

Beauty and barber shops: the trend of labor productivity

*Output per hour of persons employed
in these shops rose at an annual rate
of 0.8 percent between 1972 and 1984,
in line with the productivity trend
for other personal service industries*

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Output per hour of persons employed in the beauty and barber shop industries rose at an average annual rate of 0.8 percent between 1972 and 1984.¹ Other industries with a high personal service component show roughly comparable trend rates, including the hotel and motel industry.

Output of beauty and barber shops remained virtually unchanged between 1972 and 1984, while hours dipped 0.6 percent a year. (See table 1.) The comparative weakness in output and hours was linked to sharp contractions in the number of barber shops. Beauty shops recorded some gains in output and a small long-term rise in hours.²

The output-per-hour trend rates for the two industries combined, as well as for beauty shops separately, mask pronounced year-to-year fluctuations. These, in part, reflected short-term volatility in the productivity mainly of beauty shops. Such volatility has probably been linked with lags in the adjustment of labor inputs to output changes—accounting for a relatively tight supply of labor in relation to output in “good” years, and for excess supply in “off” years. In beauty shops, productivity fluctuated between a rise of 8 percent (in 1984) and a drop of 6 percent (in 1976). The gains were associated with output rising more than

hours (or with hours declining)—except in 1981 when productivity increased because of a decline in output that was less than a decline in hours. Losses were all linked with a decrease in output accompanied by additional hours.

A change in the productivity trend in the two industries occurred after 1976. Between 1972 and 1976, output per hour fell in both industries; in beauty shops, it decreased at an average annual rate of nearly 4 percent. Subsequently, it rose 2.4 percent a year. The productivity drop during the 1972–76 period was to some extent associated with a strong increase in the service capacity of beauty shops, as indicated by expanding self-employment—accompanied by a change in hair styling fashions that *reduced* certain styling service requirements. The productivity rise after 1976 was linked with declining self-employment, and with fashion changes that called for more styling services.

Demand and output

Beauty shops render up to 12 distinct types of services; barber shops up to eight. Workers in both industries mainly cut hair; many establishments confine their service to hair cutting. In addition to haircuts, full-service beauty shops offer permanents, coloring, conditioning, and manicures; a few offer pedicures. A limited number of shops also perform facials and other cosmetical skin treatments. They also fit

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and service wigs. Their patrons often include men. The range of barber shop services is generally narrower, although styling and shampooing of men's hair have increased somewhat in importance. Women are also served.

Service output of beauty shops did not display a notably strong long-term trend, rising at an average annual rate of 1.4 percent between 1972 and 1984. Service output of barber shops declined at a rate of 4.8 percent a year during that period. The decline in barber shop output was somewhat erratic. The long-term uptrend in beauty shop service output obscures a rather sharp falloff between 1972 and 1976 that was subsequently reversed. Until 1976, beauty shop service output dipped 3.3 percent a year; thereafter it rose 2.6 percent a year. Neither the output of total consumer services nor of the consumer service industries for which the Bureau of Labor Statistics computes pertinent measures so strongly reversed trend during the decade (average annual rates, in percent):³

	1972-84	1972-76	1976-84
All services, except government	4.7	3.7	5.2
All consumer services	3.6	3.5	3.3
Beauty shops	1.4	-3.3	2.6
Barber shops	-4.8	-4.5	-5.6
Hotels, motels	3.9	3.0	3.5
Eating and drinking	2.7	3.1	2.2
Laundry and drycleaning	-2.8	-6.6	-1.9

Among reasons is that beauty shops are subject to changes in hair styling fashions, and these were quite far-reaching during the 1970's. Such changes have often shifted some elements of hair care from beauty and barber shops to the home (do-it-yourself), and vice versa.

Trade publications data and interviews with industry representatives confirm that the mix of services offered by beauty shops changed significantly between 1972 and 1984, as styles changed. In the late 1960's and early 1970's, long hair became popular and required more attention by hair stylists than the fashions that followed. Bouffant hairdos, which entail much back-combing ("teasing") and setting, hence additional labor, were still popular.⁴ After about 1972, shorter hair and the "natural look," requiring less styling and setting, came to be preferred, somewhat diminishing the need for professional styling.⁵ Women now tended to visit beauty shops chiefly for trimming of their hair, often washing it themselves. This reduced the time needed for such services as shampooing and setting of the hair.⁶ Hair coloring, which had been popular during the early 1970's, declined in relative importance as the "natural look" gained favor. The demand for "wash and wear" permanenting rose strongly throughout the 1970's, because it permitted minimum maintenance of hair style and lessened visits to beauty shops.⁷

Moreover, longer hair among men came into fashion, and men who preferred to have their hair professionally

Table 1. Productivity and related variables in the beauty and barber shop industries 1972-84

[1977=100]

Year	Beauty shops ¹			Beauty and barber shops ²		
	Pro-ductivity	Out-put	All person hours	Pro-ductivity	Out-put	All person hours
1972	110.1	103.9	94.4	105.0	108.6	103.4
1973	106.2	102.1	96.1	100.7	106.8	106.0
1974	106.2	99.6	93.8	101.4	101.5	100.1
1975	100.1	94.5	94.4	98.7	97.6	98.9
1976	94.3	91.3	96.8	95.0	94.4	99.4
1977	100.0	100.0	100.0	100.0	100.0	100.0
1978	104.7	106.2	101.4	103.6	105.3	101.6
1979	108.0	108.4	100.4	107.4	105.6	98.3
1980	106.2	107.2	100.9	102.9	103.6	100.7
1981	114.7	105.1	91.6	109.2	99.9	91.5
1982	113.1	103.6	91.9	108.3	97.8	90.3
1983	120.0	119.4	99.5	114.1	109.8	96.2
1984	111.7	119.7	107.2	104.5	108.5	103.8
Average annual percent change:						
1972-84	0.9	1.4	0.5	0.8	0.2	-0.6
1979-84	1.5	2.3	0.8	0.5	0.8	0.3

¹ Standard Industrial Code 723.
² SIC 723 and 724 combined.

groomed increasingly visited beauty shops.⁸ "Unisex" salons, usually featuring limited services common to the hair styling needs of both sexes (hair cut, permanent wave, and shampoo), spread. The expansion of unisex salons, with their emphasis on walk-in, no-wait service (no appointments), represented a basic marketing shift; and has been a factor in the persistent decline in the number of barber shops.⁹

The change in fashions and the resultant shift in the services performed by beauty and barber shops apparently did not much affect labor requirements. The proportion of labor costs in beauty salons' total operating costs averaged around 60 percent throughout the period. While permanenting gained and hair coloring lost in relative importance, the two together have evidently accounted for roughly one half of the work performed in beauty shops. The relative importance of shampooing, conditioning, and trimming of hair seems to have changed little over the period.¹⁰ The range of barber shop services generally remained narrow, with haircuts outranking their other services. However, hair styling has increasingly added to the quality of barbers' hair cutting service.¹¹

The fashion changes that occurred in the early 1970's loosened the traditional relation between beauty shop services, household incomes, and changes in the age composition of the female population.¹² The age distribution of employed women age 35 to 54 changed little, and this group, according to an industry survey, has the greatest probability of visiting beauty shops and the highest frequency in doing so. The proportion of employed women in this age group declined from 38 percent in 1972 to 34 percent in 1977, then rose to 37 percent in 1984.¹³ Overall, employment of women rose at an average annual rate of

3.3 percent between 1972 and 1984, and median income (in current dollars) of women working full time increased at an estimated rate of 8 percent a year. The rise in women's employment and income proved paradoxical. It often meant that less time was available for visits to beauty shops, and more hair care was performed at home. Moreover, many women apparently preferred unisex salons, offering no-frills service. However, women could afford to patronize full-service salons more frequently.¹⁴ In general, according to the survey, the frequency of beauty salon visits rises with income. Yet, pressure of time may reduce the services requested or desired by the client.

Despite the increase in the output of beauty shops since the mid-1970's, constant-dollar receipts of both beauty and barber shops declined steadily as a proportion of total personal consumption expenditures for services, falling from 1.2 percent in 1972 to 0.7 percent in 1982.

Employment and industry structure

Employment in beauty and barber shops, including payroll as well as self-employment, totaled 692,000 persons in 1984. It did not, on balance, change significantly over the 1972–84 span. Hours declined at an average annual rate of 0.6 percent, partly reflecting a continual shift to part-time schedules.

Annual employment and hours data for barbershops are of but limited validity.¹⁵ However, pertinent data collected by the Bureau of the Census for census years show that the number of barber shops declined 25 percent between 1972 and 1977. The number of paid employees dropped 17 percent over that period, with a further 25-percent decrease indicated for the 1977–83 span. Self-employment, as indicated by the number of proprietorships and partnerships, dropped by just over one-third between 1972 and 1983.¹⁶

Census data show that the great majority of barber shops do not employ wage or salary workers. The one-sixth which do account for close to one-half of receipts. Of barber shops with payrolls, one-fifth employs half of the payroll employees in the industry. Most of the others engage one or two paid workers, with the owner or owners also working.

Employment in beauty shops, which totaled about 591,400 persons in 1984, rose at a rate of 1.1 percent a year over the 12-year period. It increased even in years of declining service output, except in 1981 when it dropped sharply, and in 1974 when it remained unchanged from the previous year. Hours responded somewhat more closely to movements in output, rising at a rate of 0.5 percent between 1972 and 1984. For 1982, the BLS estimates that nonsupervisory beauty shop workers averaged 29.6 hours per week, reflecting a high part-time component, and that part-time schedules accounted for 39 percent of employed workers.¹⁷ This represents a far higher proportion than for employed workers generally, of whom only 13 percent were on voluntary part time (in 1984); or for service workers (other than in private households), of whom 18 percent worked part time.

While two-fifths of all beauty shops employ wage or salary workers, they account for four-fifths of the industry's total receipts. On average, beauty shops with payrolls employ four workers. However, 60 percent of the payroll employees work in only 30 percent of all beauty shops, averaging eight workers per shop. In addition, the owner or owners also perform beauty services (industry sources believe 90 percent do so).

Self-employment in barber shops dropped much more sharply over the 1972–83 period (35 percent) than payroll employment (25 percent); and it rose a bit more in beauty shops (15 percent) than payroll employment (14 percent). It was mainly the small beauty shop with one or two paid employees whose numbers dwindled. It is of interest to note that *self-employment* in beauty shops attained a peak in 1980 that was 19 percent above the previous high, reached in 1972. But in 1983, self-employment was 4 percent below the 1980 mark. The leveling off in beauty shops' *payroll employment* was much more moderate.

While total employment (all persons) in beauty and barber shops combined did not change significantly between 1972 and 1984, employment in industries with a large personal service component generally rose rapidly. In general, in industries that may be defined as consumer-oriented services with a high personal-service component, employment increased at an average annual rate of 3.8 percent between 1972 and 1984, or by 53 percent.¹⁸

Both barbers and hair stylists—often referred to as cosmetologists—are skilled workers, and are required to obtain up to 1,800 hours of training in most States, as well as to be licensed. While hourly earnings do not compare favorably with the average for private nonfarm industries or for service industries generally, comparisons are not entirely valid because beauty and barber shop workers receive tips, and are generally paid on a commission basis.¹⁹ However, there is a large reserve pool of licensed but inactive hair stylists, estimated by industry observers at several times the number actually working. The potential competition tends to constrain pay increases.²⁰

Efficiency and tools of the trade

No official data on the capital expenditures of the beauty and barber shop industries are available. However, the Bureau of the Census reports the value of shipments by manufacturers of barber and beauty chairs, other furniture, and equipment (including hair clippers) for the two industries. The value of such shipments amounted to \$47.5 million in 1982; this represented a decline from both 1977 and 1972 when the pertinent figures are adjusted for price changes. Beauty and barber shop personnel, of course, use many kinds of tools manufactured in a broad variety of industries, so that the above figure for the heavier types of equipment understates the two industries' total equipment outlays. Trade sources indicate beauty shop expenditures of \$46.4 million in 1982 for appliances, such as hand dryers,

and for such durable sundries as shears and scissors.²¹ That would suggest total equipment expenditures of close to \$100 million in 1982 by the two industries. (No reliable estimate for outlays for structures and structural fixtures can be offered.)

Barbers and hair stylists use a variety of powered and unpowered handtools, often in conjunction with small electrical appliances (such as heat lamps), as well as shampoos, tints, and conditioning solutions in performing their work. There have been and continue to be improvements in both the equipment they use and the solutions they apply. These improvements, however, are designed primarily to facilitate adaptation to changing hair styles, rather than to reduce labor requirements per patron served for the same hair style or category of service.

The use of cordless, rechargeable clippers and trimmers allows the operator greater freedom of movement. It is debatable whether these devices have lessened unit labor requirements. Industry observers in the barbering trade, where the electric clipper was introduced long ago, doubt that this device has significantly reduced the time needed for men's or boys' haircuts, although it is much less laborious to use than the unpowered clipper, which it replaced. Similarly, shampoo machines, introduced in barber shops 15 to 20 years ago with the expectation that they would save time, do not significantly lessen the time needed for the average haircut, although the machines may make the service more agreeable to the customer.²²

Electric blowers have tended to replace dryers. They are easier to manipulate in conjunction with blow drying or styling. Blowing is thought to be less quick than heat drying but conforms more readily with so-called "wash-and-wear" hair styling and the "casual" hair styles in fashion among both women and men. More than a decade ago, formalized hair-setting practices required operators to use setting lotion, pins or rollers, and dryers. The practice, and the fashion that gave rise to it, are no longer popular, thereby reducing labor requirements. However, some establishments (and patrons) continue to prefer the more formalized hair styling practices and dryers.²³

Combs made of better plastics are now more pliable and run more easily through the hair, and last longer. Brushes are now easier on the scalp, more specialized to type of hairdo, and also last longer. Shears are shorter to give the operator greater control in trimming hair; they also are made of better metals, require less frequent sharpening, and produce a cleaner cut. Easier to use curling irons have also been introduced.²⁴ Industry observers generally agree that these developments have not significantly reduced unit labor requirements, although operator effort has been eased by them.²⁵

This also holds generally for the solutions applied in washing, setting, conditioning, and tinting of hair. Thus, shampoos clean the hair, but they also tend to dry it out. Additives have been developed which inhibit this drying

process. Permanent wave solutions and tints are more gentle and do less damage to the hair's molecular structure.²⁶ Tints are now manufactured in the form of creams rather than liquids, which tends to improve the hair's appearance. But the hair stylist must still divide the hair every 16th of an inch for proper tinting to reach the roots. The improved tint has not materially shortened the time required for the work.²⁷

Permanent-wave solutions have been developed that time permanents automatically and permit the hair stylist to remove the curling rods without testing the curl for proper setting. In principle, this shortens labor requirements for this particular service. However, because of the variance in hair texture, the stylist may be reluctant to follow the manufacturer's instructions to the letter. She or he may be guided by, but not entirely rely upon, the automatic setting prescribed by the manufacturer. The stylist will generally be less concerned with saving time than with the quality of the service rendered to the patron, although in busy beauty shops there may be conflicting pressures.

Technological changes occurred during the decades prior to the period studied here that led to the expansion of the beauty shop industry and the contraction of barber shops.²⁸ Thus, the advent of the permanent-wave machine in the 1920's shifted women's hairstyling from the home to the market. The "cold wave," a chemical means of curling hair in conjunction with curlers, accelerated the shift in the late 1940's and 1950's. By contrast, the invention of the safety razor, and its diffusion when its price dropped after the patent had expired, shifted shaving from the barber shop to the home; the electric razor, widely marketed first during the 1930's, completed the shift. Thereafter, the work of barber shops was by and large confined to hair cutting. Beauty shops have almost always been under competitive pressure from hairstyling products for home use, but generally they have been able to overcome this pressure by improving quality of service and of the service environment.

Outlook

It appears likely that the basic skills of hair stylists and barbers will continue to resist, as they have in the past, the kinds of technological change that incorporate them in mechanical devices. Industry observers do not foresee technological innovations on the scale of the permanencing machine, discussed earlier, which fed the expansion of the beauty shop industry prior to the 1972-84 period. Industry observers also believe that hair styling and barbering, being highly personalized services, should not be surrounded by impersonal technologies and "gadgets." Hand-held tools of the beauty and barber trades will probably continue to become better adapted to hair styling and trimming tasks, and the chemical applications required for setting, conditioning, and coloring of hair should continue to become more serviceable.²⁹ But it is not clear that they will be more labor-saving than tools currently in use.

Certain organizational (or structural) changes in both industries have occurred (and should continue to occur), which tend to standardize operational practices and set models of managerial efficiency. Thus, as of 1983, 19 firms listed by the U.S. Department of Commerce franchised (or operated) more than 2,000 beauty and barber shops. In addition, training services were offered as part of exclusive product-sales franchises to more than 5,000 shops.³⁰

Consulting services are now available to assist in setting up and equipping salons. They offer a variety of services, such as architectural and interior design, advertising pro-

grams, and managerial and financial advice.³¹ Salon management systems have been widely accepted by the larger shops. Their originators provide computer software and advice in its use. The business and financial side of salon management may thus increasingly come to be handled by outside firms under contract with the salon owner. In turn, performance standards of employees more in line with operating costs may be more readily formulated and may improve operational efficiency in both industries, as the standards diffuse.³² □

—FOOTNOTES—

¹ The two industries for which productivity is discussed here have been designated as sic 723 (beauty shops) and sic 724 (barber shops) in the Office of Management and Budget's *Standard Industrial Classification Manual, 1972*. Beauty shops are primarily engaged in beauty services; barber shops are primarily engaged in furnishing barber and men's hair styling services. Combination beauty and barber shops are classified as sic 723. Beauty schools and barber schools are included in the respective industries.

A separate productivity measure for barber shops has not been published because of the limited reliability of employment data.

Average annual rates of change are based on the linear least squares trends of the logarithms of the index numbers. The measures of productivity will be updated and included in the annual BLS bulletin, *Productivity Measures for Selected Industries*.

² For an earlier study of productivity in beauty and barber shops, see Jean Alexander Wilburn, "A Contrast in Productivity Trends Within Personal Services: The Beauty and Barber Shop Industries," in Victor R. Fuchs and Jean Alexander Wilburn, *Productivity Differences Within the Service Sector* (New York, National Bureau of Economic Research, 1967), pp. 55–109. The study covered the 1939–63 period, but used census-year rather than annual data. The Wilburn study and BLS findings compare average annual rates of change, in percent, for 1939–63 and 1972–82 as follows:

	Barber Shops		Beauty Shops	
	1939–63	1972–84	1939–63	1972–84
Current dollar receipts . . .	5.7	1.5	7.8	9.3
Price	5.2	7.0	3.8	7.5
Real output	0.5	-4.8	4.0	1.4
Employment	-0.1	-3.5	2.5	1.1
Real output per person . . .	0.6	-1.3	1.5	0.2

³ The rates of change are derived from constant-dollar personal consumption expenditures for services published by the Office of Business Economics, U.S. Department of Commerce. The figures for consumer services are derived from constant-dollar personal consumption expenditures for services, Office of Business Economics, U.S. Department of Commerce. Also see footnote 18.

⁴ *Modern Beauty Shop*, February 1972, p. 45

⁵ *Modern Beauty Shop*, January 1973, p. 40 ff.

⁶ Industry information. According to an advertisement by the Wella Corporation (*Modern Beauty Shop*, February 1974, p. 84), "no fuss, wash and wear" hair styling was becoming popular. There was also a demand for changeable styling and associated paraphernalia, such as hot combs and hot rollers. Because of a greater chance of hair becoming damaged, a trend toward conditioning of hair developed to regain and retain its normal appearance and protect it from damage.

⁷ Information from National Hairdressers and Cosmetologists Association, St. Louis, MO.

⁸ Information from the Beauty and Barber Supply Institutes, Englewood, NJ. See also *The Wall Street Journal*, May 1978, p. 40.

⁹ Beauty and Barber Supply Institute.

¹⁰ See the annual surveys of the professional salon market in *Modern Salon* and its predecessor publication, *Modern Beauty Shop Magazine*. The

market surveys show beauty shop suppliers' purchases from manufacturers, by product classification. The publisher confirms that the surveys are indicative of the volume of beauty shop services to which the product classification pertains. The proportions (in percent) of distributor purchases of key products (here excluding cosmetics, of which a large part is sold at retail by beauty shops, as well as furniture and equipment) changed as follows over the 1972–82 period:

	1972	1976	1982
Total	100	100	100
Permanents	17	20	34
Hair color	35	28	22
Shampoo	15	18	18
Conditioners	13	16	17
Hair goods and accessories	11	3	1
Held-held electrical appliances	10	15	9

¹¹ In a recent pricing sample of the Consumer Price Index, styling figured in one-third of all haircuts performed in barber shops.

¹² See Amelia Bassin, "The Consumer Revolt—What's In It For You?" *Modern Beauty Shop*, January 1973, p. 40 ff.

¹³ *1983 Salon Client Survey*, conducted by Vance Research Services, Lincolnshire, IL. Data are from the Bureau of Labor Statistics.

¹⁴ See the "1983 Salon Client Survey," *Modern Salon*, September 1983, p. 92.

¹⁵ See footnote 1.

¹⁶ Internal Revenue Service, *Statistics of Income, Partnership Returns and Sole Proprietorship Returns*, various years.

¹⁷ *Occupational Projections and Training Data*, Bulletin 2206 (Bureau of Labor Statistics, 1984), pp. 52–53.

¹⁸ Consumer-oriented service industries with a high personal service component (other than government services) are here defined as including the following industries: hotels and motels (sic 70); personal services (sic 72); motion pictures (sic 78); amusement and recreation services (sic 79); health services (sic 80); educational services (sic 82); social services (sic 83); and membership organizations (sic 86).

¹⁹ For the salon owner profile, published annually in *Modern Salon*, see August 1984 issue, p. 82 ff.

²⁰ Licensing surveys by *American Hairdresser* estimated the number of licensed hair stylists to exceed the number actually working by a factor of 5 in 1973–74 and 1975–76.

²¹ *Facts and Figures*, 23rd Annual Survey of the Professional Salon Market, 1982.

²² Information from Beauty and Barber Supply Institute. See also the advertisement for Oster Corp., and Wahl Clipper Corp., in various issues of *Modern Beauty Shop* and *Modern Salon*.

²³ Information from National Beauty and Barber Manufacturers Association. See also advertisements of Styling Research Co. in *Modern Salon*, November 1982, and Duhl, Duck Inc., *Modern Salon*, April 1984.

²⁴ *Ibid*. See also advertisements for shears, switch blades, and razors, for example, by Jatai International, Los Angeles, CA, in *Modern Salon*, September 1984.

²⁵ Apparently none of the pertinent advertisements have claimed that labor time savings would result from the use of the products advertised. Industry observers, however, say that the use of better service-adapted styling tools is considerably less tiring than the use of more conventional tools—considering that the stylist stands behind the chair a good part of the day and moves her or his arms in a distal position.

²⁶ Industry sources. See also footnote 7. “Permanenting, coloring, bleaching and tinting can all take their toll on the quality of hair,” advertisements by the Wella Corp., *Modern Beauty Shop*, February 1974, p. 84.

²⁷ National Beauty and Barber Manufacturers Association.

²⁸ See Wilburn, “A Contrast in Productivity Trends,” p. 61 ff.

²⁹ Information from National Beauty and Barber Manufacturing Association, National Hair Dressers and Cosmetologists Association, and People-Media, Reading, PA.

³⁰ Andrew Kostecka, *Franchise Opportunities Handbook* (U.S. Department of Commerce, September 1983), pp. 32–37.

³¹ See, for example, *The Raylon Resource* (Reading, PA, Raylon Showrooms). See also *Salon Today*, various issues. Information from Cutco Industries, Jericho, NY., and other industry sources.

³² See, for example, *The Computerized Salon Management System* (Cincinnati, OH, The Mikal Corp., 1985). The annual “Facts and Figures” articles in *Modern Salon* also tend to standardize business operations in the industry.

APPENDIX: Measurement techniques and limitations

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

The preferred output index for personal service industries would be obtained from data on the quantities of services provided by the industry. The quantity of each type of service provided would be weighted (multiplied) by the time required to provide one unit of each type of service in some specified base period. Thus, services that require more labor time would be given more importance in the output index than services that require less.

Such data, however, are not available for the beauty and barber shop industries. Real output of these industries was estimated by removing the effects of changing prices from the current-dollar value of industry receipts. Because an adjustment for price changes usually lowers the dollar value, such a series is referred to as a deflated value measure. The deflator used here is the Consumer Price Index for beauty shops and for barber shops. These two CPI's price a total of 25 types of service and 51 specific services, as well

as certain additional pricing factors. The more important the service, the greater the probability of its being priced.

The index of hours for beauty and barber shops is for all persons—that is, the index represents hours for paid employees, as well as for partners and proprietors. As in all of the output-per-hour measures published by the Bureau of Labor Statistics, hours and employment are considered homogeneous and additive. Adequate information for weighting the various types of labor separately are not available.

The indexes of output per hour do not measure the specific contribution of labor, capital, or any other single factor. Rather, they reflect many interrelated influences such as changes in technology, capital investment, design and layout of workplaces, skill and effort of the work force, and managerial ability.

The output measure is derived from data on annual receipts published by the Bureau of the Census. The all-persons-hour measures are derived from data on employment and hours originated by the Bureau of Labor Statistics and supplemented by data reported by the Internal Revenue Service, and from special tabulations compiled for the Bureau of Labor Statistics by the Bureau of the Census.