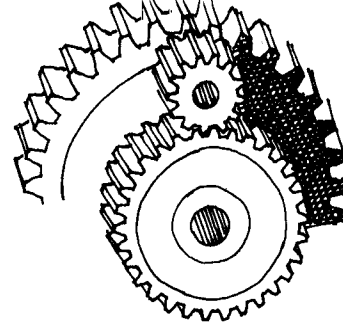


# Productivity Reports



## Productivity slows or drops in 1979 in more than half of industries measured

ARTHUR S. HERMAN

Productivity, as measured by output per employee hour, declined or grew at a lower rate in 1979 than in 1978 in more than half of the industries surveyed by the Bureau of Labor Statistics. However, during 1974-79, more than half of the industries reported productivity gains. Over the long-term (1947- or 1958-79), all of the industries posted gains.

### Changes in 1979

Most mining, retail trade, and service industries posted declines, as did some transportation and large manufacturing industries. Conversely, gains were recorded in a few of the larger industries, including air transportation and telephone communications, and in a majority of the manufacturing industries covered. The slowdown is consistent with productivity in the non-farm business sector, which declined 0.8 percent during the year. Table 1 shows productivity trends in industries measured by the Bureau, including new measures for the fabricated structural metal, construction machinery, drug and proprietary stores, ball and roller bearings, and bus carrier industries.<sup>1</sup> Also included, for the first time, is a series for electric utilities and gas utilities. These indexes were developed by disaggregating the existing measure for gas and electric utilities.

**Manufacturing.** Both steel and motor vehicles, which are among the larger industries covered, had productivity declines in 1979. In the steel industry, productivity fell 1.3 percent as output dropped 0.3 percent and employee hours went up 1.0 percent. Demand for steel was strong in the first half of the year, but fell off sharply in the second half. In the motor vehicles industry, productivity declined for the second consecutive year, falling 3.7 percent, as output declined more than employee hours. Motor vehicle production was high in the first

quarter, but demand began to fall in the second quarter, in part, because of lower supplies and higher prices for petroleum; as a result, output decreased sharply during the remainder of the year. Other large manufacturing industries posting productivity declines in 1979 were: sawmills, -3.1 percent; petroleum refining, -2.2 percent; gray iron foundries, -0.8 percent; pulp and paper, -0.4 percent; and construction machinery, -0.3 percent. These industries, except paper, had declines in output in 1979.

These large manufacturing industries posted productivity gains in 1979: fabricated structural metal, 6.0 percent; fluid milk, 5.3 percent; motors and generators, 3.6 percent; household appliances, 3.0 percent; tires, 2.9 percent; household furniture, 2.8 percent; bakery products, 1.6 percent; footwear, 1.1 percent; soft drinks, 0.9 percent; and corrugated boxes and pharmaceutical preparations, 0.5 percent each.

**Transportation.** The productivity situation was mixed among transportation industries. Intercity trucking declined 1.2 percent, and railroads (revenue traffic) dropped 0.1 percent. Conversely, air transportation posted a gain in productivity of 3.4 percent as output increased strongly, petroleum pipelines grew 2.2 percent, and bus carriers increased 0.4 percent.

**Utilities.** In utilities, the gas and electric industry posted its second consecutive productivity decline, dropping 0.5 percent. Both the gas and the electric utility components of this industry had productivity declines in 1979. Telephone communications registered a gain of 3.6 percent, with output continuing its high rate of growth.

**Mining.** Most mining industries experienced productivity declines. Coal mining dropped 9.5 percent. Although coal output posted a significant gain, production worker hours grew even more as the industry recovered from a major strike in 1978. Copper mining (recoverable metal) and nonmetallic minerals recorded large productivity declines of 10.0 and 3.7 percent, respectively. In contrast, iron mining (usable ore) grew 6.9 percent as output posted an above-average gain.

**Trade and services.** Productivity declined in most retail trade and service industries, with laundry and cleaning

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**Table 1. Indexes of output per employee hour in selected industries, 1973-79, and percent changes, 1978-79 and 1974-79**

SIC Code <sup>1</sup>	Industry	1973	1974	1975	1976	1977	1978	1979 <sup>2</sup>	Percent change 1978-79	Average annual percent change 1974-79
<b>Mining<sup>3</sup></b>										
1011	Iron mining, crude ore	130.6	124.0	129.7	130.6	126.0	135.1	147.0	8.8	2.7
1011	Iron mining, usable ore	123.6	114.2	118.6	116.8	110.5	121.4	129.9	6.9	1.9
1021	Copper mining, crude ore	118.6	114.7	122.2	140.5	145.4	158.6	148.6	-6.3	6.2
1021	Copper mining, recoverable metal	97.8	86.9	91.3	110.6	117.1	125.2	112.7	10.0	6.8
111, 121	Coal mining	85.8	84.1	72.7	71.4	69.5	76.1	68.8	-9.5	2.5
121	Bituminous coal and lignite mining	85.9	83.9	72.1	70.8	69.0	75.8	68.2	10.0	2.6
14	Nonmetallic minerals	128.5	123.3	120.7	126.4	130.4	136.6	131.5	3.7	2.1
142	Crushed and broken stone	141.6	138.6	139.6	140.2	148.0	161.7	150.1	-7.2	2.6
<b>Manufacturing</b>										
2026	Fluid milk	140.1	143.6	150.3	156.1	156.1	165.8	174.7	5.3	3.7
203	Preserved fruits and vegetables	125.6	123.0	124.9	132.7	131.9	135.5	( <sup>4</sup> )	( <sup>4</sup> )	<sup>5</sup> 2.5
2033	Canned fruits and vegetables	130.3	128.1	126.0	138.9	135.2	138.6	( <sup>4</sup> )	( <sup>4</sup> )	<sup>5</sup> 2.3
204	Grain mill products	116.1	124.4	125.5	131.0	137.5	136.2	( <sup>4</sup> )	( <sup>4</sup> )	<sup>5</sup> 2.8
2041	Flour and other grain mill products	113.7	119.2	120.8	119.7	140.3	144.7	150.2	3.8	5.4
2043	Cereal breakfast foods	111.0	105.3	107.7	112.8	112.2	111.8	( <sup>4</sup> )	( <sup>4</sup> )	<sup>5</sup> 1.6
2044	Rice milling	100.3	115.2	111.7	109.7	123.8	114.6	( <sup>4</sup> )	( <sup>4</sup> )	<sup>5</sup> 0.9
2045	Blended and prepared flour	103.5	116.4	104.6	108.0	95.2	87.5	( <sup>4</sup> )	( <sup>4</sup> )	<sup>5</sup> 6.4
2046	Wet corn milling	123.3	150.6	152.7	168.7	198.3	203.3	( <sup>4</sup> )	( <sup>4</sup> )	<sup>5</sup> 9.0
2047, 48	Prepared feeds for animals and fowls	118.5	127.1	129.5	136.9	140.9	138.7	( <sup>4</sup> )	( <sup>4</sup> )	<sup>5</sup> 2.6
205	Bakery products	113.1	112.9	112.7	111.8	120.1	116.8	118.6	1.6	1.2
2061, 62, 63	Sugar	114.0	110.0	108.1	111.4	118.9	117.1	131.0	11.8	3.4
2061, 62	Raw and refined cane sugar	105.6	103.7	97.8	102.0	113.7	110.3	( <sup>4</sup> )	( <sup>4</sup> )	<sup>5</sup> 2.8
2063	Beet sugar	127.2	119.7	124.3	128.6	126.2	127.6	( <sup>4</sup> )	( <sup>4</sup> )	<sup>5</sup> 1.4
2065	Candy and confectionery products	137.3	149.0	136.0	126.9	149.4	161.5	( <sup>4</sup> )	( <sup>4</sup> )	<sup>5</sup> 2.6
2082	Malt beverages	153.2	157.2	175.3	192.9	199.6	201.3	203.0	0.9	5.1
2086	Bottled and canned soft drinks	117.3	119.9	129.6	139.7	147.7	154.3	155.6	0.9	5.5
2111, 21, 31	Tobacco products - total	108.1	111.9	114.2	119.3	122.4	125.0	127.6	2.1	2.8
2111, 31	Cigarettes, chewing and smoking tobacco	104.9	106.5	110.3	114.1	117.5	122.0	122.7	0.5	3.0
2121	Cigars	116.8	128.6	126.5	137.1	139.8	137.0	148.4	8.3	2.8
2251, 52	Hosiery	147.7	168.5	191.6	219.5	208.6	209.5	236.5	12.9	5.6
2421	Sawmills and planing mills, general	112.9	108.2	112.7	118.2	115.3	116.4	112.8	3.1	0.8
2435, 36	Veneer and plywood	126.7	127.4	142.2	142.4	147.2	147.4	( <sup>4</sup> )	( <sup>4</sup> )	<sup>5</sup> 3.3
251	Household furniture	123.3	121.2	123.6	126.3	126.7	131.9	135.6	2.8	2.2
2511, 17	Wood household furniture	127.9	122.8	120.5	124.4	122.9	127.6	( <sup>4</sup> )	( <sup>4</sup> )	<sup>5</sup> 1.0
2512	Upholstered household furniture	113.7	114.2	120.8	122.2	124.6	136.1	( <sup>4</sup> )	( <sup>4</sup> )	<sup>5</sup> 3.9
2514	Metal household furniture	119.9	114.3	119.0	121.7	126.2	122.8	( <sup>4</sup> )	( <sup>4</sup> )	<sup>5</sup> 2.0
2515	Mattresses and bedsprings	138.3	147.8	152.7	156.7	158.8	161.4	( <sup>4</sup> )	( <sup>4</sup> )	<sup>5</sup> 2.2
2611, 21, 31, 61	Paper, paperboard and pulp mills	135.4	135.2	128.0	140.2	147.3	152.9	152.3	0.4	3.4
2643	Paper and plastic bags	125.1	131.8	133.6	135.0	134.6	134.8	( <sup>4</sup> )	( <sup>4</sup> )	<sup>5</sup> 0.5
2651	Folding paperboard boxes	114.1	120.4	119.9	124.4	120.3	122.3	127.5	4.2	0.9
2653	Corrugated and solid fiber boxes	130.2	137.7	142.2	148.0	144.0	149.0	149.9	0.5	1.5
2823, 24	Synthetic fibers	176.8	173.1	187.2	198.4	221.0	231.7	251.9	8.7	7.8
2834	Pharmaceutical preparations	132.1	141.3	145.2	155.2	158.2	149.6	150.3	0.5	1.2
2841	Soap and detergents	127.5	132.7	123.3	127.0	127.0	132.0	( <sup>4</sup> )	( <sup>4</sup> )	<sup>5</sup> 0.2
2851	Paints and allied products	112.1	123.7	129.1	133.2	137.2	144.2	150.9	4.6	4.0
2911	Petroleum refining	132.4	121.4	123.7	128.3	136.8	138.2	135.1	2.2	2.7
3011	Tires and inner tubes	116.7	116.3	115.7	127.6	130.0	139.9	143.9	2.9	4.8
314	Footwear	102.0	100.3	104.8	105.5	103.3	106.0	107.1	1.1	1.0
3221	Glass containers	112.9	121.6	120.9	121.2	124.0	125.8	127.1	1.1	1.1
3241	Hydraulic cement	129.7	119.0	110.6	120.7	131.6	132.4	128.5	-2.9	2.9
325	Structural clay products	131.7	134.6	132.0	138.3	146.1	145.9	147.8	1.3	2.4
3251, 53, 59	Clay construction products	133.0	130.7	132.2	140.2	149.2	148.1	148.2	0.1	3.0
3251	Brick and structural clay tile	128.6	132.3	133.7	147.2	144.5	134.4	130.0	3.3	0.3
3253	Ceramic wall and floor tile	133.5	128.1	131.8	131.6	149.9	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	<sup>6</sup> 4.8
3255	Clay refractories	125.6	143.9	127.6	130.3	134.1	136.3	142.7	4.7	0.5
3271, 72	Concrete products	115.9	116.4	113.3	116.3	120.5	120.1	( <sup>4</sup> )	( <sup>4</sup> )	<sup>5</sup> 1.3
3273	Ready-mixed concrete	109.0	105.7	102.7	104.0	105.3	108.7	( <sup>4</sup> )	( <sup>4</sup> )	<sup>5</sup> 0.8
331	Steel	123.5	123.5	107.6	114.5	115.6	125.7	124.0	-1.3	1.4
3321	Gray iron foundries	124.2	128.0	126.7	125.6	130.4	134.0	133.0	0.8	1.1
3324, 25	Steel foundries	107.6	118.5	113.6	111.5	105.9	103.4	101.6	-1.7	3.1
3331, 32, 33	Primary copper, lead, and zinc	140.6	127.6	126.4	142.7	148.6	143.9	149.2	3.7	3.5
3331	Primary copper	129.6	116.1	118.7	136.3	143.7	143.4	146.4	2.1	5.2
3334	Primary aluminum	111.1	122.8	105.8	110.8	108.8	108.4	112.0	3.3	-1.1
3351	Copper rolling and drawing	117.7	106.3	94.7	105.4	120.7	117.1	121.4	3.7	4.2
3353, 54, 55	Aluminum rolling and drawing	154.7	157.9	142.5	166.0	163.7	168.7	161.7	-4.2	1.8
3411	Metal cans	109.2	113.3	116.0	124.6	131.7	136.1	( <sup>4</sup> )	( <sup>4</sup> )	<sup>5</sup> 5.1
3441	Fabricated structural metal	116.5	109.7	99.4	100.3	100.8	101.8	107.8	6.0	( <sup>7</sup> )
3531	Construction machinery	113.2	119.9	111.6	113.4	117.1	120.1	119.7	-0.3	0.7
3562	Ball and roller bearings	119.4	121.1	113.4	115.3	116.8	122.6	120.6	-1.6	0.7
3621	Motors and generators	115.4	114.8	106.7	109.9	114.3	113.1	117.3	3.6	0.9
3631, 32, 33, 39	Major household appliances	135.1	134.9	140.7	145.2	149.8	150.5	155.0	3.0	2.7
3631	Household cooking equipment	134.9	138.4	152.8	156.1	153.6	152.8	142.0	7.1	0.3

**Table 1. Continued—Indexes of output per employee hour in selected industries**

SIC Code <sup>1</sup>	Industry	1973	1974	1975	1976	1977	1978	1979 <sup>2</sup>	Percent change 1978-79	Average annual percent change 1974-79
3632	Household refrigerators and freezers .....	141.3	143.1	139.9	139.6	148.4	145.5	170.2	17.0	3.0
3633	Household laundry equipment .....	131.5	126.0	138.5	145.9	147.4	152.8	153.3	0.3	3.7
3639	Household appliances n.e.c. ....	126.7	125.9	132.9	140.3	151.2	156.0	149.2	-4.4	4.1
3641	Electric lamps .....	104.0	104.5	113.3	121.9	119.6	123.2	127.9	3.8	3.6
3645, 46, 47, 48	Lighting fixtures .....	126.0	120.8	118.9	126.6	132.5	132.9	( <sup>4</sup> )	( <sup>4</sup> )	<sup>5</sup> 3.0
3651	Radio and television receiving sets .....	128.7	124.4	125.7	137.3	132.9	146.4	150.7	2.9	4.0
371	Motor vehicles and equipment .....	123.9	118.8	127.1	136.0	145.1	144.0	138.7	-3.7	3.5
	<b>Other</b>									
401	Railroads, revenue traffic .....	133.2	129.6	123.9	131.9	138.4	148.6	148.5	-0.1	3.7
401	Railroads, car-miles .....	119.2	116.2	115.5	117.5	117.5	124.0	122.6	-1.1	1.4
4111, 31, 414	Bus carriers, class I .....	92.5	95.9	84.5	81.7	87.1	86.8	87.2	0.4	-0.9
4213 PT	Intercity trucking <sup>8</sup> .....	123.4	119.3	114.1	128.2	127.9	127.6	126.1	-1.2	1.8
4213 PT	Intercity trucking (general freight) <sup>8</sup> .....	122.1	124.3	117.6	127.9	133.2	131.3	128.7	-2.0	1.6
4511	Air transportation <sup>8</sup> .....	131.3	133.0	134.6	146.7	153.6	167.9	173.6	3.4	6.0
4612, 13	Petroleum pipelines .....	150.4	146.6	147.4	146.6	154.0	156.7	160.2	2.2	1.9
4811	Telephone communications .....	128.8	137.3	149.6	165.8	175.9	187.6	194.3	3.6	7.3
491, 92, 93	Gas and electric utilities .....	129.9	127.5	131.9	135.8	137.8	136.2	135.5	-0.5	1.2
491, 493 PT	Electric utilities .....	135.8	133.7	141.4	146.2	152.2	148.0	147.3	-0.4	1.9
492, 493 PT	Gas utilities .....	117.9	115.1	114.4	116.9	112.9	114.6	114.5	-0.1	-0.2
54	Retail food stores <sup>9</sup> .....	108.1	104.5	104.8	107.0	106.4	100.9	100.2	-0.8	-0.9
5511	Franchised new car dealers .....	119.2	116.2	120.5	126.9	131.2	128.5	122.5	-4.7	1.4
5541	Gasoline service stations <sup>9</sup> .....	136.6	140.5	137.8	151.8	160.9	168.3	169.4	0.6	4.7
58	Eating and drinking places <sup>9</sup> .....	105.9	100.8	102.0	101.8	98.9	94.6	89.5	-5.5	-2.4
591	Drug stores <sup>9</sup> .....	146.2	149.4	144.8	150.6	156.7	152.4	153.6	0.8	1.0
7011	Hotels and motels <sup>9</sup> .....	108.7	103.2	101.9	106.9	106.8	109.1	102.8	-5.8	0.5
721	Laundry and cleaning services <sup>9</sup> .....	104.0	103.9	103.0	104.5	108.0	108.7	101.8	-6.3	0.3

<sup>1</sup> As defined in the 1972 *Standard Industrial Classification Manual*, published by the Office of Management and Budget.

<sup>2</sup> Preliminary.

<sup>3</sup> Mining data refer to output per production worker hour.

<sup>4</sup> Not available.

<sup>5</sup> Rate of change is for 1974-78.

<sup>6</sup> Rate of change is for 1974-77.

<sup>7</sup> Less than 0.05 percent.

<sup>8</sup> Output per employee.

<sup>9</sup> Output per hour of all persons.

NOTE: Although the output per employee-hour measures relate output to the hours of all employees engaged in each industry, they do not measure the specific contributions of labor, capital, or any other single factor of production. Rather, they reflect the joint effects of many influences, including new technology, capital investment, the level of output, capacity utilization, energy use, and managerial skills, as well as the skills and efforts of the work force. Some of these measures use a labor input series that is based on hours paid, and some use a labor input series that is based on plant hours.

services falling 6.3 percent; hotels and motels, 5.8 percent; eating and drinking places, 5.5 percent; and new car dealers, 4.7 percent. These industries, except hotels and motels, had output declines in 1979. Productivity fell 0.8 percent in retail food stores; output rose slightly but was offset by a greater rise in hours. On the other hand, productivity increased 0.8 percent in drug stores, based on small gains in output and hours, and grew 0.6 percent in gasoline service stations, as hours declined more steeply than output.

### Trends, 1974-79

During 1974-79, the wet corn milling industry had the highest rate of productivity increase, growing 9.0 percent from 1974-78 (1979 data are not yet available). This growth is based on substantial output gains and declining employee hours. Demand for high fructose syrup, an important industry product, continued to expand during this period and the industry invested in more efficient plant and equipment. The second highest rate of productivity growth during 1974-79 was for synthetic fibers (7.8 percent). Output in this industry was sustained by high domestic and foreign demand while the industry's cost cutting operations led to a falloff in employee hours. High growth rates were also

posted by the telephone communications industry, up 7.3 percent; copper mining (recoverable metal), 6.8 percent; and air transportation, 6.0 percent. In telephone communications, productivity growth has been aided by large increases in output and the continuing use of electronic switching equipment for long distance calls. In copper mining (recoverable metal), output grew only slightly; however hours of production workers dropped sharply, in part, because of the closing of inefficient mines. In the air transportation industry, high output growth (because of gains in both passenger travel and freight shipments) coupled with a moderate gain in employment resulted in increased productivity. Other industries with productivity gains of more than 5 percent per year included hosiery, soft drinks, flour milling, malt beverages, and metal cans.

Declining productivity rates were experienced by a number of industries over the 1974-79 period. The blended and prepared flour industry (cake mixes, among other products) posted the largest decline, falling at a 6.4-percent rate. Steel foundries dropped 3.1 percent, coal mining fell 2.5 percent, and eating and drinking places declined 2.4 percent. Smaller declines were experienced by primary aluminum, -1.1 percent; bus carriers and retail food stores, -0.9 percent each;

brick and structural clay tile, -0.3 percent; and gas utilities, -0.2 percent.

A full report, *Productivity Measures for Selected In-*

*dustries, 1954-1979*, Bulletin 2093, is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. □

FOOTNOTE

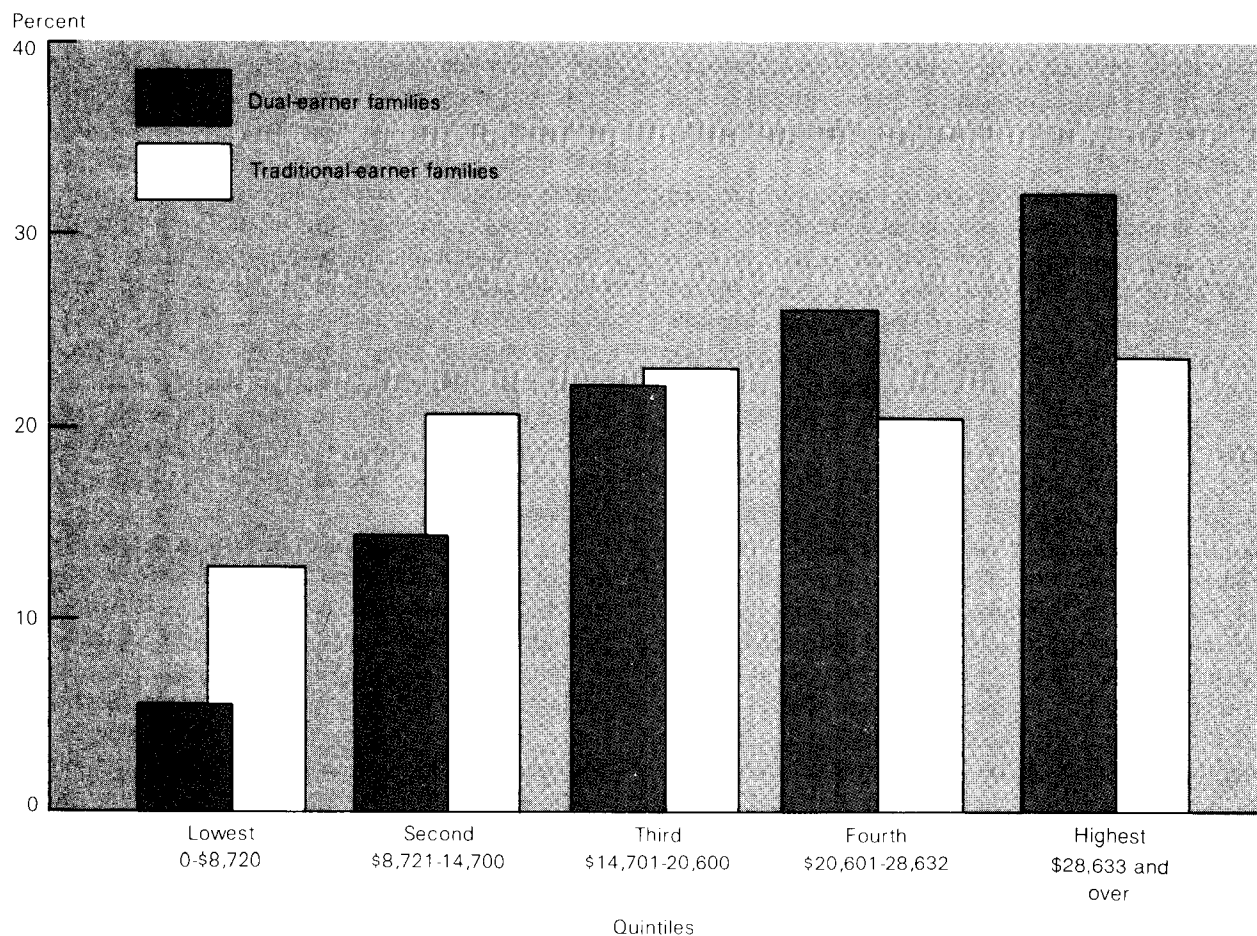
<sup>1</sup> For a detailed report on these industries, see the following *Monthly Labor Review* articles: Horst Brand and Clyde Huffstutler, "The paper and plastic bag industry: two distinct productivity phases," May 1980, pp. 26-30; Phyllis Flohr Otto, "Productivity growth below average in fabricated structural metals," June 1980, pp. 27-31; John Duke "Construction machinery industry posts slow rise in pro-

ductivity," July 1980, pp. 33-36; Brian L. Friedman, "Productivity gains in the drugstore industry, 1958-79," November 1980, pp. 18-22; and James D. York and Elmer S. Persigehl, "Productivity trends in the ball and roller bearing industry," January 1981, pp. 40-43. Productivity trends for Class I bus carriers will be discussed in a forthcoming article.

Erratum

In "Husbands and wives as earners: an analysis of family data," by Howard Hayghe (*Monthly Labor Review*, February 1981), the labels in the legend on chart 1 were inadvertently transposed. A corrected version of the chart appears below.

Chart 1. Distribution of dual-earner and traditional-earner families by family income quintiles, 1978



NOTE: "Dual-earner families" refers to married couples where both husband and wife were earners at sometime during the year. A "traditional-earner family" is one where the husband, but not the wife, was an earner. In both types of families other members may also be earners and there may not be children under age 18.