the future titanium supply.

Ilmenite, the most common titanium ore, is an iron-titanium oxide mixture. It can be obtained from the Allard Lake deposit by large-scale, low-cost, open-pit mining operations; when it is processed, the iron can be removed and sold as pig, materially offsetting operating costs.

Efforts to anticipate titanium's ramified effect on the metals market have brought about industrial combinations unique in American business history. Primary producers, who have financed the difficult laboratory work up to now, are tying up with processors who have experience in handling alloy steels and who are building a hedge against the day when titanium might cut their stainless steel market. Titanium Metal Corporation has been formed to unite the producing facilities of National Lead with the alloy-handling equipment of Allegheny Ludlum Steel Corporation. The Remington Arms Company (partly owned by DuPont, a major producer) has combined its knowledge of titanium technology with the alloy steel experience of the Crucible Steel Company, by forming Rem-Cru Titanium, Incorporated.

Titanium's major application undoubtedly will be in aircraft. On an equal-strength basis it is lighter than either steel or aluminum; on a direct comparison of densities, it weighs slightly more than half as much as steel, and compares favorably in strength. In the air, a pound of weight saved is worth about \$25; the saving realized in replacing a steel compressor in a jet engine with one made of titanium would amount to about \$5,000. In the temperature range from 600 to 1100 degrees F., titanium is the best-performing light metal known. Consequently, it will find wide use in aircraft engine parts and in aircraft frames. It will be especially valuable for turbine buckets and blades and as a skin for rockets and supersonic aircraft.

As research improves technology to bring down the price, titanium will find other markets. Next to the aircraft industry, truckers are most conscious of the economies of weight saving. Every unnecessary pound in a trailer costs from 40 to 50 cents; a trailer made of titanium would weigh little more than half as much as one of steel.

Titanium is one of the most corrosion-resistant metals known. It should find ready use in the petroleum industry, in chemical plants, and on shipboard where corrosion costs millions of dollars a year.

Both the paper-making and food-processing industries are faced with bad corrosion problems and resulting high maintenance costs. Titanium might be the answer.

Large reserves and titanium's ability to alloy with a wide variety of metals give it a special strategic importance. Its versatility fits it for many metallurgical applications and permits its substitution for materials that may become scarce.

It is dangerous to try to time any research development too closely, but it will not be long before the American people will be benefitting from a new structural material, superior in some ways to anything now available. Titanium is nearly ready to take its place among the work-horse metals of our industrial civilization.

Editor's Note:— While the views expressed on this page are not necessarily those of this bank, the *Monthly Business Review* is pleased to make this space available for the discussion of significant developments in industrial research, as prepared by Clyde Williams, Director, Battelle Memorial Institute.

## Farm Income Prospects

**T**HE downward trend in farm income which started two years ago was arrested during 1950. Gross income for the current year is expected to be only slightly below that of the previous year and may be within ten percent of the record income of 1948. Due to higher production costs, however, net income may be as much as five percent below a year ago and about 25 percent short of the all-time high of three years ago.

The decline in farm income which continued into early 1950 was reversed by a sharp mid-summer advance in prices of farm products. Upon the outbreak of war in Korea prices of agricultural commodities zoomed upward as much in the subsequent four weeks as they had in the preceding six months. Further price advances followed in late summer prior to the customary October peak in farm marketings. With industrial activity at a postwar high and personal incomes at unprecedented levels it appears likely that prices of most agricultural products will recover as usual from the seasonal effect of heavy fall marketings and will rise to higher levels before 1951 crops and livestock products become available.

The current strength in the farm price situation is largely attributable to an increase in domestic demand arising from the accelerated tempo of business activity which began early this year and which was further accentuated with the Korean conflict. The defense plans now under way as a result of world tension seem likely to maintain a high rate of business activity throughout the coming year.

Adaptation of the economy to a rapidly growing defense program will undoubtedly involve some adjustments which will temporarily restrict demand

for some farm products. However, it is probable that the pressure of over-all demand upon supply of farm products will be such as to produce a more favorable price situation for producers than existed over the past year.

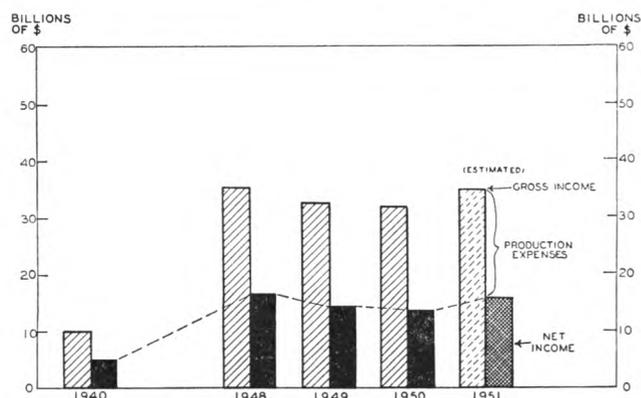
**Larger Farm Output Probable** Prices of farm commodities are currently about ten percent higher than a year ago and further advances may occur. This incentive together with the fact that planting restrictions, which were imposed before the Korean crisis, have been lifted on nearly all crops, lends support to the belief that farmers may expand production next year to the full extent that their facilities will permit.

In general, farmers are in a relatively favorable position to increase farm output. Record amounts of new equipment have been added in recent years. Much of this equipment is of the type which reduces the amount of labor required—an item of considerable importance in a period when farm labor is likely to be in limited supply. In the case of fertilizer, another essential item of high production, a record tonnage is expected to be available. It is anticipated that there will be no shortage of seeds for spring planting requirements. But there is some uncertainty with regard to whether anticipated production of insecticides and fungicides will be adequate for crop protection next summer.

In the aggregate it seems probable that the total crop output, given a year of average weather, may exceed that of the current year by more than ten percent and approach the record of two years ago.

During 1950 as against the preceding year, total

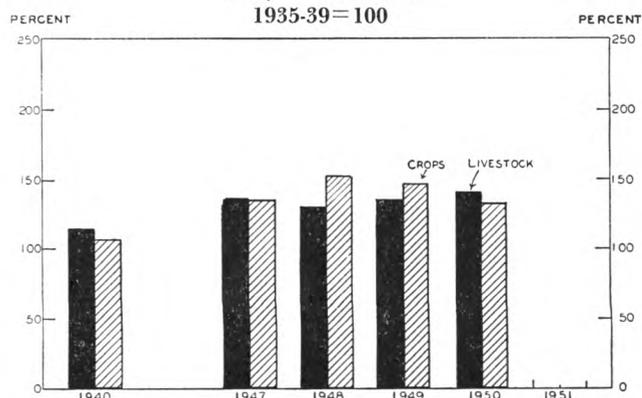
**FARM INCOME**  
U. S.



... it is anticipated that both gross and net income of farmers will exceed that of the two preceding years, because of increased marketings as well as higher prices.

Source: Bureau of Agricultural Economics.

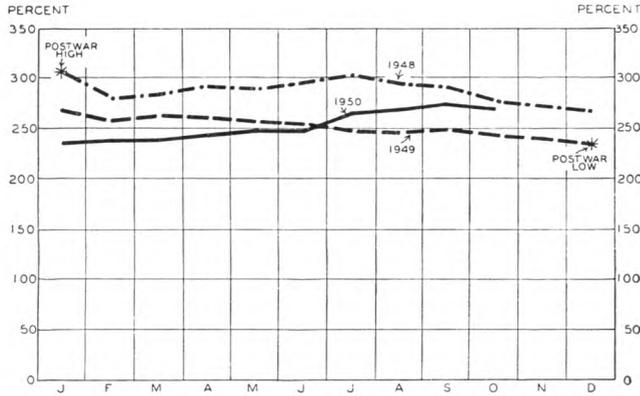
**FARM PRODUCTION**  
U. S.  
(Physical Volume)  
1935-39=100



... the continuing upward trend in livestock production (which offset a decline in crops this year) may push total farm output to a new all-time high in 1951 in terms of physical volume.

PRICES RECEIVED BY FARMERS

1910-14 = 100



... the comparatively sharp mid-summer advance brought prices received to a point about midway between the postwar high of January 1948 (307) and the postwar low (233) established a year ago.

Source: Bureau of Agricultural Economics.

farm output was bolstered by a three percent increase in the volume of livestock and livestock products marketed in contrast to a nearly ten percent decline in crops to give a total output estimated to be only two percent less than last year, as indicated on an accompanying chart.

With no increase in dairy products anticipated and a probable decline in output of poultry products, it seems doubtful that total output of livestock products will increase by more than about one percent. In that case production for sale and home consumption next year might be about equal to that of the record year 1949.

**Carry-over Stocks Lower**

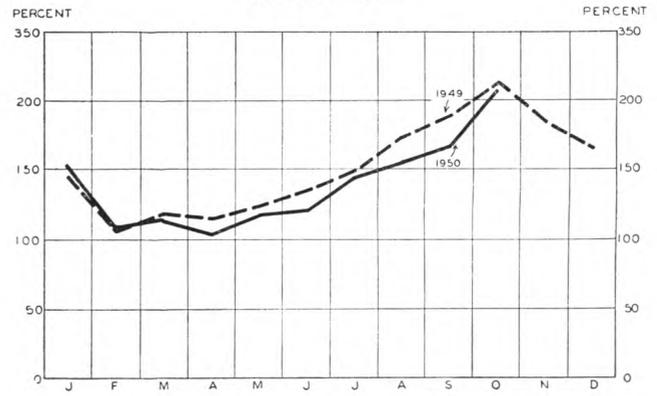
Carry-over stocks of cotton and corn, two of the major storable crops, are expected to show significant year-to-year reductions at the beginning of the next marketing year. Stocks of cotton by next August 1 may be equal to only about one-half of the 6.5 million bales carried over a year earlier. Corn stocks which were a record 859 million bushels at the beginning of the current marketing year, may be from 200-300 million bushels lower by next October 1.

Burley tobacco stocks were at an all-time high of close to one billion pounds October 1, but are expected to be reduced by about five percent a year hence due to a continued heavy demand and a somewhat smaller crop this year.

Wheat is the only one of the principal crops of which the carry-over next July 1 is expected to exceed the 417 million bushels carried over at the beginning of the current year. Thus, with the exception of wheat, carry-over stocks of the major storable crops are being steadily reduced.

PHYSICAL VOLUME OF FARM MARKETINGS

by months  
1935-39 = 100



... the physical volume of farm marketings has consistently run behind a year ago, and failed to equal last year's seasonal peak in October.

Source: Bureau of Agricultural Economics.

**Larger Domestic Demand**

It is well established that consumer expenditures for food and fiber tend to increase in periods of expanding personal income. Civilian per capita consumption of food in the current year is expected to increase at least moderately. With a larger volume of farm marketings in prospect next year, the gain may be quite pronounced when, or if, consumer durable goods become more difficult to obtain, as illustrated by the fact that consumption of food per capita reached an all-time high in 1946—a year when consumer durable goods were still in limited supply.

It has been repeatedly demonstrated that under conditions of full employment consumers tend to buy more liberally of the so-called "protective foods". This would suggest that the demand for meat, milk, eggs and fresh fruit and vegetables would tend to remain relatively strong whereas consumption of such starchy foods as potatoes and cereal products might show little if any improvement, or even a decline.

**Foreign Demand**

Dollar value of exports of farm products in the current calendar year was about 15 percent below that of a year earlier, and about one-fourth less than in the peak year of 1947 when value of exports approximated \$4 billion. Export shipments, in large part, have been financed by foreign aid programs. This aid has been reduced as agricultural production in recipient countries approached prewar levels. The conflict in Korea, however, has imposed new situations which may result in increased exports of some commodities to Far Eastern countries. This factor together with food shortages in accessible areas of Eastern Europe make it appear probable that the value of export shipments during the coming months will be approximately in line with the level of a year earlier.

**Higher Income Indicated** In view of the foregoing anticipated developments, gross farm income may increase by as much as ten percent in 1951 over the current year. This increase in income would be the combined result of higher average prices and a larger volume of production in 1951 than in the current year. The higher average prices in conjunction with a larger volume of production are expected to increase receipts from farm marketings by about ten percent above the \$27.6 billion estimated this year.

Production costs, however, are also likely to be substantially higher during the coming year, although it is improbable that prices paid for items used in production will advance as rapidly as prices received for farm products. Under such circumstances net farm income might increase by as much as 15 percent. An increment of that proportion would result in a net farm income in 1951 higher than in any other year exclusive of 1947 and 1948.

**Fourth District** With respect to farm income in the Fourth District, it is estimated that there has been a somewhat greater decline in gross farm income in this area than the two percent indicated for the country at large. Two factors are cited which may have contributed to the less favorable income of Fourth District farmers.

First, the production of several of the major crops such as corn, wheat and burley tobacco was off more from a year ago than was true for the country as a whole. Although oats are not an important cash crop, the output of this grain in the District was nearly ten percent short of a year ago whereas in the country at large the harvest was 12 percent greater than in the previous year. Second, dairy and poultry products, two of the major sources of farm income in the District, have held a less favorable price position throughout most of the year than have prices of meat animals, cotton, and wheat, each of which represent major sources of income on a nationwide basis.

Farmers in the Fourth District may participate in the anticipated increment in farm income next year to a somewhat greater extent than agriculture in the nation as a whole. This view is based on the fact that high consumer incomes tend to favor a high per capita consumption of meat, milk, eggs and fresh fruits and vegetables, all of which are important sources of farm income in this area. Thus it is conceivable that farm income in this District may expand by a somewhat greater percentage than for the country at large provided the area is not subjected to severe drought or other unusual weather hazards not common to other competitive areas of the country.

## INDUSTRIAL RETROSPECT

(CONTINUED FROM PAGE 4)

Factory passenger car tire shipments in 1950 will probably set an all-time record in the neighborhood of 83 million units as compared with the previous 1947 record of 74 million. Through the first 9 months of the year, the Rubber Manufacturers' Association reported shipments of 64.8 million units which was only 276,000 units under the entire 1949 total. Shipments in the final quarter will probably be reduced somewhat and in line with permitted rubber consumption.

Shipments of passenger car casings for original equipment rose 26 percent in the first 9 months from the comparable year-ago period while replacement tire shipments advanced nearly 30 percent and exceeded the total for the entire year of 1949. Replacement tire buying was well above the calculated need and reflected a wave of scare buying in July and August.

Passenger car tire production amounted to a record 59.3 million units through September and may reach an annual total of about 80 million. The previous record of 77.8 million was established in 1947 when the industry was catching up with war-deferred demand. Since May, shipments have consistently outrun production so that a 10.3-million unit factory inventory dropped to only 3.5 million units by the end of September, the lowest for this date since 1946.

Truck and bus casings shipments in the first 9 months rose 31 percent from the year-ago period to 11.2 million units, or about the same as for all of 1949. Original equipment sales were up 23 percent while replacement sales soared 43 percent. While the latter figure reflects to some extent the larger number of trucks on the road and more intensive use of them, it also denotes that considerable inventory buying took place this summer.

Production of truck and bus casings for the 9 months increased 23 percent to 10.4 million units and inventories were drawn down to only 926,000 casings or about one-half the year-ago level.

**Construction Activity** Total construction activity in the Fourth District in 1950 advanced to unexplored heights when measured by the value of construction contracts awarded as reported by the F. W. Dodge Corporation. In the combined Pittsburgh, Cleveland, and Cincinnati territories, total contracts for the year through October were valued at \$1,514 million or 53 percent above the comparable 1949 months as against a 44 percent gain for the entire 37 eastern states. The cumulative 10-month District total was 26 percent above the 1949 annual record total.

Peak monthly awards were made in August at

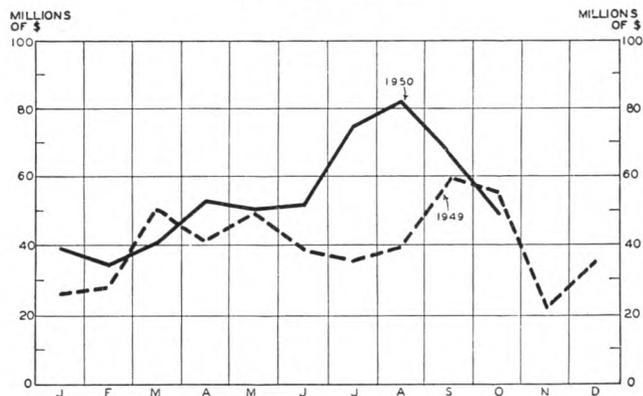
\$213 million. Awards declined successively in September and October and in the latter month were only \$140 million, a drop of 34 percent from August. A year ago, total contract awards rose contraseasonally from \$106 million to \$143 million in these same months, or a gain of 34 percent.

Every category of construction activity showed improvement over year-ago performance. In the first 10 months utility construction (both public and private) jumped to \$91 million or 67 percent above the same 1949 period. Utility contracts were unusually heavy in September and October and these two months alone accounted for more than one-third of the cumulative total. Public works advanced 32 percent in the 10 months to a total of \$234 million and this sum likewise was higher than in any entire postwar year.

District total nonresidential building contracts (which excludes residential, utility, and public works) advanced 28 percent in the first 10 months from the like months of 1949. The trend of nonresidential construction for the past two years is shown on the accompanying chart. The trend for the past two months has been sharply downward, the reverse of last year's situation, and October awards were below the same year-ago month. The mid-summer spurt and subsequent falling-off undoubtedly reflects a wave of contract awards that were made in expectation of controls over new construction that might occur as a result of war preparation.

This might be particularly true of commercial building which up through May was somewhat under year-ago performance. July, August, and September contracts jumped sharply but the 10-month cumu-

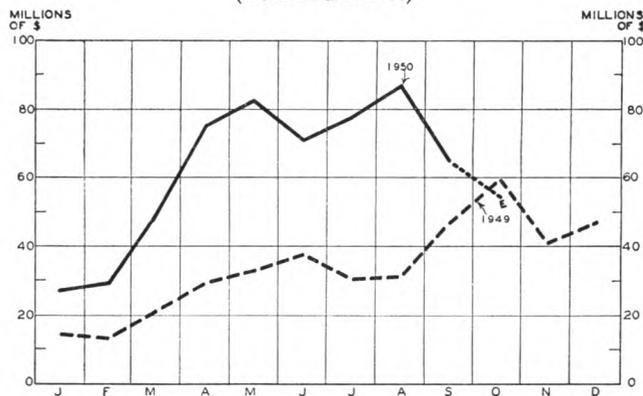
**NONRESIDENTIAL CONSTRUCTION**  
1949 as against previous year  
(Fourth District)



... the Korean outbreak caused a short-lived flurry of new contract awards, but October awards were below the year-ago month for the first time since March. The recent slump is not due to controls and could prove to be temporary.

Source: F. W. Dodge Corporation.  
(Includes: Commercial, Manufacturing, and Public Building)

**NEW RESIDENTIAL CONSTRUCTION CONTRACTS AWARDED**  
1949 as against previous year  
(Fourth District)



... the year-old residential building boom finally reached a peak in August and by October had dropped some 37 percent.

E Estimated.  
Source: F. W. Dodge Corporation.

lative total was still 1 percent below the comparable 1949 months. Commercial building as a class was the only type of construction in the District to show a loss.

Construction of manufacturing buildings also swept upward following the commencement of hostilities in June. Awards in August and September alone accounted for nearly 50 percent of the first three-quarters' total. Apparently long-deferred plans were hurriedly taken off the shelf and the go-ahead signal given for immediate expansion. Manufacturing contract awards through October amounted to \$121.5 million and were 51 percent above the 1949 period.

Public building in the District has also moved forward rapidly. Cumulative value of contracts awarded for the first ten months was \$257.5 million or 41 percent higher than the like 1949 months. War fears also apparently stimulated public authorities to speed up the letting of contracts, since third-quarter awards alone amounted to 42 percent of the total in the first nine months.

**New Residential Construction**

The residential building boom in the Fourth District (described in considerable detail in the September *Monthly Business Review*) finally and definitely turned down in September and slid off still further in October according to preliminary estimates.

Contract awards for new residential construction hit a new peak in August for the Pittsburgh, Cleveland, and Cincinnati territories of \$87 million, about \$4 million over the previous record. As in the case of other types of builders, home owners and specu-

lative builders apparently were trying to get started on their projects before controls could be imposed on their activities, as was commonly rumored would be the case. Contract awards dropped to about \$66 million in September and then to only an estimated \$55 million in October, a two-month turndown of 37 percent. Nevertheless the 10-month cumulative value of F. W. Dodge Corporation new residential contract awards of \$622 million was 96 percent higher than the same 1949 months and 53 percent above the entire 1949 record total. Construction of new homes accounted for more than 40 percent of the value of all construction activity in the District.

The recent decline in residential contracts reflects the shortage and high prices of materials and labor that were already evident before mid-summer, and to some extent the initial tightening of credit terms that was inaugurated by the Federal Housing Administration and the Veterans' Administration on contracts entered into for Government home mortgage insurance subsequent to July 19. It is exceedingly unlikely that the inauguration of Regulation X by the Board of Governors and the parallel regulations of the F.H.A. and V.A. on October 12 had any appreciable effect upon October contracts for housing. Regulation X will not apply to construction begun before noon on August 3 or to loan commitments made up to next May 1 on residences started between August 3 and October 12 or to loan commitments made prior to October 12.

The goal of these most recent regulations restricting real estate credit is to cut the number of new residences to be started next year in the U. S. to about one-third below the 1950 level, or in the vicinity of 800,000 to 850,000 units. A cutback of this proportion, if realized in the Fourth District, would still

permit the construction of a substantially larger number of units than were erected in 1949 and the number would probably be more in line with what the building industry can handle on an efficient basis. Pressure on the supply of materials and labor should also be moderated considerably.

**Motor Vehicles** With output apparently limited only by the availability of materials and time out for model changes, passenger car manufacturers again pushed production in 1950 to new record totals as shown in an accompanying chart. Estimated total production for the first 10 months was more than 5.6 million units and barring unforeseen circumstances the year's output should exceed 6.5 million cars or 27 percent above the record 1949 aggregate of 5.1 million units.

As the year progressed, production was pushed to successively higher levels. A 100-day strike at one of the major producers held down production in the first part of the year, but production in the first quarter was 1,343,000 units, in the second quarter it was 1,751,000 units, and in the third quarter it was 1,895,000 units. The greatest month on record was attained in June, when factories sold 721,000 cars to dealers.

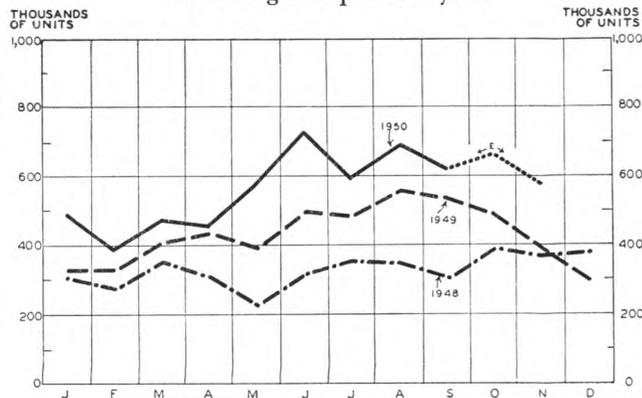
Any immediate prospect that current output could not be readily disposed of was dissipated by events on June 25 which precipitated a general rush on showrooms and again, for a short time, re-created the premium new-used car deal. This surge of demand also pushed up used car prices by about 10 percent as buyers strove to equip themselves with the latest type of car they could afford, and used car dealers sought to augment their stocks of late model used cars.

This latest bubble of demand, however, was slightly depressed by the re-imposition of Regulation W by the Board of Governors on September 18 which required on instalment sales of both new and used cars a down payment of at least one-third of the purchase price with the balance to be paid off in 21 months. These terms did little more than to correct an unhealthy credit situation (which saw terms as low as only 25 percent down payment with 36 months to pay off the balance) and did not make much of a dent in demand for cars.

Effective October 16, however, the Board of Governors reduced the repayment schedule to 15 months and retained the one-third down requirement. These stiff new terms had a dampening effect upon the demand for both new and used cars. In some cases, order backlogs of new car dealers dropped sharply and reports began to be heard of increases in new car inventories as well as the return of more normal competitive practices in regard to trade-in allowances, discounts, and choice of accessories by buyers.

The late model and new-used car market was

**AUTOMOBILE PRODUCTION (U. S.)**  
1950 as against previous year



... automobile production has continued at a record rate. Although model changes and shortages of materials will curtail fourth quarter output, it will exceed the first three months.

E Estimated.

Source: Automobile Manufacturers' Association.

reported to be especially adversely affected by the 15-month repayment schedule. However, where dealers quickly adjusted prices and promotion methods, unit sale declines were probably no more than seasonal. The change in the credit regulation came at a time when sales usually begin a seasonal decline, and immediately after a period of intense scarce buying.

Since Regulation W is supposed to relieve inflationary pressures and to reduce the demand for scarce materials that are needed for the defense program, the protests against its effects may be taken as evidence that it is really working in the intended direction. As an alternative to the rationing of cars and the direct allocation of materials to the factories, the Regulation seems to be the least burdensome control that could be devised at this time.

National Production Authority orders already issued will sharply limit civilian consumption of aluminum, zinc, and cobalt, and similar orders for other materials are in prospect. Under these circumstances motor car production (as well as output of other durable goods) will, in 1951, be cut at least 25 percent under 1950.

The demand for motor trucks was good during the first six months of the year and then surged forward under the intense buying wave that was apparent for all kinds of heavy equipment. The cumulative total for the initial 10 months indicated factory sales of about 1.1 million units or 13 percent more than in 1949, with a projected annual total near 1.3 million units.

**Machine Tools** New orders for machine tools hit their postwar bottom in the third quarter of 1949 when the National Machine Tool Builders Index averaged only 52 (1945-47 equals 100). Sales began to recover in the final quarter as general business activity picked up somewhat and manufacturers again became interested in new cost-cutting tools.

This general advance was maintained through the first half of 1950 and in the second quarter the new order index averaged 113, the highest since 1946. Unfilled orders at the end of this period amounted to nearly 5 months' shipments at the June rate as compared with only 3.5 months' one year earlier. At this point the Korean War opened a flood gate of orders and the index skyrocketed to 253 in July, 305 in August, and 281 in September, for an average of 280 for the third quarter, or nearly six times the level of the year-ago period. Unfilled orders continued to rise in October and are now nearly equal to 12 months' shipments.

The flood of orders is not an unmixed blessing and the trade reports that, to date, only a small proportion of them are for war production work. The steady erosion of the industry since late in the last

war has reduced the supply of available skilled workers so that nearly all shops are short of the necessary manpower to cope with the volume of new business. In addition, due to their low volume in recent years, machine tool companies are having great difficulty in increasing their orders for needed raw materials and equipment. The industry reports an inadequate supply of iron castings, cold rolled steel, sheet steel, and electrical equipment. Some machine tool builders are importing needed steel from Europe. The National Production Authority has not yet recognized that priorities are needed for this industry to obtain proper supplies. This lack could possibly lead to a later production bottleneck which would hamper the rise of national output generally.

**Consumer Durable Goods** The production of major household appliances rose to record heights during the first three quarters of 1950, according to an index constructed by the Research Department of this bank. The margin over 1948, the previous high year, was increased with each successive quarter and in the month of September a new all-time high was reached. The more or less steady increase in appliance production was largely attributable to the expanded output of electric ranges and refrigerators during the second quarter and to the sharp rise in the production of gas ranges during the third quarter. Television sets and radios also showed substantial second and third quarter gains, but they are not among the appliances included in the index.

The production of television sets continued to mount at the most rapid rate of any single item in the consumer durable goods field. A slight sag in output occurred in May and June in response to a brief period of relatively slow retail sales, but the influence of the outbreak of hostilities in Korea more than offset this curtailment. In response to the unprecedented demand for sets, shipments reached a record total of approximately 800,000 units in August. The final tabulation of November sales figures will undoubtedly show that this record was broken despite the effects of the color dispute, credit restrictions, and the excise tax, since November is customarily the "big" month in television production. Comparative data on production of television sets during 1949 and 1950 are scarce. However, it is estimated that a monthly shipments average of 217,000 sets was maintained during 1949. During the first ten months of 1950 the average monthly production rate was 578,000 sets. A comparison of these two figures shows an increase of 166% which is approximately in line with production information released by the Radio-Television Manufacturers Association.

In the first part of 1950, radio production began to show signs of recovery from the depressed levels

of 1949 and by the middle of the year production was more than double the year-ago figure and approximately on a par with the high 1948 output. A comparison of the average monthly shipment rate during 1949 with the average monthly production rate during the first ten months of 1950 shows an increase of 55%. The increase in production was made possible by highly successful sales in the non-television areas of the country, although even in television centers sales were reported to be higher than in 1949.

Second only to the growth in the production of television sets was the increase in shipments of household cooking ranges. During the first nine months of the year shipments were almost 70% above last year's total and substantially above the 1948 level. The favorable showing of ranges is closely tied to the rapid rate of completion of dwelling units in 1950. Historically, there has been a very close relationship between these two factors. Factory sales of electric ranges got off to a comparatively slow start in the first three months of the year, and were only 26%

#### QUARTERLY FACTORY SALES-UNIT VOLUME

Percentage changes from corresponding period of 1948

	1st Quarter	2nd Quarter	3rd Quarter	1st Three Quarters
Electric Ranges . . . .	+ 26	+139	+ 88	+ 76
Gas Ranges <sup>1</sup> . . . . .	+ 70	+ 51	+ 76	+ 64
Electric Refrigerators	+ 26	+ 66	+ 61	+ 50
Washing Machines . .	+ 63	+ 41	+ 23	+ 40
(electric and gasoline)				
Electric Ironers . . . .	+ 7	+ 50	+ 41	+ 31
Vacuum Cleaners <sup>1</sup> . .	+ 12	+ 20	+ 50	+ 26
TOTAL . . . . .	+ 47%	+ 67%	+ 64%	+ 59%

<sup>1</sup>Shipments.

Sources: American Washer and Ironer Manufacturers' Association, Vacuum Cleaner Manufacturers' Association, National Electric Manufacturers' Association, and Bureau of the Census.

#### FACTORY SALES-UNIT VOLUME

First nine months

	1950	1949	% Change
Electric Ranges . . . .	1,218,000	693,000	+ 76
Gas Ranges <sup>1</sup> . . . . .	1,936,000	1,178,000	+ 64
Electric Refrigerators	4,623,000	3,084,000	+ 50
Washing Machines . .	3,093,000	2,204,000	+ 40
(electric and gasoline)			
Electric Ironers . . . .	281,000	215,000	+ 31
Vacuum Cleaners <sup>1</sup> . .	2,644,000	2,095,000	+ 26

<sup>1</sup>Shipments. \*Eight months total shipments.

Sources: American Washer and Ironer Manufacturers' Association, Vacuum Cleaner Manufacturers' Association, National Electric Manufacturers' Association, and Bureau of the Census.

above the like 1949 period as compared with 47% for the appliance group as a whole. Second quarter sales, however, were at a record rate and topped the comparable period of 1949 by 139%. For the first nine months factory sales averaged 76% above a year ago. The pattern of gas range factory shipments was almost the opposite of electric range sales, with the greatest year-to-year margins being recorded in the first and third quarters.

Electric refrigerator manufacturers were outstanding performers in 1950. Although factory sales for the first three quarters of 1949 were the highest on record, the 1950 output was half-again as large. Factory sales of refrigerators, which had declined slowly through most of 1949, began a marked upward movement early in 1950. This movement reached its culmination in the second quarter of the year. Since that time a slight easing of sales has been in evidence largely due to the shortage of materials. Despite the downdrift, however, third-quarter refrigerator sales were 61% above the comparable period of a year ago.

Factory sales of washing machines got off to a fast start in 1950 with a highly successful first quarter. Sales dropped somewhat during the middle of the year but showed signs of improvement toward the end of the third quarter. In September 424,000 units were sold, a total which was bettered only by the all-time peak of 442,000 units sold in the same month in 1948. The year as a whole, however, shows a steady narrowing of year-to-year margins, with the third quarter only 23% above last year as compared with the 63% margin registered during the first quarter.

Factory sales of electric ironing machines showed a slow but steady upward trend during the first nine months of 1950. The gains over 1949 were not so spectacular as those of most of the other major appliances, but the nine-month total was 31% above last year. However, 1947 remains the record year.

Shipments of vacuum cleaners showed the smallest gain from the preceding year (26%) but the quarterly increases steadily mounted from 12% during the first quarter to 50% during the third quarter. In March 361,000 vacuum cleaners were shipped and that figure was exceeded only on one other occasion—in December of 1947 when a record of 373,000 units were shipped.

Prospects for the 1951 production of consumer durable goods to equal or exceed the high 1950 level are dim. Manufacturers are already reporting shortages of some materials and most of them believe that they will be unable to produce at full capacity during the coming year.