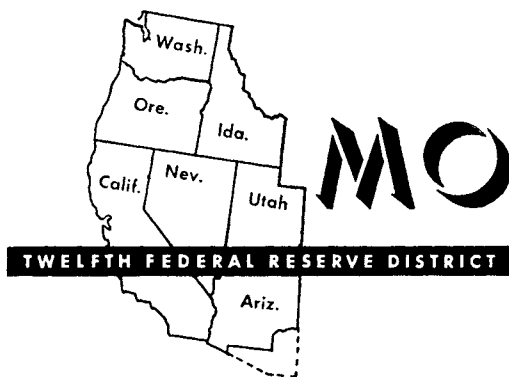




# MONTHLY REVIEW

JANUARY 1949

FEDERAL RESERVE BANK OF SAN FRANCISCO

## REVIEW OF BUSINESS CONDITIONS

**B**y the end of the year, the tempo of business activity in the Twelfth District had definitely slowed down. Although nonagricultural employment was still a little above a year earlier, the margin was narrower, and unemployment was somewhat higher. Department store sales, which, on a seasonally adjusted basis, had been lower in November than in any month since March 1947, turned upward in December. This reflected, at least in part, a return to a more normal Christmas buying pattern. Even so, the dollar volume of sales in the two months was no higher than last year. Sales in the District continued in January at about the levels of January 1948. Extensive clearance sales raised dollar totals in some cities, but adverse weather helped to hold sales down in others.

Prices have continued to soften. The Bureau of Labor Statistics index of wholesale prices in mid-January was 6 percent below the fall peak, and 3 percent below a year earlier. The consumer price index declined fractionally in December for the third consecutive month and was only 2 percent over the December 1947 level.

### *Plant layoffs and slackened industrial activity*

Many concerns are expecting a lower volume of business in 1949 than last year and business sentiment is generally cautious, but so far there is little evidence of widespread layoffs and reduced payrolls, or general curtailment of industrial activity.

Adverse weather conditions have hampered some industries recently, notably lumber and the aluminum plants in the Pacific Northwest. The current shortages of electric power in that area have caused some plant curtailments, but this is a temporary situation. District railroads have also laid off some maintenance-of-way employees.

In the lumber industry, orders have declined considerably from the high levels of last year, and seasonal shutdowns have been more general and of longer duration this winter than at any other time since the war. Severe winter weather, generally weak domestic demand, and a poor export market, create an uncertain outlook in this industry.

The construction industry is reported to have contracted rather sharply in the Pacific Northwest, where a relatively large volume of Government construction was under way during the past year. Employment in construction activity in California has held up relatively well.

The basic steel industry is operating near its physical capacity and steel is generally still hard to get. Manufacturers of stoves, ranges, water heaters and various household appliances have cut back their demand, but cold rolled sheets still command a premium. Demand for many types of steel and iron castings has eased considerably and foundries generally are operating at a reduced level.

Delay in receipt of Government contracts for aircraft and cancellation of orders previously placed has caused some layoffs in certain California aircraft plants. There has also been some retrenchment in the garment and furniture industries in Southern California. Employment in motion picture production remains considerably below the levels of 1946 and 1947.

In the San Francisco area, layoffs are reported in food processing, furniture, fabricated metals, machinery, ship repair, and building construction. These probably reflect somewhat more than a seasonal decline in demand, but none of them can be termed drastic.

### *Bank loans declining in the District and in the United States*

Twelfth District bank loans continued to rise through most of the fourth quarter of 1948. It was not until the last week in December that loans began to fall off, and they have continued to do so through January. A year ago there was a decline in bank loans at the turn of the year, but it was not nearly so large or so sustained.

The current decline has been concentrated primarily in commercial, industrial, and agricultural loans. Just before Christmas, peaks were reached in these loans as well as in total loans of the member banks that report weekly to this bank. During the next six weeks, these loans declined steadily. So did loans for purchasing and carrying securities, which had been at a high level at the end of December, as dealers in Government securities adjusted portfolios prior to Treasury financing dates. Real estate

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loans, however, continued their slow growth at about the rate which has prevailed during the last three or four months.

Twelfth District bankers were not the only bankers whose loans were declining. In the country as a whole, commercial, industrial, and agricultural loans of weekly reporting member banks started to fall off in the last week of December, and total loans began to decline in early January. Real estate loans reached a peak shortly before Christmas, and then wavered during the next several weeks, but made a net gain by late January.

#### *Is a definite seasonal pattern reappearing?*

Part of the recent declines in certain aspects of business activity may reflect the reappearance of wider seasonal fluctuations of the sort that characterized prewar years. During and immediately after the war, the pressure of urgent demand had kept many operations at full blast and eliminated these seasonal patterns to a considerable extent. Month-to-month fluctuations were largely related to availability of materials. Christmas buying began in the summer or early fall, as people feared that goods they wanted would no longer be available by Christmas. Construction activity could not escape the

effects of the weather entirely, but was kept at a much higher pace in the winter months than ordinarily. With a shortage of labor and unfilled jobs in many lines, seasonal fluctuations in employment became much less noticeable. With urgent demands pushing prices upward and profit prospects favorable, businessmen and consumers were anxious to borrow, and banks were willing to lend. Consequently, bank loans rose steadily, with much less regard for any particular time of year.

Now, however, demands are less urgent. Except in a few, but important, lines, we are producing enough goods and services to meet current demand. In fact, excessive supplies have already pushed some prices down. When output no longer presses steadily against capacity, and when almost anything produced can no longer be sold quickly and with little regard to price, wider fluctuations in accordance with seasonal factors tend to appear. The winter months have always tended to be slow ones for many types of activity. It is difficult to say, however, how much of the recent business hesitation, as reflected in specific series, should be attributed to seasonal factors, in view of the lapse of time since so-called normal seasonal patterns existed.

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### CONTROL OF AGRICULTURAL SURPLUSES

WITH a year of record crop production just completed, it may be wise for agriculture to analyze its position. Farmers have increased their capacity to produce to the highest levels in United States history and prospects are that they will produce even more in the future. During and since the war, these increased outputs have been readily absorbed—first by large military and civilian wartime demands, and then by consumers with record high incomes, and foreign relief shipments. However, with agricultural exports gradually falling off and with consumers being squeezed more and more by high prices, these large supplies may soon become troublesome. In fact, the beginnings of this situation are already evident in the recent and consistent declines in crop prices. What will happen to the market for farm products in the years ahead is one of the important problems facing American agriculture.

Certain crops, important to Twelfth District agriculture, are fast approaching a surplus situation. Following the near record wheat crop of 1948, price prospects for 1949 are dampened by a large seeded acreage of winter wheat, reduced exports, and an increase in stocks. The position of cotton is less favorable than in the past few years. Though exports may double this year, prices have declined to loan level, domestic demand for textiles has weakened, and the 1948 carryover will be increased substantially by the large 1948 crop. To further aggravate the situation, growers are expected to increase their acreages substantially this year. The record flaxseed production in 1948 and the decreasing demand for linseed oil have prompted the United States Department of Agriculture to recommend a sharp reduction in flax acreage for 1949.

And, of course, substantial surpluses of Irish potatoes have also existed for several years.

Almost from the beginning of the farm depression in 1921, widespread demands for governmental aid to farmers arose. By the early 1930's, a reorientation of American farm policy had taken place. Farm surpluses were burdensome, and farm prices had declined much more than industrial prices. To remedy this situation, the new farm policy was embodied in the "parity price" principle. It became the policy of the Government to reestablish farm prices at a level which would give agricultural commodities a purchasing power equivalent to that in the base period, 1910-14.

Several methods of gaining "parity prices" for farmers have been used since 1933. One of the current programs attempts to cushion farmers against declines in farm commodity prices which result from surpluses. In order to give this protection, the Government has participated on occasion in decisions regarding the amounts of particular crops which may be planted or marketed. With surplus conditions probable during the next few years, controls will undoubtedly be imposed on some agricultural crops. Farmers and others interested in agriculture should be well aware of which crops and areas will be affected, what form the restrictions may take, and what adjustments may be necessitated by their imposition.

#### **Controls for Basic Commodities**

At the present time, the authorization for the use of controls on the so-called basic agricultural commodities—wheat, corn, cotton, rice, tobacco, and peanuts—is con-

tained in the Agricultural Adjustment Act of 1938, as amended. The controls specified for use were "acreage allotments" and "marketing quotas." This type of surplus control, that is, control of marketings in interstate commerce, was substituted for the production-control approach of the original AAA of 1933. The original act had attempted to protect farm prices by the control of production. With the Supreme Court invalidation of this concept in the *Hoosac Mills* decision in 1936, and with widely fluctuating harvest results from 1934 to 1937, the need for a broader and more flexible program was felt.

The 1938 act, then, sought to provide for a continuous, stable flow of the major farm products into the nation's markets at prices fair to both producers and consumers. To minimize violent fluctuations in the supplies, marketings and prices of these commodities, acreage allotments and marketing quotas were authorized. These two methods, plus the provision for making commodity loans, were designed to give the stability of income needed by farmers in order to sustain production and secure an adequate level of living, and to maintain ample reserves of farm commodities for the nation's use.

Acreage allotments were set up to help stabilize agricultural production. For certain commodities, national acreage allotments are determined each year. These are designed to provide a supply of the commodity sufficient to meet the needs of normal domestic consumption and export requirements, plus reserves for emergencies and national defense. These quantities, however, must not be so excessive as to undermine income from the commodity. The allotments are distributed among the states and sometimes to the counties and individual farmers. They are designed primarily to serve as guides for production, and compliance with them is voluntary, but they are used, in some instances, as a basis for determining eligibility for parity payments or commodity loans. Plantings in excess of allotments may result in loss of eligibility for loans or price support payments.

Regulations for the marketing of the six basic commodities are contained in the marketing quota provisions. Quotas are designed to promote orderly marketing and to assure a fair share of the market to those farmers who are making an effort to balance supplies with demand. They may be used only when such surpluses exist that emergency measures are necessary to protect prices against the collapses that penalize heavy production. Before being put into effect, the marketing quotas must be approved by the producers voting in referendum. If approved, they then become compulsory and penalties are exacted on quantities marketed in excess of the individual farm quotas.

#### **The mechanics of control**

Should controls be invoked for some agricultural commodities in the near future, it is important to realize the form they may take. The mechanics of determining and allocating quotas or allotments will be significant to any state's agricultural industry and to the individual producers affected.

The dates and methods used currently for determining, invoking, and apportioning acreage allotments and marketing quotas for basic commodities are stated explicitly in the Agricultural Adjustment Act of 1938, as amended. Additional amendments were made by the Agricultural Act of 1948. Title I of this Act took effect January 1 this year, but does not deal with allotments or quotas. On January 1, 1950, Title II will go into effect and make certain changes in the time and procedure of determining allotments and quotas.<sup>1</sup> It is probable, however, that the 81st Congress will make further changes in the program. In the case of cotton, a revised method of quota allocation is presently being discussed in the Department of Agriculture and it is expected to be presented to Congress during the present session.

Of the six basic commodities for which quotas are authorized, cotton, wheat, and rice are of commercial importance in the Twelfth District. Though no quotas for these three crops will be in effect for the 1949 marketing year, we are assuming that the Agricultural Adjustment Act of 1938 as it now stands will also be applicable for the 1950 marketing year. It is the provisions of this Act, as presently amended, which are outlined below.

**Cotton.** By November 15 of each year, the Secretary of Agriculture must determine the national allotment for cotton. This is defined as the number of bales which, together with the estimated carry-over on the following August 1, will be a "normal supply."<sup>2</sup> This shall not be less than 10 million bales, and to this shall be added the production of the additional acres required to bring farm allotments up to certain minimums mentioned below. The national allotment is apportioned among the states on the basis of the average normal production in the five previous years, and these production figures are then converted to acreage allotments. The acreage allotments are then apportioned among the counties, on the basis of the acreages planted during the five previous years plus the acreages diverted under agricultural adjustment or conservation programs, adjusting for abnormal weather and trends in acreage, and allowing a percentage for farms not previously raising cotton. The total allotment to each county must not be less than 60 percent of its 1937 planted acreage plus acreage diverted out of cotton in that year under any agricultural adjustment or conservation programs. County allotments are apportioned among the individual farms by local committees, taking into consideration the records of tilled and rotated acreages of each farm. The allotment to each farm shall provide not less than 50 percent of the acreage planted in cotton in 1937, plus any "diverted" under programs in that year, except that the allotment shall not be more than 40 percent of the total acreage annually rotated or tilled on that farm.

If it is determined that the total supply<sup>3</sup> for any mar-

<sup>1</sup>The United States Department of Agriculture has not determined whether these changes will be applicable to 1950 crops since quotas must be determined during 1949. Congressional clarification on this point is being sought.

<sup>2</sup>A normal supply of cotton is defined as the yearly average quantity of cotton produced in the United States which was domestically consumed and exported during the ten marketing years immediately preceding, plus 40 percent as an allowance for a normal carry-over.

<sup>3</sup>Total supply for cotton, wheat, and rice is defined as the carry-over plus the estimated production for the year.

keting year exceeds by more than 7 percent the normal supply for such marketing year, the Secretary shall proclaim a marketing quota by November 15. It shall take effect for the next succeeding marketing year, beginning August 1, upon approval by two-thirds of the growers voting in referendum. The individual farm quotas are figured on the basis of the production of the farm's acreage allotment. Penalties of 50 percent of the rate of the loan to cooperators under the price support program are provided on the excess quantity marketed.

**Wheat.** By July 15 the Secretary must determine the national acreage allotment for the next wheat crop which, on the basis of the national average yield, will give a supply of wheat equal, with the estimated carry-over, to a normal year's domestic consumption and export<sup>1</sup> plus 30 percent thereof. This allotment must be at least 55 million acres. The allotment is apportioned to the states and thence to the counties on the basis of acreages seeded to wheat during the preceding 10 years plus acreages "diverted" under previous programs, with adjustments for trends and weather. The county allotments are apportioned among the farms by local committees on the basis of tillable acres, crop rotation practices, types of soil, and topography. Not more than 3 percent of the county allotment may be apportioned to farms which have not planted wheat during any of the three previous years.

If before May 15 the Secretary determines that the total supply at the beginning of the next marketing year, July 1, will exceed a normal year's domestic consumption and exports by more than 35 percent, he shall proclaim that a marketing quota will be in effect for the following marketing year. It shall be equal to a normal year's domestic consumption and exports plus 30 percent, less (1) the estimated carry-over at the beginning of the marketing year, and (2) the estimated amount to be used on farms as seed or feed during the marketing year. The quota must be announced in terms of total quantity and as a marketing percentage of the national acreage allotment for the current crop which the Secretary determines will, on the basis of the national average yield of wheat, produce the amount of the national marketing quota. The farm quota shall be the actual production of the acreage planted less the normal or actual production, whichever is smaller, of the acreage planted in excess of the acreage allotment. The latter is called the "farm marketing excess," and it shall not be larger than the difference between the actual and the normal production of the allotted acreage. A referendum shall be held by June 10, and if two-thirds of the producers voting are in favor of the quota, it shall go into effect. The penalty shall be 50 percent of the rate of the loan for cooperators on the quantities marketed in excess of the quota.

**Rice.** By December 31 of each year, the Secretary must determine the national acreage allotment which, on

the basis of the national average yield of the five preceding years, will give an amount equal, with the estimated carry-over, to a normal supply.<sup>1</sup> The apportionment of this allotment among the states is made on the basis of average acreages during the preceding five years plus the acreages "diverted" under previous programs with adjustments for trends in acreage. At least 97 percent must be allotted through state and local committees to persons on the basis of past production, land, labor, equipment, conservation practices, etc. The remainder may be allotted to new growers.

When the Secretary determines by December 31 that the total supply will exceed the normal supply of the current marketing year by more than 10 percent, the quota will go into effect as of the beginning of the following marketing year, August 1. The quota will be the amount of rice making a normal supply and it is apportioned to the states on the basis of the average production in the preceding five years plus the normal production of the acreages "diverted" with adjustments for trends and weather. The farm quotas are apportioned on the basis of aggregate normal yields of the acreage allotment established. If two-thirds of the producers voting in referendum approve the quotas, they shall go into effect. Penalties are defined as 50 percent of the rate of loan for cooperators on the excess quantities marketed.

### Non-basic Commodity Controls

Specific authorizations for the use of the production and marketing control methods discussed above have been made only for basic commodities. For other than basic commodities it has been felt that authority for some such method of control was implicit in the general purposes of the laws in effect up to the present time. In Title I of the Agricultural Act of 1948, which took effect on January 1, 1949, it is stated that for Steagall and other commodities "the Secretary of Agriculture shall have the authority to require compliance with production goals and marketing regulations as a condition to eligibility for price support." It should be noted that these methods of control are given only as conditions for price support, whereas the regulations as applied to basic commodities were themselves designed for the purpose of controlling surpluses.

The types of control which may be used are not described other than as "production goals" or "marketing regulations," but are left to the discretion of the Secretary. For instance, the 1949 production goals for potatoes, announced by the Secretary on November 17, 1948, included national and state figures. In determining the state goals, the average production from 1943 to 1947 was taken as a base, with deductions for overplanting and for Government purchases of surplus production. After converting to an acreage basis, the county and farm allotments were computed on the basis of the 1947 and 1948 goals with adjustments at the farm level to reflect changes

<sup>1</sup>A normal year's domestic consumption of wheat is the yearly average quantity, wherever produced, which was consumed in the United States in the 10 marketing years immediately preceding. A normal year's export is the yearly average quantity produced in the United States that was exported during the same period.

<sup>1</sup>A normal supply of rice is defined as the yearly average quantity of rice planted in the United States which was domestically consumed and exported during the five marketing years immediately preceding plus 10 percent thereof as an allowance for a normal carry-over.

in past acreages, rotation practices, and farming and marketing facilities.

The use of quotas for sugar is authorized in the Sugar Act of 1948 which specifies how and when the Secretary must determine domestic consumption requirements. Quotas are given in the Act for domestic sugar-producing areas with an apportionment to domestic beet sugar of 1,800,000 short tons, raw value.<sup>1</sup> If it appears at some later time that any domestic area will be unable to market its full quota, the quotas for the other areas will be revised by pro-rating an amount equal to the deficit among them. Proportionate shares of the quota for each farm are declared each year. When it appears that the area quota will not be realized, the proportionate shares are declared to be the amount which is actually grown and marketed. If, on the other hand, it appears that the quota may be exceeded, shares are apportioned on the basis of previous experience and ability to produce. Penalties are provided for producing and marketing quantities in excess of the quota.

### **Effects on Twelfth District Agriculture**

Quotas for sugar and production goals for potatoes for the 1949 marketing year have already been announced. No quotas will be in effect for cotton, wheat, and rice in 1949. Consequently, in considering the effects of these controls upon Twelfth District agriculture, we shall be concerned with the 1949 marketing year for potatoes and sugar and the 1950 marketing year for cotton, wheat, rice, and any non-basic commodities for which production goals are used as a condition for price support. It should be remembered that the determination of quotas for the 1950 marketing year will depend upon supply and demand conditions during 1949.

#### ***Are controls likely in 1950?***

With no marketing quota on the 1949 wheat crop and with 90 percent support, seedings for the 1949 crop are estimated at almost 80 million acres. The United States Department of Agriculture reports that on the basis of expected domestic demand, exports, and carry-over, if yields are normal on this expected 1949 acreage, marketing quotas would not be proclaimed for 1950. However, marketing quotas could be proclaimed if growing conditions are again favorable enough to result in yields two bushels above the average.

The 1949 marketing season is considered a crucial period for cotton since the domestic price for cotton already is near the loan level and prospects are that both domestic and world carry-over will increase during the current marketing year. If production in 1949 is at least 12.5 million bales, which is considerably less than last year's 14.9 million, marketing quotas would be almost certain for the 1950 crop. Unless acreages should be reduced or yields should be considerably less favorable than in 1948, such a reduction could not occur. In fact, present indications are that growers are likely to increase, not decrease, their acreages.

<sup>1</sup>The law also provides for cane sugar both on the mainland and in the United States island possessions. No sugar cane, however, is raised commercially in the Twelfth District.

Marketing quotas for rice for the 1950 marketing year do not seem likely. A goal 8 percent below the 1948 planted acreage is recommended by the United States Department of Agriculture for the 1949 crop.

Though the use of restrictive controls for non-basic commodities is largely dependent upon supply and demand conditions and must always be in conjunction with the price support program, the Secretary of Agriculture makes the final determination for their imposition. Consequently, it is difficult to anticipate the use of any form of controls for these commodities. If and when such controls are put into effect, they would most likely take the form of compliance with acreage allotments or goals as a condition for price support.

One of the Twelfth District crops which might come in for this form of control is flaxseed. Though no controls seem likely in 1949 since the price support program has already been announced without mention of such controls, large plantings this year would increase their possibility for 1950. The record production in 1948 coupled with the decreasing demand for linseed oil will undoubtedly result in a large carry-over. The United States Department of Agriculture has requested a 36 percent reduction in acreage for the 1949 crop and has reduced the level of support from 140 percent of parity to at least 90 percent.

#### ***Some production adjustments will be necessary in 1949 and possibly in 1950***

During 1949 controls will be effective on only one important Twelfth District crop—potatoes. Though a domestic quota has been established for the 1949 sugar beet crop, it is unlikely that farm allotments will be needed since production is not expected to exceed this quota. For potatoes the United States Department of Agriculture has requested a 9.3 percent reduction in total United States plantings largely because of surplus crops of recent years. The commercial part of the reduced national goal has been divided into state goals and is in the process of being broken down into county and farm goals. Compliance with farm goals will serve as a necessary condition for the 60 percent price support announced. These suggested reductions will obviously call for marked adjustments in many local areas of most Twelfth District states, if growers comply. This will require careful planning on the part of the individual potato grower as well as a consideration of alternative crops. Both sugar beets and cotton might be profitable alternatives for a grower with a reduced potato goal. Sugar beets have provided a steady income because of Government payments, and cotton will be supported at 90 percent of parity at least through 1949.

With respect to the other crops for which controls may be invoked, the individual grower will have a longer period in which to plan adjustments, since no quotas have been announced for 1949. Nevertheless, it would be well for farmers to begin considering possible alternative crops in case controls are invoked for the 1950 crops. This applies especially to cotton since indications are that such quotas are likely.

Cotton growers in the Twelfth District will be faced with not only a possible reduction in acreage allotments, but also a relatively greater reduction than other areas because of the presently prescribed methods of allocating the national allotment. In the case of wheat and rice, the allocation of the national allotment to the individual states must be adjusted for trends in recent acreages. For cotton, however, this adjustment is not prescribed. The allotment to any state is made on the basis of the average production during the previous five years, which would be the 1944-48 average in determining the 1950 quota. During this period in both Twelfth District cotton states, Arizona and California, production has increased sharply. Such sharp increases did not occur in the principal cotton producing states of the South. Second, county and farm allotments must be at least 60 and 50 percent, respectively, of the 1937 acreages planted to or "diverted" from cot-

ton. In many southern states this would result in allotments larger than recent acreages. Consequently California and Arizona would be faced with relatively greater reductions from last year's acreages in their allotments. For example, some estimates for California's possible reduction have been as high as 50 percent of the 1948 acreage.

It is probable that the present methods of allocating marketing quotas for cotton will be changed this year. Either an adjustment for recent trends or the use of the average of the previous three instead of the previous five years would be more favorable to Arizona and California. Even if the three-year period were used, which seems unlikely since the position of the West relative to the South would be greatly improved, significant reductions in California and Arizona cotton acreages would still be required.

### COMMERCIAL FISHERIES OF THE PACIFIC NORTHWEST AND ALASKA<sup>1</sup>

OREGON and Washington play an important role in the United States as a source of fresh fish and shellfish and canned fish products and byproducts. Moreover, their fishery industry is closely connected organizationally with the great Alaska fishery industry. There is one factor which gives an imprint of unity to the fishery industry of the whole North Pacific area—the utilization of salmon—although conditions vary greatly from area to area.

#### The Fishery Industry of Oregon and Washington

The average annual catch of fish and shellfish landed in Oregon and Washington and its value are as follows:

| Oregon <sup>1</sup>               |                     | Washington                        |                     |
|-----------------------------------|---------------------|-----------------------------------|---------------------|
| Amount<br>(millions<br>of pounds) | Value<br>(millions) | Amount<br>(millions<br>of pounds) | Value<br>(millions) |
| 1928-32.... 25                    | \$1.9               | 116                               | \$6.8               |
| 1933-37.... 53                    | 1.9                 | 126                               | 6.2                 |
| 1938-42.... 73                    | 4.0                 | 153                               | 9.7                 |
| 1943-45.... 74                    | 8.2                 | 169                               | 17.5                |

<sup>1</sup> One of the factors influencing the Oregon catch for the periods 1933-37 and 1938-42 was a large catch of pilchard. While it was negligible before 1935 and after 1941, it averaged 33 million pounds between 1935 and 1941.

While the catch of sole, rockfishes, sharks, and shellfish increased markedly in both states, a large but temporary increase in the pilchard catch was confined to Oregon; and while the albacore fishery has developed in both states, it is both absolutely and relatively much more important in Oregon than in Washington. Since three of the highest priced species of fish of the Pacific area, chinook salmon, albacore tuna, and halibut, are heavily represented in the catch of the North Pacific states, the value-volume ratio is high.

#### The salmon fishery

The Pacific area fishery industry as a whole exploits five different types of salmon, which in order of their price per unit of weight are as follows: chinook or king; red, blueback or sockeye; silver or coho; pink or humpback; and chum. Commercially, but not biologically, steel-

head trout is also counted among salmon. Salmon are caught by traps, purse seines, gillnets, and other types of nets, and kings and silvers are also caught by trolling. Sockeyes and pinks are used almost entirely for canning and represent about 75 percent of the total United States salmon pack. Large quantities of chinooks, silvers, and chums are sold in fresh and frozen form, and a considerable quantity of chinooks and some silvers and chums are used for curing. The Alaska catch of all types is almost completely canned, however.

In the period 1928-32, salmon made up 85 percent of the total value of the Oregon catch and 65 percent of the Washington catch. Increased local and out-of-state demand for other fish products led to a great increase in the catch of other species and to a great drop in the relative importance of the salmon catch. During the period 1943-45, the share of salmon in the value of the total catch in Oregon was 24 percent, and in Washington 23 percent. The salmon catch has remained more or less stable in amount during the past 20 years, although the shares of various species of salmon in the annual catches have fluctuated considerably. Measured in terms of the value of its products as prepared for the market, the salmon industry accounts for a considerably greater share, since the bulk of the catch is canned.

Chinooks (kings) are the most important segment of the Oregon salmon catch. Next in importance are silvers. Small catches of sockeyes and chums are made, but no pinks are caught. The Washington industry exploits all five types of Pacific salmon, but here also the relative importance of the various types differs greatly, with sockeyes the most important. There are pronounced cyclical fluctuations in the catch of sockeyes and pinks.<sup>1</sup>

<sup>1</sup> The catch of sockeyes, the bulk of which return for spawning at the age of four, shows two lean and two more abundant year-classes; and the catch of the pinks, which spawn at the age of two, is large only in odd years, while in even years very few of them are caught. Up to 1913 the sockeye fishery had been characterized by three small and one large cycles, but a landslide in the Fraser River in that year barred the way upstream to the spawning sockeyes. This has affected sockeye runs ever since, and has eliminated the "big run" every fourth year so characteristic of the fishery up to 1913.

<sup>1</sup> This is the third and final article on the fishery industry of the Pacific Coast states and Alaska. A limited number of reprints of the series of articles will be available on request.

### The halibut fishery

Halibut is a choice fish which is marketed entirely as fresh or frozen fish. The North Pacific fishery, exploited by both American and Canadian fishermen, supplies about 75 percent of the total world production. In the Washington fishery industry halibut plays a role second only to salmon. Receipts to the fishermen from halibut landings during the period 1928 to 1945 amounted to 21 percent of the total value of fish and shellfish landed. Halibut landings in Washington moved by periods as follows (annual averages in millions of pounds):

|               |      |               |      |
|---------------|------|---------------|------|
| 1928-32 ..... | 14.5 | 1938-42 ..... | 23.0 |
| 1933-37 ..... | 24.2 | 1943-45 ..... | 16.8 |

The decrease in landings continued during 1946 and 1947. During the war, price differentials under O.P.A. regulations made it more profitable for the Seattle halibut fleet to land part of its catch in Southeast Alaska ports. Increased facilities for freezing and handling halibut in Alaska have also contributed to increased landings in Alaskan ports.

Oregon halibut landings have only on occasion surpassed a million pounds a year, and thus this fishery plays only a minor role in that state.

The share of the Canadian fleet, as shown in the accompanying chart, has greatly increased since the early 1930's, although its exceedingly great share in 1947 may be explained largely by a labor dispute which kept the Seattle fleet inoperative for most of the halibut fishing season. Increased fishing for albacore, soupfin shark, and other fish, has also contributed to the declining share of the American fleet in the halibut catch. The Pacific halibut fishery is regulated by a United States-Canadian conservation agreement, which will be discussed in a later section.

### The albacore fishery

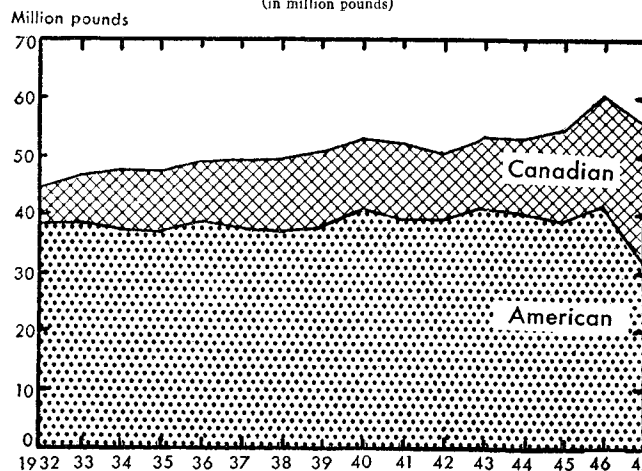
The most important change in recent years in the Oregon fishery industry (and to a lesser degree in the Washington industry), has been the development of the albacore fishery. There was no commercial fishery for albacore before 1937, although halibut and salmon fishermen occasionally caught some albacore. In 1938, six million pounds of albacore were caught, and in 1944 an all-time record of 22.5 million pounds was attained. From 1945 to 1947 the catch averaged 8 million pounds, with an especially low catch of 4 million pounds in 1946. It is reported in the trade press that the 1948 catch is second only to that of 1944. The development of the albacore fishery necessitated a great expansion of freezing and canning facilities in the state.

The catch of albacore in Washington amounted to 4 million pounds in 1938 and 12 million pounds in 1944. Between 1945 and 1947 the catch averaged only 4 million pounds.

### Opening of new sources of tuna supplies

Shipments of tuna from other areas for canning in Oregon were negligible prior to 1947. In that year some frozen tuna was brought in by regular commercial ships

NORTH PACIFIC HALIBUT CATCH OF  
THE AMERICAN AND CANADIAN FLEETS, 1932-47  
(in million pounds)



Source: *Pacific Fisherman Yearbook*, 1948, p. 241.

from Costa Rica. Much more important was the fact that in the summer of 1947 the largest fish packer in Oregon initiated experimental tuna freezing in waters off the Latin American coast with the Government-owned ship, "Pacific Explorer." This ship was fitted out for processing on the high seas all types of fish supplied to her by her fishing flotilla. During the summer of 1948, she operated in the Bering Sea canning king crab, formerly utilized only by Japanese fishermen, and freezing and otherwise utilizing other types of fish.

As her name implies, the "Pacific Explorer" serves also to explore the possibilities for commercial utilization of a wide range of fish species in areas where distances and operating conditions make existing types of operations impracticable. This type of activity will become more important as the frontier of effective fisheries exploitation, especially of tuna, is pushed still farther west and south in the Pacific Ocean. Experiences gained on the first trip of the "Pacific Explorer" have resulted already in practical application. In 1948, two ships which freeze tuna in waters off the Latin American coast and bring it to Oregon began operation. Thus Oregon tuna packers have started to tap an important raw material source used by the California tuna packing industry.

### Fish marketed in filleted form

Until the last three years, the Pacific Northwest fishery industry had increased greatly the catch of those types of fish which are marketed in the form of fillets. The catch of sole, negligible during the 1930's, rose during 1941-45 to an annual average of 8 million pounds in Oregon and 9.6 million pounds in Washington. The catch of lingcod in Washington averaged 800,000 pounds in the period 1928-32 and rose gradually to an average annual catch of 8.8 million pounds in 1941-45. Most spectacular, however, was the increase in the catch of rockfishes. This catch rose in Washington from an average of 500,000 pounds during 1928-32 to an average of 9 million pounds in 1941-45, including a catch of 25.5 million pounds in 1945. The Oregon catch rose from an average of about

100,000 pounds during the 1930's to 7.5 million pounds in 1943, 11.4 million pounds in 1944, and 17.5 million pounds in 1945.

The increase in the catch of sole and rockfishes was a direct result of the large demand developed for filleted fish, in both fresh and frozen form. In the Pacific Northwest this demand was greatly stimulated by large purchases by the United States armed forces during the war. The market for frozen fish in general, and for fillets in particular, weakened after the war, and the production of fish for filleting dropped sharply. The Pacific Coast states' production of frozen fish (excluding shellfish), dropped from 48 million pounds in 1945 to 37 million pounds in 1946, and to 28 million pounds in 1947. At the same time the production of frozen fillets in Washington and Oregon moved as follows (in millions of pounds):<sup>1</sup>

|                  | 1945 | 1946 | 1947 |
|------------------|------|------|------|
| Washington ..... | 4.2  | 3.9  | 1.7  |
| Oregon .....     | 2.2  | 4.5  | 1.7  |

<sup>1</sup> *Pacific Fisherman Yearbook*, 1946, 1947, 1948.

### The shark fishery

The strong demand for shark livers to be used in the preparation of vitamin A products has led to a large catch of sharks, including grayfish (dogfish), in the Pacific Northwest fishery industry in recent years. From 1941 to 1945, sharks accounted for about 14.5 percent of the total value of the catch to fishermen in Oregon and 18.8 percent in Washington. This segment of the fishery industry has become relatively much more important in the Pacific Northwest than in California. In Washington, the fishery industry had been engaged in systematic fish liver collection long before the shark liver bonanza. It formerly collected cod, halibut, and sablefish (black cod) livers. It was, however, the large-scale exploitation of the soupfin shark and grayfish livers which gave rise to the new industry in the Pacific Northwest and made Seattle one of the chief centers of collection and marketing of fish livers for vitamin production.

### The shellfish fishery

Between 1928 and 1945, shellfish production contributed 8.5 percent in Oregon and 13 percent in Washington of the value of total landings of fish and shellfish. This fishery plays a much more important role in these two states than in either California or Alaska. The leading species are crab, the Japanese or Pacific oyster, and the Western or native oyster, followed by hardshell and razor clams. Landings of scallops, shrimp, and squid are small. The catch of clams in Washington was very heavy during the 1930's, but the clam beaches became badly depleted and the catch is now strictly controlled. The average annual production and value of crab and Pacific oysters in the two states from 1928 to 1945 by periods were as follows:

|               | Crab                              |     |                      |       | Pacific oysters                   |     |                      |       |
|---------------|-----------------------------------|-----|----------------------|-------|-----------------------------------|-----|----------------------|-------|
|               | Volume<br>(millions<br>of pounds) |     | Value<br>(thousands) |       | Volume<br>(millions<br>of pounds) |     | Value<br>(thousands) |       |
|               | Ore.                              | Wn. | Ore.                 | Wn.   | Ore.                              | Wn. | Ore.                 | Wn.   |
| 1928-32 ..... | 0.7                               | 1.5 | \$ 41                | \$ 85 | ..                                | 0.6 | \$..                 | \$ 72 |
| 1933-37 ..... | 2.8                               | 1.6 | 175                  | 114   | ..                                | 5.4 | ..                   | 392   |
| 1938-42 ..... | 6.1                               | 4.3 | 312                  | 260   | 0.4                               | 9.6 | 24                   | 665   |
| 1943-45 ..... | 7.0                               | 5.2 | 527                  | 412   | 0.7                               | 8.5 | 161                  | 1,891 |

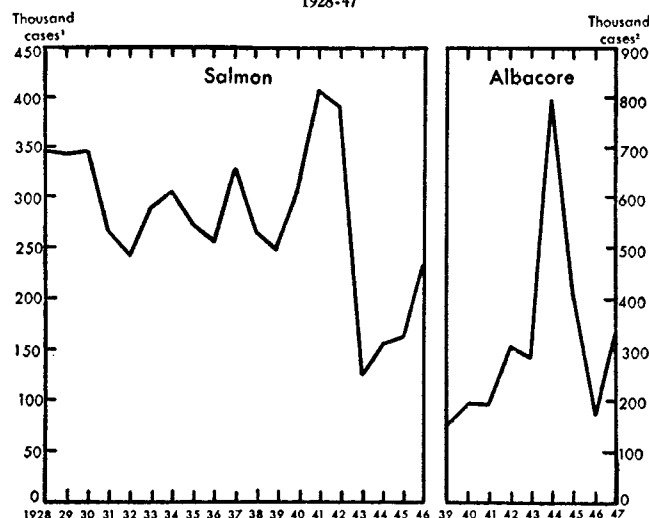
Before the war the Pacific Northwest oyster industry depended on seed imported from Japan. This source of supply was cut off during the war and the number of mature oysters has decreased greatly, despite attempts to sustain the industry with locally grown seed. New imports of seed from Japan in the past two years have been heavy. While large quantities of oysters and other shellfish are marketed in fresh and frozen form, canning of these species also has been important.

### The fish canning industry

Until about nine years ago the salmon pack was practically the only product of importance for the fish canning industry of the Pacific Northwest. Albacore packing in recent years, especially in Oregon, has, however, become a new large industry. The pack of salmon, shown on the accompanying chart, has reflected on the whole the fluctuations in the catch, although there has been a tendency in recent years to market a somewhat larger proportion of the total salmon catch in fresh and frozen form. The pack of albacore, shown in the same chart, has fluctuated rather widely reflecting the catch which changes greatly from year to year. Between 1939 and 1947, it averaged 312,000 cases a year. As the pack in Washington during the same period averaged only 31,000 cases a year, it appears that the bulk of the Washington catch was canned in Oregon.

Washington's total salmon pack, shown on the accompanying chart, has also been affected by increased marketings of fresh and frozen salmon. Wide fluctuations from year to year reflect essentially the differences in the pack of pink salmon which, as pointed out earlier, are caught almost entirely in odd years. All species of salmon have shared, however, in the decline in the total catch and pack during the past 19 years.

OREGON SALMON AND ALBACORE PACK  
1928-47



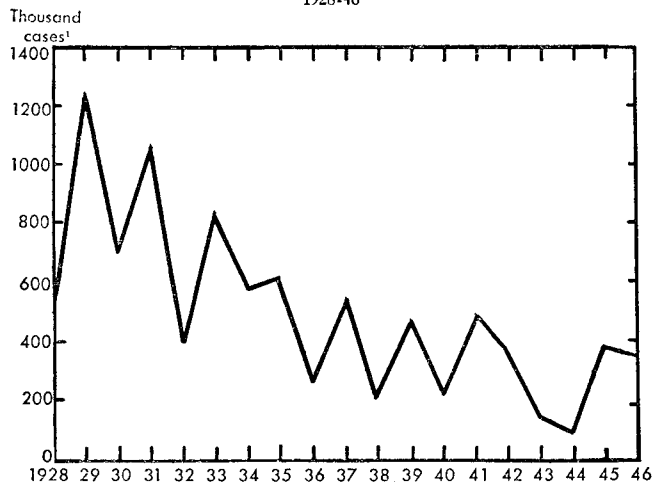
<sup>1</sup> In standard cases of 48 one-pound cans. Excludes pack of smoked and barbecued salmon, which in 1946 was 47,241 cases. Includes a small quantity of salmon packed in California.

Source: United States Department of the Interior, Fish and Wildlife Service.

<sup>2</sup> In standard cases of 48 half-pound cans.

Source: *Pacific Fisherman Yearbook*, 1948, p. 198.

WASHINGTON SALMON PACK  
1928-46



<sup>1</sup>In standard cases of 48 one-pound cans. Excludes the pack of smoked and barbecued salmon, which in 1946 was 47,471 standard cases.

Source: United States Department of the Interior, Fish and Wildlife Service.

In 1946, 43 plants in Washington and 14 plants in Oregon were engaged in salmon canning. The following table shows the average share of various species of salmon in the pack between 1928 and 1946 in the two states:

|                       | Percent of amount |       | Percent of Value |       |
|-----------------------|-------------------|-------|------------------|-------|
|                       | Oregon            | Wash. | Oregon           | Wash. |
| King (chinook) .....  | 62.6              | 13.3  | 71.2             | 19.0  |
| Sockeye (red) .....   | 2.6               | 25.4  | 4.0              | 43.0  |
| Silver (coho) .....   | 16.9              | 11.0  | 13.5             | 10.0  |
| Chum (keta) .....     | 12.3              | 13.0  | 5.2              | 6.9   |
| Pink (humpback) ..... | ...               | 36.4  | ...              | 20.0  |
| Steelhead .....       | 5.6               | 0.9   | 6.1              | 1.1   |

Oregon and Washington also can small quantities of other types of fish. Most important has been the pack of various types of shellfish, particularly crabmeat and oysters.

### Commercial Fisheries of Alaska

After California, Alaska is the most important source of fishery products for the United States. Between 1948 and 1946, its annual catch of fish and shellfish averaged 666 million pounds and brought to the fishermen \$14.7 million on the average per year. Salmon are the mainstay

of the Alaska fishery industry. They provide the largest and most valuable catch, and salmon canning is by far the most important processing activity. Second in importance in the Alaska catch is halibut, followed by herring and sablefish. In the period under consideration, only one new fishery of importance has been developed; that is, the fishery for sablefish (black cod) which is utilized both for curing and as a source of livers for vitamins. The share of shellfish production in the value of the total Alaskan catch has averaged only 1 percent.

The four leading fisheries contributed to the total value of catch, by periods, as follows:

|              | Salmon<br>(percent) | Halibut<br>(percent) | Herring<br>(percent) | Sablefish<br>(percent) | Av. annual<br>value of<br>total catch<br>(in thousands) |
|--------------|---------------------|----------------------|----------------------|------------------------|---------------------------------------------------------|
| 1928-32 .... | 71.5                | 19.5                 | 7.8                  | 0.1                    | \$12,645                                                |
| 1933-37 .... | 83.4                | 7.1                  | 7.6                  | 0.3                    | 11,526                                                  |
| 1938-42 .... | 80.1                | 12.9                 | 4.7                  | 1.0                    | 13,389                                                  |
| 1943-46 .... | 67.1                | 20.8                 | 5.4                  | 4.5                    | 23,021                                                  |

The relative importance of salmon has tended to decrease as other Alaska fish resources have been more fully tapped. That development, however, is only slight as compared with the relative decline in the value of salmon in Oregon and Washington during the same period. Relative to the total catch, sablefish have increased about three-fold in quantity, but almost twenty-fold in value during the past eight years.

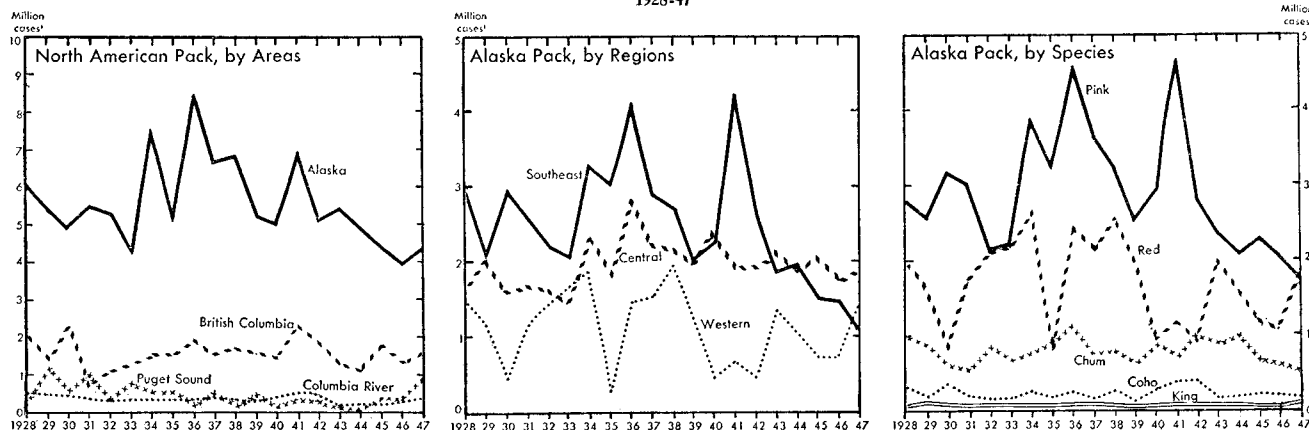
The importance of salmon is still greater if judged on the basis of the value of fishery products as prepared for the market, as this reflects the value added through processing. The share of halibut, which is marketed only in fresh and frozen form, on the contrary, becomes much smaller. These relationships are shown in the following table:

|               | Salmon<br>(percent) | Halibut<br>(percent) | Herring<br>(percent) | Av. annual<br>value of<br>total catch<br>(in thousands) |
|---------------|---------------------|----------------------|----------------------|---------------------------------------------------------|
| 1928-32 ..... | 86.6                | 5.2                  | 6.1                  | \$40,329                                                |
| 1933-37 ..... | 90.9                | 5.0                  | 2.0                  | 41,504                                                  |
| 1938-42 ..... | 91.0                | 3.7                  | 3.6                  | 47,880                                                  |
| 1943-46 ..... | 84.4                | 5.3                  | 6.5                  | 65,835                                                  |

### The Alaska salmon fishery and pack

The following chart presents the basic data on the Alaska salmon pack between 1928 and 1947 in relation to the pack in other areas in North America, with regard

CANNED SALMON PACK  
1928-47



<sup>1</sup>In standard cases of 48 one-pound cans. Source: *Pacific Fisherman Yearbook*.

to geographic regions in Alaska itself, and with regard to species. Alaska exploits all five species of Pacific salmon. Since 1878 when salmon packing began in Alaska, the salmon industry has extended in two directions owing to the increased demand for the canned product. It has tapped more and more fishing grounds and has gone from higher to lower quality species.

Alaska is by far the most important source of canned salmon in the world. Its share in the North American pack averaged 70.5 percent from 1928 to 1947. During the same period its share in the United States pack was 87.7 percent. The other major producers of canned salmon are British Columbia, the Soviet Union, and Japan. Comparable data exist only for years prior to 1936. In the period 1931-35, world production of canned salmon was distributed as follows: United States 66.4, Canada 12.2, Soviet Russia 13.8, and Japan 7.6 percent.

The chief source of canned red (sockeye) salmon is Western Alaska, especially Bristol Bay, but large packs are put up also in Central Alaska. Kings (chinooks) come mostly from Southeast Alaska, while most pinks, chums, and silvers are canned in Southeast and Central Alaska. Between 1928 and 1946, reds contributed 43 percent and pinks 41 percent of the total value of the pack. The shares of chums, silvers, and kings were 10.1, 4.6, and 1.3 percent, respectively.

Since 1944, the total salmon pack has been below 5 million cases every year. According to preliminary reports, the 1948 pack of 3,931,000 cases is the smallest since 1927, although its estimated value of about \$96 million is the largest in the territory's history. The reduction in the pack affected the three leading species quite evenly, and was more pronounced in Southeast Alaska than in the two regions to the west.

#### **The halibut fishery**

The halibut fishery, the second most important in Alaska, extends along the whole coast of the territory. As stated earlier, this fishery is regulated by an agreement between the United States and Canada. Average landings of halibut in Alaskan ports and their value between 1928 and 1946 were as follows:

|               | <b>Landings</b><br>(millions of pounds) | <b>Value</b><br>(thousands) |
|---------------|-----------------------------------------|-----------------------------|
| 1928-32 ..... | 29.9                                    | \$2,471                     |
| 1933-37 ..... | 15.9                                    | 820                         |
| 1938-42 ..... | 23.5                                    | 1,727                       |
| 1943-46 ..... | 35.0                                    | 4,793                       |

Increased landings in recent years reflect the larger total catch of halibut and the larger number of small boats from Alaskan ports now engaged in halibut fishing, as well as the shift in landings from Seattle to Alaska.

#### **The herring fishery**

From 1928 to 1946, the herring fishery supplied an average of 144.6 million pounds annually or 21.7 percent of all the fish and shellfish landed in Alaska, but only 6.2 percent of the value of the total catch. Herring is utilized in more ways than any other Alaska fish. Its chief use is for the production of oil. Between 1928 and 1946, 3 mil-

lion gallons of herring oil were produced annually. The 1946 production of 3.4 million gallons was valued at \$4.3 million. The resulting fish meal production averaged 11,600 tons from 1928 to 1946. In 1946, 15,000 tons, valued at \$1.9 million, were produced. About 5 percent of the herring catch is used for bait, mostly in the halibut fishery.

Part of the catch is cured. Because of high production and transport costs, however, herring cured in Alaska cannot compete in the United States, except on the Pacific Coast, with herring imported from Newfoundland and Iceland. Thus, production of cured herring has fallen from an annual average of 46,000 barrels from 1928 to 1936 to only 8,700 barrels from 1937 to 1946.

#### **The fur seal industry**

Exploitation of the Alaska fur seal has been regulated by international agreement since 1911 in the interest of conservation. The herd, which now includes about 80 percent of all seals in the world, has grown more than sixteen-fold during the past 35 years. The figures (in thousands) follow:

| <b>Year</b> | <b>Number</b> | <b>Year</b> | <b>Number</b> |
|-------------|---------------|-------------|---------------|
| 1912 .....  | 216           | 1932 .....  | 1,220         |
| 1917 .....  | 469           | 1937 .....  | 1,839         |
| 1922 .....  | 605           | 1941 .....  | 2,338         |
| 1927 .....  | 809           | 1947 .....  | 3,614         |

The take of skins rose with the increase of the herd, and between 1937 and 1941 it averaged 66,860 skins annually. In more recent years the skin take has not been as regular as before the war, and in spite of a greatly increased herd it averaged only 73,550 skins between 1943 and 1947. The processing of skins is done by a private firm in St. Louis, Missouri, under contract with the Government, and they are sold at public auction. In 1945, the 46,100 skins sold at auction brought \$2.4 million. In addition, oil and meal are produced from fur-seal carcasses and blubber.

#### **Conservation in the Northern Pacific Area**

The purpose of conservation is to manage a fishery so as to combine an optimum catch with sufficient maintenance of the spawning stock to insure high sustained yields. In order to accomplish this, conservation policies have to be adjusted to the particular requirements of individual fisheries or individual segments of a fishery. As conditions in various fisheries vary greatly because of different natural conditions, because of man-made obstacles, and because of the varying impact of the fishery on the stock, conservation measures vary greatly in both type and stringency.

One important problem in fisheries conservation is jurisdiction over fisheries. Fisheries matters are in the hands of the states, and in Alaska they are in the hands of the Federal authorities. Some fisheries are exploited, however, by fishermen of various states or of various countries. Successful conservation work in such cases is possible only on the basis of interstate or international agreements. While important interstate fisheries arrange-

ments are new on the Pacific Coast,<sup>1</sup> international agreements have a long and successful record in this area and cover halibut, Fraser River sockeye salmon, and the Alaska fur seal.<sup>2</sup>

### *Salmon conservation in the Pacific Northwest*

While the authorities of Oregon and Washington, and Federal authorities in Alaska, have paid considerable attention to the scientific and practical problems of conservation of many species of fish and shellfish, their chief interest is the conservation of salmon runs, as they represent the chief fishery resource of the whole North Pacific area. A system of control measures to further the maintenance of the salmon runs has been developed gradually and with difficulty. The need for conservation measures became more evident as unchecked exploitation of the runs and advancing industrialization cut into the stock of salmon. Advancing industrialization, especially in Washington and Oregon, has constantly reduced both the area and the suitability of spawning grounds.

Systematic conservation measures for salmon are rather easily devised because their life cycle and habits are well known. After hatching, the young spend some time in fresh water; then migrate to the ocean. Upon reaching maturity in the ocean (between two and four years after hatching, according to species), salmon return to spawn and die in the rivers and creeks of their origin. This homing habit of the salmon forms the basis of all salmon conservation work.

In the course of time the authorities have developed the following measures: (1) control of the periods when various types of salmon can be caught, thus insuring the escapement of a certain portion of fish passing through the fishery while fishing is not allowed; (2) establishment of certain areas where fishing for salmon is not allowed; (3) regulation of the types of gear which can be used in various areas of the fishery; (4) regulation of water use and construction of facilities to insure the passage of salmon through fresh waters which serve as migrating routes or spawning grounds, in order to minimize the unfavorable effects of the multiple use of these waters on the salmon population; (5) the establishment of large-scale hatchery operations in order to increase the number of young fish migrating to salt water, increasing in turn the number of mature fish both for commercial exploitation and for further propagation.

Such control measures have been applied in Washington and Oregon for many years. Between 1943 and 1947,

<sup>1</sup>The first such agreement covering the three Pacific Coast states was concluded at the end of 1947 when the Pacific Marine Fisheries Commission was established. The Commission's chief function is to coordinate the fisheries research activities performed by the three states. It is engaged at the present time primarily in coordinating research on albacore, shark, and crab fisheries.

<sup>2</sup>As shown in our discussions of the tuna fishery of California and Oregon, a large proportion of tuna packed by the Pacific Coast states comes from waters off the Latin American coast. Tuna migrations and abundance problems have been investigated but little. Such investigation has become more necessary with the increasing exploitation of the tuna fishery from year to year. It is therefore quite understandable that an agreement should be sought by the United States and Mexico to insure cooperation in the investigation of this fishery. Such an agreement was drafted last November and adopted by the two governments late in January 1949. Under this convention, which established a commission of four members, the activity of the Commission is limited to research, but it also has the power of making recommendations to the two governments.

Washington hatcheries planted on the average 25 million young salmon annually, while between 1941 and 1945, Oregon hatcheries planted about 62 million annually. The multiple use of fresh waters, however, creates the most complicated technical problem. In order to enable salmon to reach spawning grounds above hydro-electric dams, such as some of those on the Columbia River, artificial fishways have been built. Further advances in the multiple use of water resources in Oregon and Washington, already planned, will make salmon conservation work more complicated and more costly, but at the same time more necessary to the fishery industry.

### *Alaska salmon conservation*

Federal authorities began to regulate the exploitation of Alaska fisheries in 1889. For many years the regulations were quite ineffective, although they provided against obstruction of streams, for weekly closed periods during the fishing season, and for the protection of some spawning areas. Some hatchery work was also undertaken. Because of the size of the territory, too few Federal agents, and competition among both fishermen and canners for the greatest possible production, regulation was of little avail.

Greatly intensified salmon fishing during World War I (the pack reached a level of 6,677,000 cases in 1918), threatened certain areas of Alaska with serious depletion. Studies undertaken thereafter led in 1924 to the passage of the White Act, which has since remained the basis of Alaska salmon regulation and conservation work. Its basic principle consists in the provision that half the salmon of each individual run should escape and serve for the maintenance of the stock. To accomplish this it has been necessary to have separate regulations for various areas as well as yearly changes in the existing basic regulations in order to adjust to changing conditions in various sections of the fishery. One essential provision made in the 1924 Act was to prohibit the landing in Alaska of fish caught in extra-territorial waters in periods when fishing is prohibited in territorial waters.

While the principle of allowing 50 per cent of each run to escape is admittedly inadequate as the basis of a rational management policy of a salmon fishery, it is a considerable improvement over previously existing practices. With the decreasing catches in recent years, annually promulgated regulations have become more stringent. The decline of the Alaska salmon catch during recent years has stimulated increased research, both on the part of the Federal Government and on the part of private industry. Some of this research also pertains to the utilization of about 100 million pounds of offal connected with salmon canning which is now wasted every year.

### *The Fraser River sockeye salmon*

The productivity of the Fraser River sockeye salmon fishery<sup>1</sup> dropped sharply after 1913. The average annual

<sup>1</sup>The Fraser River is a Canadian river which empties into the Gulf of Georgia just north of the international boundary. Sockeye salmon which spawn in the Fraser River tributaries are caught as far out as the Swiftsure bank off the coast of Washington and Vancouver Island.

sockeye pack during the period 1910-13 on both sides of the border amounted to 829,000 standard cases, compared with 272,000 cases in 1942-45. A convention for conservation of the Fraser River sockeye salmon was concluded in 1930, but did not become operative until 1938. The agreement covers a period of 16 years beginning with 1938. The first eight years were earmarked for a thorough study of the fishery. During the following eight years beginning in 1946, the International Pacific Salmon Fisheries Commission, established by the convention, is empowered to undertake regulatory work.

The Commission proved through tagging experiments and direct observation of the migration of the runs upstream that the chief obstacle to salmon migration, which in turn reduced their abundance, was a rockslide which occurred in 1913.<sup>1</sup> Fishways constructed in recent years now insure unrestricted passage at any level of water between 10 and 70 feet. Moreover, obstructions were cleared, by construction of fishways or otherwise, at several other points above Hell's Gate, especially on Bridge River Rapids, so that sockeyes can now reach all spawning grounds in normal time and in good condition. The great floods in 1948, which swelled the Fraser River over all previous records, kept the water flow at critical levels during the whole period of the salmon run through Hell's Gate. This might have been disastrous had the fishways not been in operation. Subsequent surveys have shown, however, that the escapement was quite satisfactory last year.

The Commission also faces the difficulty of unevenness, both of total runs in various years and of strains belonging to various spawning streams which pass through the commercial fishery at various times. The basic problem here is to manage the closure periods so as to insure an optimum catch and an optimum escapement of salmon, always keeping in mind whether the size of the individual run requires stabilization or further upbuilding. The Commission's work is now concentrated on this problem.

Unlike the halibut treaty, the sockeye salmon conservation agreement provides that the Commission should endeavor to regulate the fishery so as to insure a nearly equal sharing of the catch between the American and the Canadian fishermen. The fact that the Canadian share was much larger in 1946 and 1947 caused considerable resentment on the American side, but the 1948 catch seems to have been rather equally shared.

### **Halibut**

The exploitation of halibut was carried on first at the nearby banks off the coasts of Washington, British Columbia, and Southeastern Alaska. Increasing demand and reduced abundance in these waters, however, forced the fleet to exploit new grounds. In the early 1920's the halibut fishery reached its geographical limits. Increased de-

mand could thereafter be met only by more intensive exploitation. Depletion due to overfishing soon resulted. The catch per unit of fishing effort dropped on the more sheltered banks from an average of 187 pounds during the period 1910-14 to only 48 pounds during the 1925-29 period.

The first step toward the rebuilding of the halibut fishery was to investigate its biological bases. This was the objective of the American-Canadian halibut fishery treaty of 1923. The results of this investigation, carried out by the scientific staff of the International Fisheries Commission set up by the treaty of 1923, served as the basis for a new treaty in 1930. This treaty gave the Commission the right to regulate the fishery by establishing an annual quota of catch, to regulate the types of gear used, to regulate the opening and the closing of the fishing season, to close certain halibut nursery grounds, and to require the fishermen to furnish certain statistical data necessary for a continuing study of halibut abundance. The Commission established a quota for the first time in 1932 and split it among the four various areas, numbered 1 to 4, into which the fishery was divided. The quota is not divided into separate parts for the American and for the Canadian fleets. As the fishermen tried to get the highest possible share from the limited catch, halibut landings had a tendency to bunch at the beginning of the season and to drive prices down. In order to avoid this and to distribute equitably the catch among the various segments of the fleet, the industry organized its own control scheme on both sides of the border. Under this arrangement, detailed regulations regarding the number of trips and the catch per man per trip for every boat throughout the season, have been promulgated.

Meanwhile, with the imposition of the quota, a growing number of spawners remained on the banks each year and the halibut population slowly rose. Between 1931, the last year before the quota system was set up, and 1945 the abundance of halibut on the grounds extending from Willapa Harbor in Washington to Cape Spencer in Southeast Alaska (Area 2) rose by 108 percent, and in the Alaskan waters west of Cape Spencer (Area 3) by 110 percent.<sup>1</sup> Increased abundance is also indicated by the shorter time necessary to catch the annual quota. The open season in Area 2 was reduced from an average of 199 days in 1932-36 to only 32 days in 1948, and in Area 3 from 267 to 72 days. The quota of catch for the whole fishery has been increased from 46 million pounds in 1932 to 49 million pounds in 1941 and 53.5 million in 1947 and 1948. The actual catch regularly exceeds the allowed quota, especially in Area 2, by several million pounds.

The condition of the halibut fishery after 16 years of international regulation is extremely good, and shows how beneficial for the industry and for the countries concerned an intelligently managed fishery can be. The fishery now takes about one-third more fish than in pre-control years with about two-thirds the previous fishing effort.

<sup>1</sup>The engineering problem facing the Commission was as follows: the water level at Hell's Gate varies between a maximum of about 90 feet in June and a minimum of about 10 feet in December. When the water level is between 25 and 40 feet, and this often happens during the July-September period when salmon pass this section of the river, the flow and turbulence are such that the fish could not pass upstream to reach their particular spawning grounds.

<sup>1</sup>*Pacific Fisherman Yearbook*, 1946, p. 331.

***Alaska herring***

As overfishing during the 1930's resulted in severe depletion of the herring fishery in Southeast Alaska and also threatened the herring fisheries of Central Alaska, Federal authorities introduced catch quotas in the Prince William Sound and in the Kodiak area in 1939, and practically prohibited the commercial herring fishery in Southeast Alaska, except for bait. Annual quotas were steadily changed under the influence of the changing conditions in the fishery, and as herring became more abundant the quotas were raised. The systematic rebuilding of the Southeast Alaska herring fishery is another example of successful fisheries' conservation policy.

***Alaska fur seals***

The Pribiloff Islands off the coast of Alaska in the Bering Sea are the breeding grounds (rookeries) of the Alaska fur seal. The high value of the fur of this mammal led, between 1870 and 1910, to its ruthless exploitation, both on the rookeries where sealing rights were leased to a private firm by the United States Government, and especially on the high seas (pelagic sealing) where American, Canadian, and Japanese sealers operated. By

1910, the herd was reduced to 132,000, a small fraction of its original size. An international convention for the protection of fur seals was concluded in 1911 between the United States, Great Britain (Canada), Russia, and Japan. It prohibited pelagic sealing, established a United States monopoly for killing Alaska seals, and provided for a quota distribution of the skins taken.

Under the United States Government management established by international agreement, the Pribiloff Islands seal herd has grown rapidly. The polygamous nature of the species allows for fast growth of the herd if females are protected and a sufficient number of males is left. Only three-year-old males, which have the most valuable fur, are taken.

Although the 1911 convention was abrogated by Japan in 1940, the exploitation of the Alaska fur seal is still regulated by international agreement. In 1942, a provisional agreement was concluded with Canada whereby it received 20 percent (instead of 15 percent as previously), of the skins taken annually from the herd. In December 1947, this provisional American-Canadian agreement was extended until a permanent convention can be concluded.



**BUSINESS INDEXES—TWELFTH DISTRICT<sup>1</sup>**

(1935-39 average = 100)

| Year and Month | Industrial production (physical volume) <sup>2</sup> |                        |     |        |                   |                     |                          |                | Total mfg employment <sup>3</sup> | California factory payrolls <sup>4</sup> | Car-loadings (number) <sup>5</sup> | Dep't store sales (value) <sup>6</sup> | Dep't store stocks (value) <sup>6</sup> | Retail food prices <sup>7,8</sup> |
|----------------|------------------------------------------------------|------------------------|-----|--------|-------------------|---------------------|--------------------------|----------------|-----------------------------------|------------------------------------------|------------------------------------|----------------------------------------|-----------------------------------------|-----------------------------------|
|                | Lumber                                               | Petroleum <sup>1</sup> |     | Cement | Lead <sup>9</sup> | Copper <sup>1</sup> | Wheat flour <sup>1</sup> | Electric power |                                   |                                          |                                    |                                        |                                         |                                   |
| 1929           | 148                                                  | 129                    | 127 | 110    | 171               | 160                 | 106                      | 83             | .....                             | 111                                      | 135                                | 112                                    | 134                                     | 132.0                             |
| 1930           | 112                                                  | 101                    | 107 | 96     | 146               | 106                 | 100                      | 84             | .....                             | 93                                       | 116                                | 104                                    | 127                                     | 124.8                             |
| 1931           | 77                                                   | 83                     | 90  | 74     | 104               | 75                  | 101                      | 82             | .....                             | 73                                       | 91                                 | 92                                     | 110                                     | 104.0                             |
| 1932           | 46                                                   | 78                     | 84  | 48     | 75                | 33                  | 89                       | 73             | .....                             | 54                                       | 70                                 | 69                                     | 86                                      | 89.8                              |
| 1933           | 62                                                   | 76                     | 81  | 54     | 75                | 26                  | 88                       | 73             | .....                             | 53                                       | 70                                 | 66                                     | 78                                      | 86.8                              |
| 1934           | 67                                                   | 77                     | 81  | 70     | 79                | 36                  | 95                       | 79             | .....                             | 64                                       | 81                                 | 74                                     | 83                                      | 93.2                              |
| 1935           | 83                                                   | 92                     | 91  | 68     | 89                | 57                  | 94                       | 85             | .....                             | 78                                       | 88                                 | 86                                     | 88                                      | 99.6                              |
| 1936           | 106                                                  | 94                     | 98  | 117    | 100               | 98                  | 96                       | 96             | 100                               | 96                                       | 103                                | 99                                     | 96                                      | 100.3                             |
| 1937           | 113                                                  | 105                    | 105 | 112    | 118               | 135                 | 99                       | 105            | 112                               | 115                                      | 109                                | 106                                    | 103                                     | 104.5                             |
| 1938           | 88                                                   | 110                    | 103 | 92     | 96                | 88                  | 96                       | 102            | 96                                | 101                                      | 96                                 | 101                                    | 101                                     | 99.0                              |
| 1939           | 110                                                  | 99                     | 103 | 114    | 97                | 122                 | 107                      | 112            | 104                               | 110                                      | 104                                | 109                                    | 107                                     | 96.9                              |
| 1940           | 120                                                  | 98                     | 103 | 124    | 112               | 144                 | 103                      | 122            | 118                               | 134                                      | 110                                | 119                                    | 114                                     | 97.6                              |
| 1941           | 142                                                  | 102                    | 110 | 164    | 113               | 163                 | 103                      | 136            | 155                               | 224                                      | 127                                | 139                                    | 137                                     | 107.9                             |
| 1942           | 141                                                  | 110                    | 116 | 194    | 118               | 188                 | 104                      | 167            | 230                               | 460                                      | 137                                | 171                                    | 190                                     | 130.9                             |
| 1943           | 137                                                  | 125                    | 135 | 160    | 104               | 192                 | 115                      | 214            | 306                               | 705                                      | 133                                | 203                                    | 174                                     | 143.4                             |
| 1944           | 136                                                  | 137                    | 151 | 128    | 93                | 171                 | 119                      | 231            | 295                               | 694                                      | 140                                | 223                                    | 179                                     | 142.1                             |
| 1945           | 109                                                  | 144                    | 160 | 131    | 81                | 137                 | 132                      | 219            | 229                               | 497                                      | 134                                | 247                                    | 183                                     | 146.3                             |
| 1946           | 130                                                  | 139                    | 148 | 165    | 73                | 109                 | 128                      | 219            | 175                               | 344                                      | 135                                | 305                                    | 238                                     | 167.4                             |
| 1947           | 141                                                  | 147                    | 159 | 193    | 98                | 163                 | 133                      | 256            | 184                               | 401                                      | 142                                | 330                                    | 300                                     | 200.3                             |
| October        | 148                                                  | 148                    | 166 | 187    | 96                | 141                 | 134                      | 263            | 187                               | 418                                      | 141                                | 342                                    | 293                                     | 204.8                             |
| November       | 154                                                  | 150                    | 163 | 205    | 107               | 151                 | 133                      | 263            | 188                               | 421                                      | 143                                | 347 <sup>r</sup>                       | 327                                     | 209.4                             |
| December       | 162                                                  | 149                    | 160 | 215    | 98                | 161                 | 116                      | 275            | 188                               | 423                                      | 144                                | 361                                    | 353                                     | 213.0                             |
| 1948           |                                                      |                        |     |        |                   |                     |                          |                |                                   |                                          |                                    |                                        |                                         |                                   |
| January        | 144                                                  | 150                    | 166 | 218    | 106               | 163                 | 114                      | 278            | 187                               | 418                                      | 141                                | 348                                    | 360                                     | 215.4                             |
| February       | 152                                                  | 150                    | 166 | 207    | 112               | 166                 | 104                      | 283            | 187                               | 417                                      | 130                                | 327                                    | 377                                     | 213.0                             |
| March          | 148                                                  | 151                    | 164 | 216    | 109               | 157                 | 101                      | 274            | 187                               | 406                                      | 131                                | 339                                    | 388                                     | 211.6                             |
| April          | 133                                                  | 152                    | 166 | 216    | 110               | 164                 | 116                      | 275            | 184                               | 396                                      | 130                                | 362                                    | 386                                     | 216.0                             |
| May            | 122                                                  | 152                    | 172 | 202    | 102               | 164                 | 108                      | 263            | 180                               | 406                                      | 123                                | 364                                    | 347                                     | 217.6                             |
| June           | 128                                                  | 153                    | 168 | 196    | 102               | 165                 | 115                      | 266            | 185                               | 424                                      | 134                                | 372                                    | 335                                     | 216.6                             |
| July           | 153 <sup>r</sup>                                     | 152                    | 167 | 202    | 97 <sup>r</sup>   | 159                 | 123                      | 284            | 190                               | 440                                      | 137                                | 365                                    | 328                                     | 218.1                             |
| August         | 159 <sup>r</sup>                                     | 153                    | 171 | 202    | 104 <sup>r</sup>  | 166                 | 124                      | 289            | 194                               | 455                                      | 141                                | 383                                    | 302                                     | 218.0                             |
| September      | 155 <sup>r</sup>                                     | 123                    | 110 | 215    | 104 <sup>r</sup>  | 163                 | 123                      | 295            | 197                               | 454                                      | 146                                | 355                                    | 311                                     | 218.0                             |
| October        | 149                                                  | 151                    | 155 | 217    | 105               | 152                 | 114                      | 291            | 196                               | 452                                      | 132                                | 336                                    | 333                                     | 217.0                             |
| November       | 145                                                  | 153                    | 173 | 232    | .....             | 109                 | 126                      | 295            | 194 <sup>p</sup>                  | 449                                      | 134                                | 323                                    | 356                                     | 216.0                             |

**BANKING AND CREDIT STATISTICS—TWELFTH DISTRICT**

(amounts in millions of dollars)

| Year and month | Condition items of all member banks <sup>1</sup> |                       |                                       |                     | Member bank reserves and related items <sup>2</sup> |                                     |                                   |                                                |          | Bank debits index 31 cities <sup>4,11</sup> (1935-39 = 100) <sup>3</sup> |
|----------------|--------------------------------------------------|-----------------------|---------------------------------------|---------------------|-----------------------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------|----------|--------------------------------------------------------------------------|
|                | Loans and discounts                              | U.S. Gov't securities | Demand deposits adjusted <sup>5</sup> | Total time deposits | Reserve bank credit <sup>10</sup>                   | Commercial operations <sup>11</sup> | Treasury operations <sup>11</sup> | Coin and currency in circulation <sup>10</sup> | Reserves |                                                                          |
| 1929           | 2,239                                            | 495                   | 1,234                                 | 1,790               | - 34                                                | 0                                   | + 23                              | - 6                                            | 175      | 146                                                                      |
| 1930           | 2,218                                            | 467                   | 1,158                                 | 1,933               | - 16                                                | - 53                                | + 89                              | + 16                                           | 183      | 126                                                                      |
| 1931           | 1,898                                            | 547                   | 984                                   | 1,727               | + 21                                                | - 154                               | + 154                             | + 48                                           | 147      | 97                                                                       |
| 1932           | 1,570                                            | 601                   | 840                                   | 1,618               | - 42                                                | - 175                               | + 234                             | + 30                                           | 142      | 68                                                                       |
| 1933           | 1,486                                            | 720                   | 951                                   | 1,609               | - 7                                                 | - 110                               | + 150                             | - 18                                           | 185      | 63                                                                       |
| 1934           | 1,469                                            | 1,064                 | 1,201                                 | 1,875               | - 1                                                 | - 198                               | + 257                             | + 4                                            | 242      | 72                                                                       |
| 1935           | 1,537                                            | 1,275                 | 1,389                                 | 2,064               | + 2                                                 | - 163                               | + 219                             | + 14                                           | 287      | 87                                                                       |
| 1936           | 1,682                                            | 1,334                 | 1,791                                 | 2,101               | + 6                                                 | - 227                               | + 454                             | + 38                                           | 479      | 102                                                                      |
| 1937           | 1,871                                            | 1,270                 | 1,740                                 | 2,187               | - 1                                                 | - 90                                | + 157                             | - 3                                            | 549      | 111                                                                      |
| 1938           | 1,869                                            | 1,323                 | 1,781                                 | 2,221               | - 3                                                 | - 240                               | + 276                             | + 30                                           | 565      | 98                                                                       |
| 1939           | 1,967                                            | 1,450                 | 1,983                                 | 2,267               | + 2                                                 | - 192                               | + 245                             | + 21                                           | 584      | 102                                                                      |
| 1940           | 2,130                                            | 1,482                 | 2,390                                 | 2,360               | + 2                                                 | - 148                               | + 420                             | + 96                                           | 754      | 110                                                                      |
| 1941           | 2,451                                            | 1,738                 | 2,893                                 | 2,425               | + 4                                                 | - 596                               | + 1,000                           | + 227                                          | 930      | 134                                                                      |
| 1942           | 2,170                                            | 3,630                 | 4,356                                 | 2,609               | + 107                                               | - 1,980                             | + 2,826                           | + 643                                          | 1,232    | 164                                                                      |
| 1943           | 2,106                                            | 6,235                 | 5,998                                 | 3,226               | + 214                                               | - 3,751                             | + 4,486                           | + 708                                          | 1,462    | 165                                                                      |
| 1944           | 2,254                                            | 8,263                 | 6,950                                 | 4,144               | + 98                                                | - 3,534                             | + 4,483                           | + 789                                          | 1,706    | 237                                                                      |
| 1945           | 2,663                                            | 10,450                | 8,203                                 | 5,211               | - 76                                                | - 3,743                             | + 4,682                           | + 545                                          | 2,033    | 290                                                                      |
| 1946           | 4,068                                            | 8,426                 | 8,821                                 | 5,797               | + 9                                                 | - 1,607                             | + 1,329                           | + 326                                          | 2,094    | 298                                                                      |
| 1947           | 5,363                                            | 7,243                 | 8,928                                 | 6,006               | - 302                                               | - 443                               | + 630                             | - 206                                          | 2,202    | 326                                                                      |
| 1948           | 5,056                                            | 6,398                 | 8,736                                 | 6,062               | + 17                                                | + 472                               | - 482                             | - 209                                          | 2,402    | 356                                                                      |
| 1947           |                                                  |                       |                                       |                     |                                                     |                                     |                                   |                                                |          |                                                                          |
| November       | 5,240                                            | 7,361                 | 8,797                                 | 5,922               | - 4                                                 | 0                                   | + 33                              | + 3                                            | 2,130    | 344                                                                      |
| December       | 5,363                                            | 7,243                 | 8,928                                 | 6,005               | - 25                                                | - 5                                 | + 49                              | - 18                                           | 2,202    | 365                                                                      |
| 1948           |                                                  |                       |                                       |                     |                                                     |                                     |                                   |                                                |          |                                                                          |
| January        | 5,413                                            | 7,264                 | 8,854                                 | 6,021               | + 14                                                | + 48                                | - 253                             | - 113                                          | 2,113    | 352                                                                      |
| February       | 5,467                                            | 7,021                 | 8,495                                 | 6,063               | + 20                                                | + 153                               | - 244                             | - 2                                            | 2,045    | 347                                                                      |
| March          | 5,510                                            | 6,945                 | 8,452                                 | 6,044               | - 49                                                | + 29                                | - 19                              | - 37                                           | 2,066    | 353                                                                      |
| April          | 5,509                                            | 6,943                 | 8,461                                 | 6,019               | + 9                                                 | - 75                                | + 29                              | - 17                                           | 2,048    | 342                                                                      |
| May            | 5,569                                            | 6,883                 | 8,445                                 | 6,008               | + 30                                                | - 14                                | + 45                              | + 26                                           | 2,061    | 348                                                                      |
| June           | 5,598                                            | 6,859                 | 8,464                                 | 6,057               | - 14                                                | - 50                                | + 28                              | - 13                                           | 2,075    | 354                                                                      |
| July           | 5,640                                            | 6,816                 | 8,556                                 | 6,010               | + 15                                                | - 38                                | + 43                              | + 17                                           | 2,065    | 356                                                                      |
| August         | 5,743                                            | 6,712                 | 8,555                                 | 6,005               | - 23                                                | - 1                                 | + 12                              | + 2                                            | 2,409    | 359                                                                      |
| September      | 5,848                                            | 6,394                 | 8,601                                 | 6,003               | + 17                                                | + 427                               | - 93                              | + 8                                            | 2,351    | 363                                                                      |
| October        | 5,910                                            | 6,440                 | 8,647                                 | 6,018               | + 12                                                | - 8                                 | - 35                              | + 8                                            | 2,323    | 355                                                                      |
| November       | 5,984                                            | 6,358                 | 8,658                                 | 5,998               | - 25                                                | - 40                                | + 7                               | - 8                                            | 2,420    | 390                                                                      |
| December       | 6,056                                            | 6,368                 | 8,736                                 | 6,062               | + 11                                                | - 2                                 | + 45                              | - 61                                           |          |                                                                          |

<sup>1</sup> All monthly indexes but wheat flour, petroleum, copper, lead, and retail food prices are adjusted for seasonal variation. Excepting for department store statistics, all indexes are based upon data from outside sources, as follows: Lumber, various lumber trade associations; Petroleum, Cement, Copper, and Lead, U.S. Bureau of Mines; Wheat flour, U.S. Bureau of the Census; Electric power, Federal Power Commission; Manufacturing employment, U.S. Bureau of Labor Statistics and cooperating state agencies; Factory payrolls, California State Division of Labor Statistics and Research; Retail food prices, U.S. Bureau of Labor Statistics; and Carloadings, various railroads and railroad associations. <sup>2</sup> Daily average. <sup>3</sup> Not adjusted for seasonal variation.

<sup>4</sup> Excludes fish, fruit, and vegetable canning. Factory payrolls index covers wage earners only. <sup>5</sup> At retail, end of month or year. <sup>6</sup> Los Angeles, San Francisco, and Seattle indexes combined. <sup>7</sup> Annual figures are as of end of year; monthly figures as of last Wednesday in month or, where applicable, as of call report date. <sup>8</sup> End of year and end of month figures. <sup>9</sup> Demand deposits, excluding interbank and U.S. Gov't deposits, less cash items in process of collection. Monthly data partly estimated. <sup>10</sup> Changes from end of previous month or year. <sup>11</sup> Minus sign indicates flow of funds out of the District in the case of commercial operations, and excess of receipts over disbursements in the case of Treasury operations. <sup>12</sup> Debits to total deposit accounts, excluding inter-bank deposits. <sup>p</sup>—preliminary. <sup>r</sup>—revised.