

# Productivity trends in the furniture and home furnishings stores industry

*Overall output per hour was above average from 1967 to 1985, reflecting a 4.8-percent increase in output and a 1.8-percent rise in employee hours; above-average growth is expected for the near future in this rapidly changing industry*

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Productivity, as measured by output per hour of all persons, grew at an average rate of 3.0 percent in the furniture and home furnishings stores industry from 1967 to 1985.<sup>1</sup> This gain is significantly above the productivity growth rate for the nonfarm business sector of the economy, which was 0.9 percent during the same period. The productivity trend rate in the furniture and home furnishings stores industry reflects an increase in output of 4.8 percent and a gain in hours of all persons averaging 1.8 percent.

Productivity growth in this industry compared favorably with trends in other retail trade industries measured by the Bureau of Labor Statistics. Apparel stores had a slightly higher productivity growth rate of 3.6 percent during 1967–85. However, drug stores had a lower rate of 2.3 percent and retail food stores which posted an actual decline of 0.8 percent in productivity had a significantly lower rate.

The furniture and home furnishings stores industry comprises a variety of different retail stores besides furniture stores. These include stores selling floor coverings, draperies, curtains, upholstery, miscellaneous home furnishings such as glassware, household appliances, radios and televisions, and music and records. Productivity measures have been developed for the furniture and home furnishings stores component of the industry and the appliance,

radio, TV, and music stores component, as well as for the overall industry.

Productivity growth was significantly different in the two components of the industry. Productivity grew at the high rate of 4.6 percent in the appliance, radio, and TV stores component from 1967 to 1985 while increasing at less than half that rate, 1.9 percent, in the furniture and home furnishings component. The appliance, radio, and TV stores component had a significantly higher rate of output growth, 6.6 percent per year, fueled by significant increases in demand for such fast-selling items as microwave ovens, video recorders, color television sets, and personal audio equipment. On the other hand, output of the furniture and home furnishings stores component grew at the slower rate of 3.6 percent over the 1967–85 period. This component of the industry was significantly affected by economic downturns during the period. The growth rate for hours of all persons was relatively similar for the two components of this industry, increasing at a rate of 2.0 percent in appliance, radio, and TV stores and at a rate of 1.6 percent in furniture and home furnishings stores.

## Subperiod trends

Productivity growth can be divided into three periods in the furniture and home furnishings stores industry. From 1967 to 1973, productivity grew at the comparatively high rate of 4.3 percent in the overall industry as output increased at the very high rate of 6.7 percent. The productivity ad-

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vance slowed to a 1.5-percent rate from 1973 to 1978 as output gains also slowed to 3.7 percent per year. From 1978 to 1985, productivity growth picked up to a 3.0-percent rate as output growth increased to 4.5 percent. (See table 1.)

The trends in the overall industry reflected differing productivity and output growth rates in the component industries in the more current periods. In the furniture and home furnishings stores component, productivity experienced a high growth rate of 4.3 percent from 1967 to 1973 as output expanded significantly. Productivity fell to a rate of 1.0 percent from 1973 to 1978 and continued at a 1.3-percent rate in the 1978–85 period. In the appliance, radio, and TV stores component, productivity also grew at a high rate of 4.4 percent from 1967 to 1973 with output increasing at a 6.0-percent rate. From 1973 to 1978, productivity in this component slowed to a rate of 2.2 percent, despite an output growth rate of 5.7 percent. However, productivity growth accelerated in this component to a rate of 5.5 percent from 1978 to 1985, with output up even more. (See table 2.)

### **Cyclical changes**

The two components of this industry were influenced by different economic factors over the period studied. The furniture and home furnishings component was very much affected by cyclical changes in the economy. Expansions or contractions in output and associated changes in productivity in this component can be very closely tied to changes in the growth of new residential construction, because furniture and home furnishings are generally purchased when families move into new homes. In periods when the economy is booming and especially when new residential construction expands rapidly, this component of the industry registers large gains in output and, in turn, significant gains in productivity. Conversely, when the overall economy declines, and especially when new residential construction drops, output in this industry slows or posts declines and productivity also tends to fall off.

This relationship can be seen by examining productivity and output rates during the recessionary and growth periods of the 1970's and the 1980's. In the recession of 1970, new residential construction posted a decline.<sup>2</sup> After recording large gains in output and productivity in 1968, the furniture and home furnishing stores component slowed in 1969 and 1970. Productivity in this part of the industry posted declines of 2.8 percent in 1969 and 0.3 percent in 1970. During the growth period, 1971–73, output in this component expanded significantly. Productivity averaged 7.8 percent over this period. However, this industry component was hit very hard by the recession of 1974–75, when new residential construction plummeted, posting major declines in 1974 and 1975. Output of the furniture and home furnishings stores component fell in 1974 and 1975. Productivity in this component had two consecutive declines, –3.3 percent in 1974 and –3.2 percent in 1975. During the period of economic growth from 1976 to 1979, this component of the

industry posted significant output gains and moderate productivity growth. The recessionary periods of 1980 and 1981–82 had a major impact on this part of the industry. New residential construction fell sharply in 1980 and continued to fall through 1982. The furniture and home furnishings stores component had 3 consecutive years of declining output. Productivity recorded its largest decline over the period measured in 1980, falling 6.5 percent and an additional 3.6 percent in 1982. In the growth period following this recession, output picked up significantly from 1983 to 1985 and productivity posted two good gains.

The appliance, radio, and TV stores component of the industry was not as much affected by cyclical changes. While trends in the sales of most appliances tend to move in a similar direction as furniture and home furnishings, sales of the other items sold by this component of the industry do not. Radios, televisions, video recorders, records, and tapes tended to have different growth patterns than furniture over the 1967–85 period. There was a boom in demand for these items, especially toward the latter part of the period. Even among appliances, the vigorous expansion in the sale of microwave ovens tended to produce countercyclical forces. In fact, there was only one year of output decline in this component over the 1967–85 period.

In the recession year of 1970, for example, the appliance, radio, and TV stores component posted a strong output gain of 6.1 percent. In the 1974–75 recession, output grew in both years, although productivity posted a decline of 2.4 percent in 1974. In the recessionary periods of 1980 and 1981–82, output increased both in 1980 and 1981. In 1982, however, this component posted its only output decline over the period measured, –1.7 percent. Productivity also declined in 1982, falling 2.9 percent. After the poor showing in 1982, sales accelerated. Output in this component averaged 16.0 percent from 1983 to 1985, and productivity posted three continuous gains.

The sustained growth in output of stores in this component of the industry during the period measured can be attributed to the boom in home electronic equipment sales. Such items as video recorders, video cameras, personal size stereo radio and tape players (boom boxes and minis), miniaturized television sets, color TV's, compact disc players, and high fidelity audio equipment, as well as records and tapes which are played on this equipment, experienced significant growth in demand, resulting in a major expansion in sales in this component of the industry.

### **Changing industry structure**

During the period measured, there has been a shift toward more chain store operations in this industry. Chains have gotten larger and have increased their share of the market in almost every type of store covered by this study. In the past, this industry had been composed of single-unit firms located in various communities, generally in a downtown traditional shopping area location. These stores were designed to serve

individual local markets for furniture, home furnishings, appliances, radios and televisions, records, and musical instruments. Chain store growth became more important during the period that encompassed the shift of stores from downtown areas to shopping malls and strip shopping areas in the suburbs, which includes the period covered by this study.

While single-unit stores still account for the majority of the stores in the industry, the number of multiunit operations has increased greatly. For example, the number of multiunit stores has more than doubled between 1967<sup>3</sup> and 1982<sup>4</sup>. More importantly, a significant amount of sales has shifted from single-unit firms to multiunit operations. In 1967, multiunits accounted for 28 percent of the sales. By 1982, the proportion of sales produced by multiunits had risen to 47 percent, although the number of stores belonging to multiunit firms accounted for only about 10 percent of the total.

In general, most of the chain store operations in the industry are local or regional in nature. There are a few national chains doing business in this industry, although some of the regional chains, especially in home electronics, are moving in the direction of becoming more widespread in operation. However, local or regional store networks tend to be much more common. For example, in 1967 there were five multiunit firms with 101 establishments or more.<sup>5</sup> By 1982, this number had only grown to nine firms with 100 establishments or more.<sup>6</sup> The bulk of the growth in the industry, both in number of stores and sales, has been in firms with 25 establishments or less. Such establishments tend to be local or regional chains.

### Technological changes

One of the most important innovations being used in this industry is computerized point-of-sale equipment. This technology varies in its sophistication but its object is to computerize the transaction. In some cases, the items to be sold are coded using a label directly applied to the product, keeping the price in the computer memory. In other cases, the description of the items to be purchased and prices are typed by a sales person or a clerk into a computer terminal. In all cases, the computer does the arithmetic of the sale, adds the sales tax, and prints out a sales ticket. In many cases, the system prompts the sales clerk by asking questions such as whether the clerk tried to sell an extended warranty. In some cases, the computer terminals are tied into a companywide computer system that can be used for such purposes as inventory control, product reordering, and advertising campaigns.

Another innovation recently introduced is computerized warehouses. Such warehouses can utilize computer-controlled "conveyorization" in which the computer controls the functions of storage, retrieval, and recording of inventory and location information. Some of these warehouses are high-rise in nature and use computerized high stackers which automatically store and retrieve items that

are retained in the warehouse. Another innovation that can be used in computerized warehouses is automatic guided vehicles. These driverless vehicles follow guides in the warehouse to move items in and out. They can interface with the high stackers and computerized conveyors. However, such equipment is in limited use in this industry and is particularly difficult to adapt to furniture warehouses because of the bulky nature and large variety of items to be stored.<sup>7</sup>

### Technological adaptations

The shift toward more chain store operations in this industry over the period measured has gone hand in hand with a shift to more computerized sales and warehousing techniques. This is especially true in the appliance, radio, and TV stores component of the industry, where numerous regional chains and a few national chains have recorded significant growth during the period that consumer electronics sales were exploding.

As part of their strategy for expansion, the consumer electronics chains use the latest computerized retailing technology. For example, one regional chain has computer terminals located on every sales counter. Besides accomplishing the individual transaction, these computers are connected directly to the central warehouse and company headquarters resulting in immediate transmission of sales data. This point-of-sale type technology allows the firm to minimize inventory and storage space, maximize selling space, and keep costs and rent expense low. It results in almost instantaneous control of inventory because as soon as each item is sold, the information is transmitted to headquarter-

**Table 1. Productivity and related indexes for the furniture and home furnishings stores industry, sic 57, 1967-85**  
[1977=100]

Year	Output per hour of all persons	Output	Hours of all persons	All persons
1967 .....	70.2	58.8	83.8	77.6
1968 .....	79.6	64.8	81.4	78.2
1969 .....	76.5	66.5	86.9	83.2
1970 .....	80.1	68.5	85.5	82.9
1971 .....	80.0	71.4	89.2	85.7
1972 .....	89.1	82.7	92.8	90.0
1973 .....	95.3	89.6	94.0	92.9
1974 .....	92.5	89.5	96.8	95.2
1975 .....	91.9	86.7	94.3	92.4
1976 .....	95.3	93.4	98.0	96.6
1977 .....	100.0	100.0	100.0	100.0
1978 .....	100.3	106.2	105.9	105.2
1979 .....	107.6	115.7	107.5	107.7
1980 .....	107.4	113.1	105.3	106.7
1981 .....	112.6	112.9	100.3	102.6
1982 .....	109.2	108.3	99.2	102.7
1983 .....	118.4	124.4	105.1	107.1
1984 .....	122.4	139.2	113.7	116.9
1985 .....	125.9	152.5	121.1	125.1
<b>Average annual rates of change</b>				
1967-85 .....	3.0	4.8	1.8	2.3
1967-73 .....	4.3	6.7	2.3	3.1
1973-78 .....	1.5	3.7	2.1	2.4
1978-85 .....	3.0	4.5	1.4	2.0

**Table 2. Productivity indexes for the furniture and home furnishings stores industry and two components, 1967-85 [1977=100]**

Year	Total furniture and home furnishings stores (sic 57)	Furniture and home furnishings stores (sic 571)	Appliances, radio, tv, and music stores (sic 572, 573)
1967	70.2	71.5	68.2
1968	79.6	81.8	76.3
1969	76.5	79.5	72.1
1970	80.1	79.3	81.2
1971	80.0	82.8	75.9
1972	89.1	93.0	83.4
1973	95.3	96.3	94.1
1974	92.5	93.1	91.8
1975	91.9	90.1	94.8
1976	95.3	94.4	96.5
1977	100.0	100.0	100.0
1978	100.3	97.9	104.0
1979	107.6	104.8	112.4
1980	107.4	98.0	124.0
1981	112.6	101.2	132.5
1982	109.2	97.6	128.7
1983	118.4	104.1	143.3
1984	122.4	110.3	143.4
1985	125.9	108.2	157.6
<b>Average annual rates of change</b>			
1967-85	3.0	1.9	4.6
1967-73	4.3	4.3	4.4
1973-78	1.5	1.0	2.2
1978-85	3.0	1.3	5.5

ters. In this way, slow-moving items can be pushed through advertising and store managers can be alerted, via the computer, about items that should be emphasized with special sales campaigns.<sup>8</sup>

In one national chain which uses point-of-sale type technology, sales of a specific item are rung up on computerized cash registers and the computer automatically signals a regional warehouse to send out a new supply of the item to the store requiring it. This chain also can send computerized messages on its system to individual stores, alerting store managers to items that are building up in inventory and need to be sold.<sup>9</sup>

The furniture store component of the industry has moved somewhat more slowly into computerized retailing technology. The types of products sold and the sales techniques used do not lend themselves as well as home electronic items to multistore computerized point-of-sale hookups. The more traditional furniture stores (chains or independents), comprising the majority of the furniture store component, act as showrooms where sample furniture is set up in displays. These establishments usually have knowledgeable sales people and decorators available to counsel customers. Such employees spend a lot of time dealing with such customer needs as matching size, type, and style of furniture and deciding on the correct color, pattern, composition, and fabric. Once ordered, the customer generally waits for the furniture to be manufactured. It is then shipped to the store's warehouse and delivered to the customer's home.

Traditional firms tend to have some furniture in stock in a warehouse, but because of the numerous combinations of styles and types of upholstery, much furniture is ordered by

the store, upon sale, directly from furniture manufacturers. However, there has been a trend in the industry, which started in the mid-1960's, toward warehouse type of furniture store operations. These stores, which tend to be run by regional or national chains, stock large volumes of furniture in the same building in which the furniture is displayed. The stores emphasize low price and rapid turnover. These stores are very large and generally include a high-rise warehouse as well as a large display area. They attempt to provide a number of different types, sizes, and patterns of furniture to satisfy the majority of tastes. Warehouse furniture stores use advertising such as direct mail catalogs and newspaper, radio, and TV ads as important marketing tools, emphasizing low price. Their objective is to provide furniture of all types from their stock to the purchaser almost immediately. To accomplish this goal, the stores use a computer system designed to keep careful control of inventory and provide the correct bin location of the item sold to the warehouse personnel. The warehouse personnel move the item, generally via manually operated forklift truck, to the loading docks where it is picked up by the customer. The customer does not have to wait the usual 6 or 8 weeks required for delivery from a conventional furniture store. In these stores, even large bulky items such as upholstered sofas are available. Warehouse stores encourage the customer to deliver the furniture themselves, usually in or on top of their automobile immediately upon sale, thereby cutting the warehouse stores' costs for delivery and inventory. Such firms tend to use the more advanced computerized point-of-sale equipment and warehousing operations installed in the industry.<sup>10</sup>

A similar type of operation that is growing in sales is the furniture clearance outlet. This type of store is designed to sell samples off the display floor and it also encourages customers to deliver the furniture themselves.<sup>11</sup> A different type of store that has recorded sales gains over the period measured concentrates on a very specific product line, such as sleep sofas or mattresses. These stores generally are operated by small or medium chains. They can provide rapid turnaround from their centralized warehouses because of the limited number of styles and sizes carried, therefore aiding productivity growth.<sup>12</sup>

Another type of furniture sales operation that has become more important in the recent past is the store emphasizing knocked-down furniture. These stores, many of which are combined with home furnishings outlets, tend to show furniture such as bookcases and tables which are available in knocked-down form on shelves right next to the item being displayed. The customer is encouraged to pick up the flat-packed furniture and purchase it at a central checkout counter, thereby cutting down greatly on the amount of sales help needed, delivery service required, and warehouse space needed for inventory. Flat-packed items, many of which are imported, take up significantly less warehouse space than completed furniture. Such furniture is much easier to ship, move, pack, and store than conventional, manufactured fur-

niture, resulting in significant labor savings for the store. By reducing the price of the items and displaying samples in attractive settings, the objective of this type of store is to sell items that must be assembled by the customer at home. This type of furniture store appears to be doing well and knocked-down furniture is growing in sales.<sup>13</sup>

### Employment

Employment in this industry has increased significantly over the period studied. The total number of persons working (employees, self-employed, and unpaid family workers) in 1967 was 555,000. By 1985, this total had grown to 896,000, an increase of 341,000 employees. Both components of the industry shared in the employment gain. The furniture and home furnishings stores component increased by 179,000 while the appliance, radio, and TV stores component almost doubled in employment over the period, growing from 216,000 in 1967 to 378,000 in 1985.

Average hourly earnings of nonsupervisory workers were \$2.42 in 1967 and grew to \$7.13 in 1985. These wages remained below the average hourly earnings for the total private nonfarm economy, which were \$2.68 in 1967 and \$8.57 in 1985.

Average weekly hours of nonsupervisory workers decreased steadily over the period measured, dropping from 38.5 per week in 1967 to 33.6 in 1985. This decline in average weekly hours indicates an increase in the employment of part-time workers.

The largest occupational group in this industry consists of sales and related workers, such as sales persons and cashiers. These employees accounted for about 30 percent of total employment over the period measured. Two other important groups consist of managers and clerical workers, both accounting for more than 15 percent of employment over the period studied. Craftworkers such as mechanics and repairers also are important in this industry, especially in specific types of stores. For example, household appli-

ance mechanics are particularly important in appliance stores, while radio and TV repairers are a major group in radio and television stores. Transportation workers, namely delivery truck drivers, also encompass a significant group in this industry.<sup>14</sup>

### Outlook

The current high growth in industry output is expected to continue. Products sold in all the types of stores covered in this industry are expected to continue to increase in the near future. Sales of furniture and home furnishings items as well as appliances are expected to be assisted by significant growth in new residential construction due to low mortgage interest rates.<sup>15</sup> Existing home sales also are up due to the low interest rates, aiding the output of stores in the industry. One area of uncertainty is growth in the construction of new apartment buildings, which may be negatively affected by the impact of the new tax legislation. Growth in home electronic equipment sales is expected to continue to be strong, keeping industry output up. Prices of home electronic items have continued to remain low because of increasing competition from Korean products. Many of the products sold by stores in this component of the industry are made by Japanese firms. However, they have not been as affected by changing exchange rates as other types of imported products. The home electronics industry is continuing to introduce advanced products and demand is expected to continue high for them.

Stores in the industry are expected to continue to introduce computerized equipment such as point-of-sale terminals and systems for sales analysis, inventory control, and product reordering. More automatic warehousing equipment is expected to be adapted.

The combination of high output growth and technologically advanced sales and warehousing equipment should result in a continuation of the above-average productivity growth rate in this industry, at least in the near future. □

### FOOTNOTES

<sup>1</sup> The furniture, home furnishings, and equipment stores industry is classified as sic 57 in the 1972 *Standard Industrial Classification Manual* and its 1977 supplement, issued by the U.S. Office of Management and Budget. The subindustries within the furniture and home furnishings group include furniture, home furnishings, and equipment stores, except appliance stores (sic 571), household appliance stores (sic 572), and radio, television, and music stores (sic 573).

<sup>2</sup> *Construction Review, Historical Statistics*, Vol. 29, No. 4 (U.S. Department of Commerce, International Trade Administration, July/August 1983), p. 9.

<sup>3</sup> *1967 Census of Business, Retail Trade, Single Units, and Multiunits*, BC67-RS-4 (Bureau of the Census, January 1971), pp. 4-4 - 4-5.

<sup>4</sup> *1982 Census of Retail Trade, Establishment, and Firm Size*, RC82-I-1 (Bureau of the Census, February 1985), pp. 1-15 - 1-18.

<sup>5</sup> *1967 Census of Business*, BC67-RS-4, pp. 4-4 - 4-5.

<sup>6</sup> *1982 Census of Retail Trade*, RC82-I-1, pp. 1-15 - 1-18.

<sup>7</sup> Information obtained from industry representatives.

<sup>8</sup> "A Tough Case To Prove, Luskin's Prospers in a Cutthroat Business. Secret? Aggressive Selling, Smart Use of Computers and Clever Commission," *Forbes*, Dec. 30, 1985, pp. 55, 58.

<sup>9</sup> "Circuit City's Secret for Electrifying Sales," *Fortune*, Jan. 7, 1985, p. 72.

<sup>10</sup> Information obtained from industry representatives.

<sup>11</sup> *1985 U.S. Industrial Outlook* (U.S. Department of Commerce, International Trade Administration, January 1985), p. 54-10.

<sup>12</sup> Information obtained from Southwest Home Furnishings Association.

<sup>13</sup> "Shopping Swedish-Style comes to the U.S.," *Fortune*, Jan. 20, 1986, p. 63.

<sup>14</sup> *The National Industry—Occupation Employment Matrix, 1970, 1978, and projected 1990*, Bulletin 2086 (Bureau of Labor Statistics, April 1981), pp. 273-76, and *BLS Industry—Occupational Employment Matrix, 1984 and 1995 Alternatives* (Bureau of Labor Statistics, November 1985), pp. 1452-67.

<sup>15</sup> *1986 U.S. Industrial Outlook* (U.S. Department of Commerce, International Trade Administration, January 1986), pp. 53-57.

## APPENDIX: Measurement techniques and limitations

Indexes of output per hour of all persons measure changes in the relationship between the output of an industry and hours expended on that output. An index of output per hour is derived by dividing an index of output by an index of industry hours.

The preferred output index for retail trade industries would be obtained from data on quantities of the various goods sold by the industry, each weighted (multiplied) by the employee hours required to sell one unit of each good in some specified base period. This concept also embodies the services associated with moving the goods from the retail establishment to the consumer. Thus, those goods which require more retail labor are given more importance in the index.

Data on the quantities of goods sold usually are not available for trade industries, including retail furniture and home furnishings stores. Therefore, real output was measured by removing the effects of changing price levels from the current dollar value of sales for the line items. Because an adjustment for changing price levels usually lowers the dollar value, such a series is usually referred to as a deflated value measure. Output measures based on deflated value have two major characteristics. First, shifts in sales within product lines can occur among products of different value which have the same unit labor requirements. Thus, a change can occur in the output per hour index even if the labor utilized to sell the merchandise does not change. Second, the sales level, both in current and constant dollars, reflects differences in unit values for identical products sold in different types of establishments. For example, the unit values associated with a product sold in a self-service "off-price" store may be lower than the unit value associated with the same product sold in a store that provides a number of sales clerks as well as delivery service. The output measure, therefore, reflects changes in the level of service provided to customers, insofar as differences in unit values reflect the difference in service among the various types of establishments.

In addition to the deflated value technique, the output measure for the total of the major group of retail furniture

and home furnishings stores was compiled by combining output from the various component industries using weights relating to labor importance (all person hours). This procedure results in a total industry output index that is closer, conceptually, to the preferred output measure.

The index of hours for the retail furniture and home furnishings stores industry is for all persons (hours for paid employees, partners and proprietors, and unpaid family workers). As in all of the output per hour measures published by the Bureau of Labor Statistics, hours and employment are each considered homogeneous and additive. Adequate data are not available to weight the various types of labor separately.

The indexes of output per hour relate total output to one input—labor time. The indexes do not measure the specific contribution of labor, capital, or any other single factor. Rather, they reflect the joint effect of many factors such as changes in technology, capital investment, capacity utilization, store design and layout, skill and effort of the work force, managerial ability, and labor-management relations.

No explicit adjustments were made to the measures to take into account increases or decreases in some services provided to the consumer. With the growth of warehouse stores in the 1970's, there was a trend toward more self-service operations. This shifted some of the hours in retailing from employee to consumer. However, data are not available to measure the effect of this change. Adjustments for changes in product quality are made to the extent that changes in quality have been accounted for in the price indexes used to deflate the current dollar value of sales.

The basic sources for the output series for this measure consist of the total sales data and sales by merchandise line reported by the U.S. Department of Commerce. The deflators were developed using Consumer Price Indexes published by BLS.

The basic source for the all-person-hour series consists of data on employment and hours published by BLS, supplemented by data reported by the Internal Revenue Service and special tabulations compiled for BLS by the Bureau of the Census.