BUSINESS REVIEW

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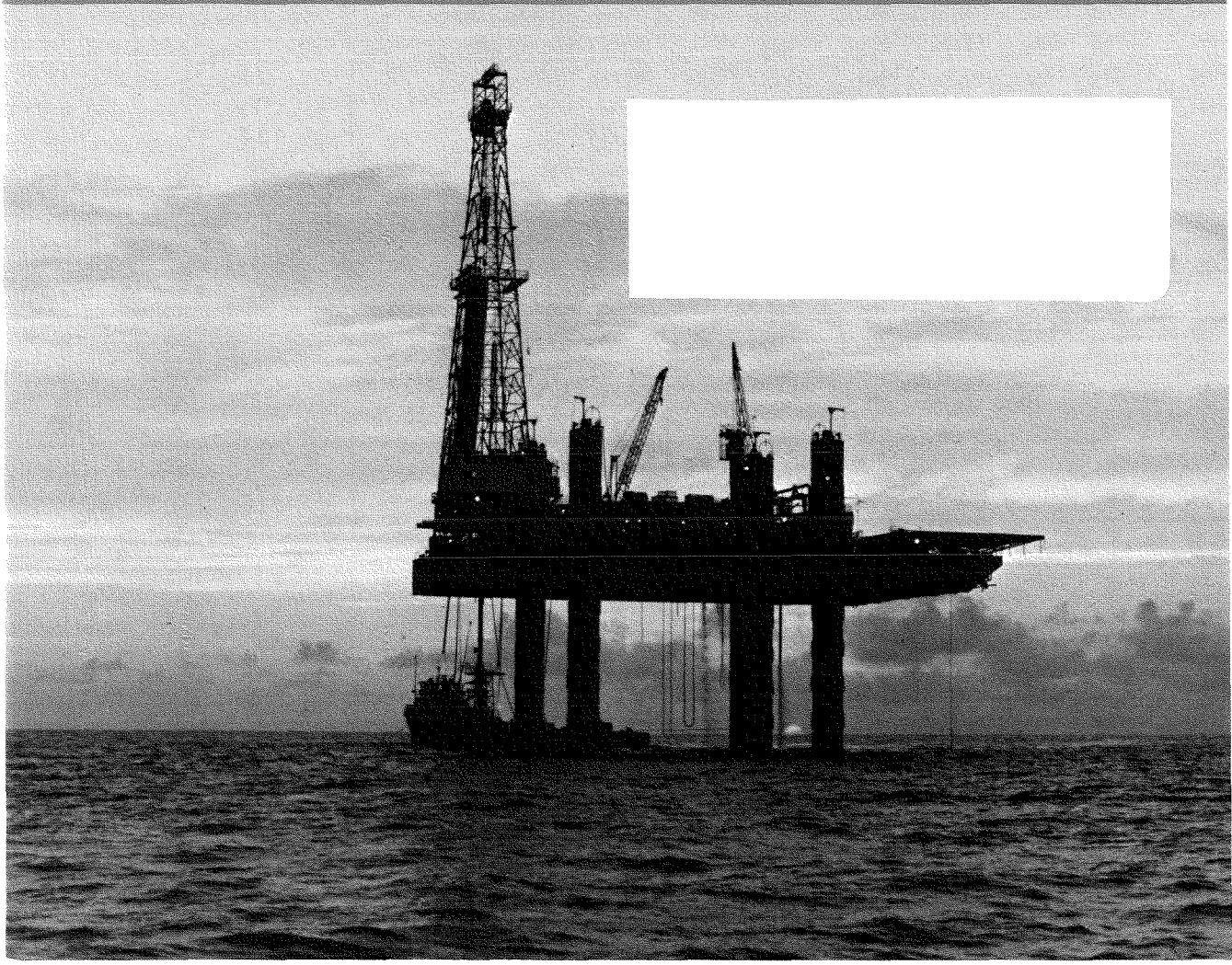
FEDERAL RESERVE BANK OF SAN FRANCISCO

WESTERN ENERGY AND GROWTH



Western Manufacturing Production

Joan Walsh

As an aid to regional economic analysis, this bank's research staff has developed in recent years a manufacturing-production index for the nine-state San Francisco Federal Reserve District. (The district is composed of Alaska, most of Arizona, California, Hawaii, Idaho, Nevada, Oregon, Utah and Washington.) This article summarizes the broad trends revealed by the index, as revised recently to incorporate 1972 Census data.

The foundation of this regional-manufacturing series is provided by Census Bureau data on value added by manufactures. By 1972, the West had grown to account for 12.6 percent of all manufacturing value added. Eight industries—centered around aerospace, food processing, forest products and metals—accounted for 72 percent of the West's value added in 1972. (The same industries accounted for 60 percent of the national total.) Because of the relatively strong performance of these key industries—except food processing—manufacturing production in the West increased at a 5.4-percent annual rate between 1964 and 1974, compared with a 4.3-percent rate of gain nationwide (see table and charts).

Series revision

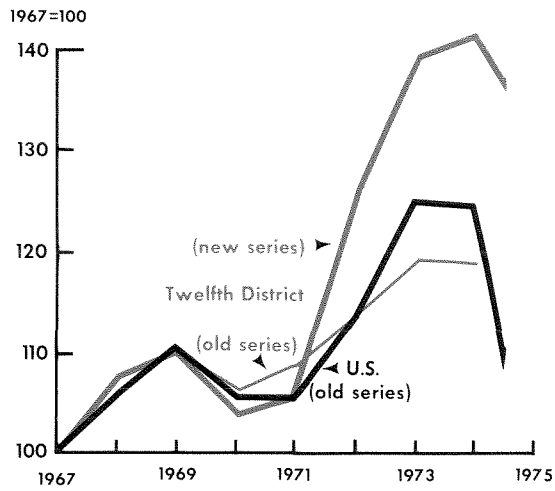
Monthly indexes have been calculated for total manufacturing and 19 two-digit Standard Industrial Classification (SIC) codes, and are available in seasonally adjusted form with 1967 as the base year. The series cover the period June 1963 to date, and are published in the bimonthly *Western Economic Indicators*. A technical paper presenting details of the index construction is available on request from the bank's Research and Public Information Department.

The indexes shown here differ in several important respects from those previously published in *Western Economic Indicators*. The methodology has been simplified and value-added data from the 1972 Census of Manufacturers have been incorporated. Comparisons with U.S. production series are shown, but they are somewhat imprecise because 1972 Census data are not yet included in the national series; judging from the effect of revision on the regional series, the national series might show a significant increase in the early 1970's.

Other changes have been caused by the 1972 revision of the SIC manual. In most cases, the reclassification did not alter coverage at the two-digit industry level, except for the elimination of SIC 19 (ordnance and accessories) and its redistribution among SIC codes 34, 37 and 38. That shift caused value added in SIC 38

Chart 1

Manufacturing Production Index



(instruments and related products) to double between 1971 and 1972, but other industries were relatively unaffected.

Industry highlights

Transportation equipment (SIC 37)—This industry accounts for 18.8 percent of the region's value added, compared with an 11.2-percent share nationwide. Growth was much stronger in the West than elsewhere in the nation over the past decade. Aircraft production has dominated the regional industry, accounting for more than four-fifths of the total, or twice its relative share in the national industry. The auto strikes of 1964 and 1970 thus did not affect the regional series as much as the national series. On the other hand, post-1969 cutbacks in defense spending and reductions in commercial-aircraft orders showed up in a precipitate drop in Western production. The oil embargo and ensuing recession showed up in both the regional and national statistics, with especially sharp declines in early 1974 and early 1975—in both autos and aircraft—being followed by a more recent upturn.

Food and kindred products (SIC 20)—This industry accounts for 13.4 percent of the region's value added, compared with a 10.2 percent share nationwide. Production increased at a moderate pace between 1964 and 1974. Movements in the index reflect the regional importance of canned, cured and frozen food products, which account for almost one-third of the Western total—twice their national share. West-

MANUFACTURING VALUE ADDED AND PRODUCTION INDEX

SIC Code	Industry	Value Added (1972) West $ Millions	Value Added (1972) West Percent Distrib.	Value Added (1972) U.S. $ Millions	Value Added (1972) U.S. Percent Distrib.	Annual Growth (1964-74) West Percent	Annual Growth (1964-74) U.S. Percent
19	Ordnance and accessories	—	—	4,858	1.4	—	—
20	Food and kindred products	5,863	13.4	35,399	10.2	3.1	3.5
21	Tobacco products	—	—	2,704	0.8	—	—
22	Textiles	265	0.6	11,366	3.2	9.7	3.4
23	Apparel	1,106	2.5	13,197	3.8	6.3	1.1
24	Lumber and wood products	3,970	8.9	7,861	2.3	4.5	2.8
25	Furniture and fixtures	732	1.7	6,012	1.7	5.6	4.0
26	Paper and allied products	1,587	3.6	13,181	3.8	4.6	4.5
27	Printing and publishing	2,273	5.2	19,250	5.5	5.2	2.9
28	Chemicals and allied products	2,238	5.1	33,081	9.5	6.5	7.6
29	Petroleum and coal products	915	2.1	5,841	1.7	2.2	3.2
30	Rubber and plastic products	1,049	2.4	11,013	3.2	13.2	8.2
31	Leather and products	54	0.1	2,971	0.8	–4.0	–2.6
32	Stone, clay and glass products	1,572	3.6	12,092	3.5	3.3	2.7
33	Primary metals products	2,009	4.6	23,405	6.7	2.8	2.5
34	Fabricated metal products	2,754	6.3	24,047	6.9	5.6	4.6
35	Nonelectrical machinery	3,495	8.0	36,114	10.4	6.8	5.8
36	Electrical machinery	3,818	8.7	30,455	8.8	4.6	5.6
37	Transportation equipment	8,280	18.8	39,131	11.2	6.5	2.0
38	Instruments and products	1,238	2.8	9,510	2.7	15.9	7.3
39	Miscellaneous manufacturing	688	1.6	6,558	1.9	7.4	5.6
	Manufacturing total	43,906	100.0	348,048	100.0	5.4	4.3

Note: Growth trends not strictly comparable because U.S. index has not yet been updated to include 1972 Census data.

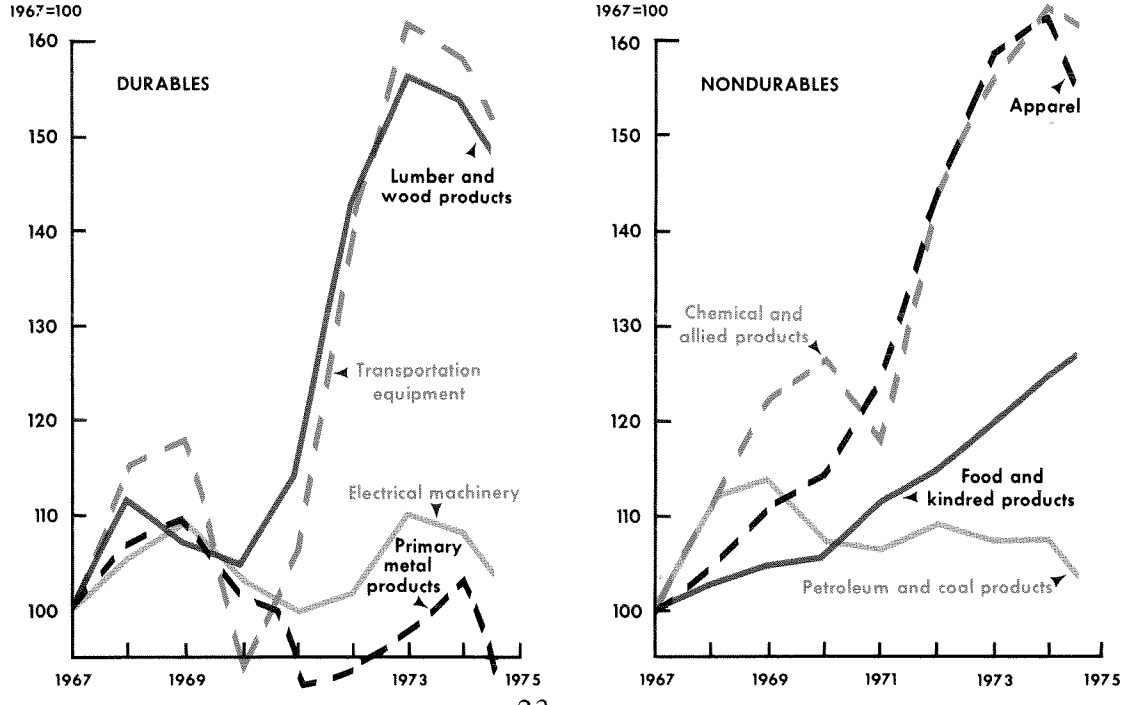
ern output rose along with the national industry over most of the past decade, but the different structure of the regional industry has strongly affected the series in certain periods, such as 1970-72. In that period Western fruit and vegetable processors suffered supply losses because of poor weather, while producers elsewhere in the nation benefited from very heavy demand for their most important commodities (grains and meat products). More recently, Western food-processing output has outpaced the nation because of the strong increase in Northwest grain production and the heavy liquidation of cattle supplies. Incidentally, erratic movements in the index sometimes have arisen because of strikes but also because of changes in the timing of the harvest.

Lumber and wood products (SIC 24); paper and products (SIC 26)—These two forest-product industries together account for 12.5 percent of the region's value added, compared with a 6.1-percent share nationwide. Production increased moderately over the past decade, and was somewhat stronger in the West than elsewhere, at least in the lumber industry. The lumber series has been affected by erratic movements attributable to labor disputes and weather problems, but above all by periodic booms and slumps in national housing demand, most notably in the past two years. (In early 1975, however, the regional series showed a healthy rebound which was not reflected in the national figures.) The paper series has been affected by similar erratic movements and also by national business-cycle fluctuations. Western production fell steeply in late 1974 and early 1975—although not so steeply as elsewhere—and in recent months an upturn has occurred in corrugated-box production, a useful leading indicator of general business activity.

Primary metals (SIC 33); fabricated metal products (SIC 34)—These two industries together account for 10.9 percent of the region's value added, compared with a 13.6-percent share nationwide. Primary-metal output grew slowly everywhere over the past decade, while

Chart 2

Western Manufacturing Production Index



fabricated-metals production rose strongly, especially in the West. Western primary production has been concentrated in the smelting and refining of nonferrous metals, with the region accounting for almost two-thirds of the nation's copper output and about one-fourth of total aluminum output. Steel production has been much less important here than elsewhere, and steel-strike activity has failed to affect the regional index as much as the national series. But both the regional and national indexes have been strongly affected over the past year by the severe cyclical declines in auto and construction demand. The substantial long-term growth in the regional segment of the fabricated-metals industry meanwhile has stemmed from the West's concentration in markets with strong long-term growth records, such as structural products and metal cans, and its relative unimportance in one severely depressed market, metal stampings for the auto industry.

Electrical machinery (SIC 36)—This industry accounts for 8.7 percent of the region's value added, compared with a comparable 8.8-percent share nationwide. The industry grew moderately in the West over the past decade, but at a more rapid pace elsewhere, with a prolonged decline in the Western-oriented space program helping to account for the differential. The regional industry is concentrated in communications equipment, electronic components and electrical-testing equipment, while the industry elsewhere is centered around production of household appliances and radio and TV sets. The recession decline has been severe both regionally and nationally.

Nonelectrical industry (SIC 35)—This industry accounts for 8.0 percent of the region's value added, compared with a 10.4-percent share nationally. The industry grew vigorously over the past decade, especially in the West. Much of this performance was due to a substantial rise in regional production of office machines and electronic computing equipment, which compared with the more diverse product mix of the national industry. Output has shown wide cyclical fluctuations, most notably in the still continuing business downturn.

Erratum

In the article "International Money and International Inflation: 1958-1973" by Edward S. Shaw in the Spring 1975 issue equation 7 should read:

$$(7) \qquad t^u = \frac{t}{s_u} - \frac{s_0(t^0)}{s_u}$$

Also, the third sentence in the last full paragraph on page 7 should read: Given (t) and the international pattern of demand for real money, (m_s^u) is determined partly by the portfolio choices of foreign monetary authorities.