

# *A Quarterly Review of Washington State Labor Market Information*

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Second Quarter 1998

November 1998 Issue

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Washington State Employment Security Department  
Carver Gayton, *Commissioner*

The *LMI Review* is published by the Labor Market and Economic Analysis Branch of the Washington State Employment Security Department.

The purpose of the *LMI Review* is to provide timely information and analysis of the state labor market conditions in support of public and private activities that expand employment opportunities and reduce unemployment.

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For additional labor market information, contact our

- homepage at ***www.wa.gov/esd/lmea***
- On-line database (WILMA) at ***www.wilma.org***
- Labor Market Information Center (LMIC) at ***1-800-215-1617***

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# Access Washington Adds a New Level of Service

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Commissioner  
Carver Gayton

**COMMENTARY**

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Washington State opened a window on the world recently when Governor Gary Locke launched Access Washington, bringing citizens easy access to government information and services around the clock over the Internet.

Access Washington (<http://access.wa.gov>) replaces the award-winning Home Page Washington and adds a new level of transaction-based services.

“With a click of the mouse,” said Governor Locke, “People can find jobs online through the WORK Job Search. Businesses can file and pay taxes electronically. Homeowners can find out whether contractors making home improvements are registered and bonded. Kids can come home from school and get help with their homework at Just for Kids.”

Employment Security’s Labor Market and Economic Analysis page is part of Access Washington. It provides a wide variety of labor market information to help business, government, and the general public make informed decisions.

It features easy to use screens so a person can interactively select and extract economic and occupational career information based upon their own criteria.

Labor Market Information provides career data including projections of fastest growing jobs. Economic data, such as employment, unemployment and wage information, are used by employers, planners, economists, and job seekers across the state. We feature economic analysis, special reports, and publications that focus on trends in the labor market.

Having our Labor Market Information on the Internet has increased our appreciation of timeli-

ness of our information and the need for ease of access by our customers.

We are proud that this home page was recently awarded first place in the nation by the Interstate Conference of Employment Security Agencies for electronic dissemination of labor market information.

We are in good company with Access Washington, winner of the Digital State Award from the Progress and Freedom Foundation two years in a row. Washington leads the nation in the use of information technology to deliver services to citizens and improve government operations.

We are very proud of the WORK page—our state’s official site for career and employment resources. It will search all current job openings listed with the department by Washington State employers. WORK contains a talent bank of resumes that employers can search for qualified workers from across the nation.

It is an electronic communications system to link employers, via e-mail, to job seekers. The WORK home page has extensive links to other career resources and information services available on the Internet.

The purpose of WORK is to provide the most economical, effective network possible for managing access to employment advertising, outplacement services, and communications for employers and job seekers.

The Access Washington team includes a cabinet-level subcommittee chaired by the governor’s chief of staff Joe Dear and the governor’s technology adviser Chris Hedrick. I am proud to be one of the members of the subcommittee that also includes Tom Fitzsimmons (Ecology), Fred Kiga (Revenue), Gary Moore (Labor & Industries), Evelyn Yenson (Licensing), and Steve Kolodney (Information Services).

The governor also announced that he has formed a council of business leaders from high tech companies to advise the state on how the Internet could be used to improve service to the public. The members are Maria Cantwell of RealNetworks, Andrew Fry of Free Range Media, Russell Horowitz of go2net, Daniel Rosen of

*Continued page 2*

## Commentary *continued*

Microsoft Corporation, Bill Patterson of Attachmate Corporation, Katherine James Schuitemaker of PhotoDisc, Tom Van Horn of Mercata, Inc., and Kevin Vitale of Wall Data, Inc.

With experts like these advising the state, government officials and staff dedicated to keeping our state in the lead nationally, we can be assured that Access Washington will continue to go beyond a typical government web site and have something on the net for everyone. ■

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# Goods to Services: *That Point in the Cycle*

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Second Quarter 1998

**QUARTERLY  
ANALYSIS**

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For the past two years Washington's economy was driven by the unrelenting buildup in the goods-producing sector. Job growth in manufacturing shot up by roughly 4 percent in 1996 and 7 percent in 1997 at a time when the rest of the economy was expanding in the 3.0-to-3.5 percent range. Even more impressive, the principal drivers cut across a broad spectrum of industries that included not only aircraft and parts but also industrial machinery, electronics, scientific and medical instruments, and primary and fabricated metals. The 37,000 net new manufacturing jobs created in Washington in 1996-97 ranked as the third highest of any state in the nation. And demand continued strong coming into 1998.

But the second quarter showed a flattening in the growth curve. While employment overall was advancing at a 3.6 percent annual pace, manufacturing had slowed to a 2.0 percent gait. The principal weakness was among durable goods sectors. A leveling in aircraft and parts was expected: Boeing had announced in December that payrolls would be cut back modestly starting in the second half of 1998. Recent developments in computers and electronics added a new ingredient to the pie. Hewlett Packard is pulling out of Vancouver—impacting 1,000 workers—and Intel had begun cutting its manufacturing operation at Du Pont—affecting some 650 workers.

Other export-related manufacturers were beginning to feel the impacts of either weak foreign markets or an unusually strong dollar in the second quarter. Lumber and wood employment was chopped in the spring quarter as exchange rate dynamics resulted in more competitively priced imports. Food and kindred

products employment was also beset with strong dollaritis—many U.S. export items became much more expensive for foreign buyers during this period.

What needs to be emphasized is that manufacturing employment on average is operating at an all-time high. Any downward adjustments are off a very high base. Production of aircraft and parts has been booming. The problem: not being able to push enough jets out the door fast enough. The same is true for computer hardware and software where unit sales of office and computing equipment nationally were up better than 20 percent in the first quarter. Price containment is driving the need for increased efficiencies throughout the production process. And some selective trimming in 1998-99 after huge worker buildups in 1996-97 now seems to be the order of the day.

The offset in terms of growth is coming from a sharp uptick in nonmanufacturing, specifically in construction, trade, finance, and services. These big employment blocks are responding not only to current demand but a delayed response to the earlier buildup in manufacturing. This is typical timing. While the Asian financial crisis cut into shipments of forest products and farm commodities along with some pullback in aircraft orders, imports were up and some rerouting of shipments to Puget Sound ports because of congestion in Los Angeles-Long Beach has taken place. Building construction in the Seattle area boomed. And business services continued adding employment at double-digit rates.

The bottom line was an economy that had shifted decisively from goods-producing to service-producing growth. The switch should propel nonmanufacturing job growth for the year up better than 3 percent with manufacturing dropping off slightly in the second half. As is true currently, the rapid-fire growth in services will continue to pace the economy with annualized growth coming in at the 4.5-to-5.0 percent range for the fourth consecutive year. On balance, the employment setting for the second quarter looks to have set the stage for things to come.

*Continued page 6*

Figure 1

Nonagricultural Wage and Salary Workers

Washington State, Seasonally Adjusted, In Thousands, Benchmarked: March 1995

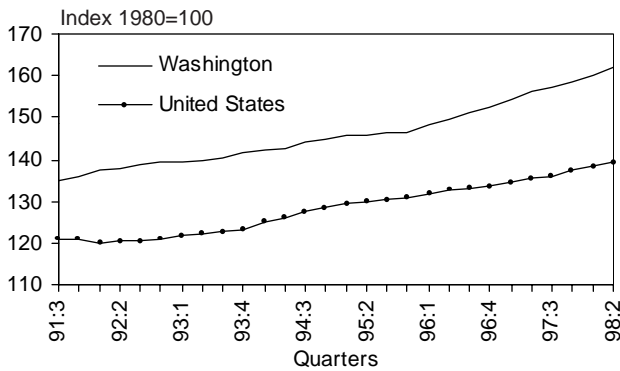
Source: *Employment Security, Revenue Forecast Council, & Office of Financial Management*

	Numeric Change				
	2nd Qtr 1998	1st Qtr 1998	2nd Qtr 1997	1st Qtr 1998 to 2nd Qtr 1998	2nd Qtr 1997 to 2nd Qtr 1998
TOTAL NONAGRICULTURAL EMPLOYMENT	2,593.3	2,570.7	2,507.6	22.6	85.8
MANUFACTURING	384.9	383.1	367.2	1.9	17.8
Durable Goods	275.4	274.2	257.6	1.2	17.7
Lumber & Wood Products	36.2	36.8	35.3	-0.6	0.9
Logging	6.9	7.2	7.5	-0.2	-0.6
Sawmills & Plywood	25.5	25.9	24.2	-0.4	1.4
Furniture & Fixtures	4.6	4.6	4.1	0.0	0.5
Stone, Clay & Glass	9.8	9.6	9.4	0.2	0.4
Primary Metals	12.3	12.3	11.5	-0.1	0.7
Aluminum	7.8	7.9	7.7	-0.1	0.2
Fabricated Metals	14.8	14.9	14.1	-0.1	0.7
Industrial Machinery & Equipment	26.8	27.2	26.6	-0.3	0.3
Computer & Office Equipment	8.2	8.5	8.3	-0.3	-0.1
Electronic & Other Electrical Equipment	18.7	18.3	16.6	0.4	2.1
Transportation Equipment	128.6	127.1	117.2	1.4	11.4
Aircraft & Parts	113.0	112.0	102.4	1.0	10.6
Instruments & Related	14.8	14.7	14.3	0.1	0.5
Miscellaneous Manufacturing	8.8	8.7	8.5	0.1	0.3
Nondurable Goods	109.6	108.9	109.5	0.7	0.0
Food & Kindred Products	41.2	40.7	42.1	0.5	-0.9
Preserved Fruits & Vegetables	13.5	13.9	13.4	-0.4	0.1
Textiles, Apparel & Leather	10.2	10.1	10.0	0.2	0.2
Paper & Allied Products	16.2	16.3	16.2	-0.1	0.0
Printing & Publishing	24.4	24.3	24.4	0.1	0.0
Chemicals & Allied Products	6.0	6.0	5.6	0.0	0.4
Petroleum, Coal, Plastics	11.5	11.5	11.2	0.0	0.3
MINING & QUARRYING	3.4	3.3	3.5	0.0	-0.1
CONSTRUCTION	141.3	139.6	135.5	1.7	5.8
General Building Contractors	40.0	39.8	38.2	0.2	1.8
Heavy Construction, ex. Buildings	19.2	18.5	19.1	0.7	0.2
Special Trade Contractors	82.1	81.3	78.3	0.8	3.8
TRANSPORTATION, COMMUNICATION & UTILITIES	135.1	135.4	135.0	-0.3	0.1
Transportation	90.1	90.7	88.9	-0.6	1.1
Trucking & Warehousing	31.9	31.8	31.2	0.2	0.7
Water Transportation	9.1	9.3	10.0	-0.2	-0.8
Transportation by Air	24.3	24.5	23.8	-0.2	0.5
Communications	29.3	29.2	30.0	0.1	-0.7
Electric, Gas & Sanitary Services	15.8	15.6	16.1	0.2	-0.3
WHOLESALE & RETAIL TRADE	622.1	617.2	606.4	4.9	15.7
Wholesale Trade	153.6	152.5	149.0	1.1	4.7
Retail Trade	468.5	464.8	457.5	3.8	11.1
General Merchandise	47.7	46.5	46.0	1.2	1.8
Food Stores	69.4	69.6	72.8	-0.2	-3.4
Eating & Drinking	173.1	172.6	167.6	0.5	5.5
FINANCE, INSURANCE & REAL ESTATE	132.7	131.3	127.2	1.3	5.5
Finance	57.5	57.0	54.7	0.5	2.8
Insurance & Real Estate	75.2	74.3	72.5	0.8	2.6
SERVICES	709.9	698.3	675.5	11.6	34.4
Hotels & Lodging	28.5	28.5	28.2	0.0	0.2
Personal Services	22.4	22.3	22.5	0.1	-0.1
Business Services	156.7	152.2	143.7	4.5	13.1
Health Services	184.4	183.4	177.5	0.9	6.8
Educational Services	34.6	33.7	32.6	0.9	2.0
Social Services	59.1	58.2	56.5	0.9	2.6
Engineering & Management Services	62.2	61.7	56.7	0.5	5.4
GOVERNMENT	463.9	462.4	457.1	1.5	6.8
Federal	67.4	67.5	67.6	-0.1	-0.2
State	134.2	133.0	131.3	1.2	2.9
State Education	71.8	71.2	69.6	0.7	2.2
Local	262.3	261.9	258.2	0.4	4.1
Local Education	139.8	138.3	136.2	1.4	3.6
Workers in Labor-Management Disputes	0.0	0.0	0.0	0.0	0.0

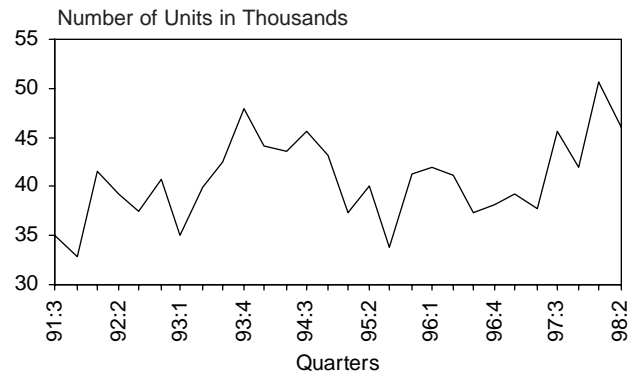
Excludes proprietors, self-employed, members of the armed forces, and private household employees. Includes all full- and part-time wage and salary workers receiving pay during the period that includes the 12th of the month.

# Labor Market And Economic Indicators

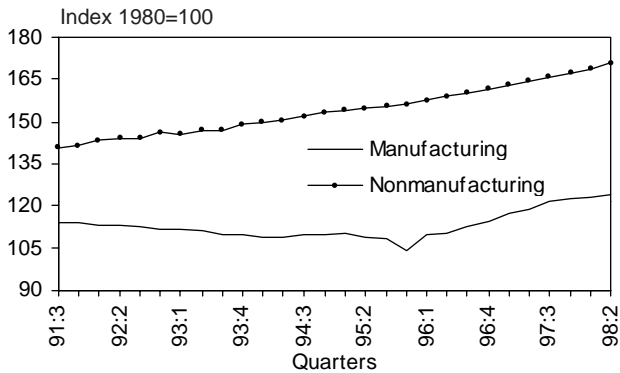
**Figure 2**  
**Total Nonagricultural Employment Change**  
*Washington State & Nation, Seasonally Adjusted*  
 Source: *Employment Security Department*



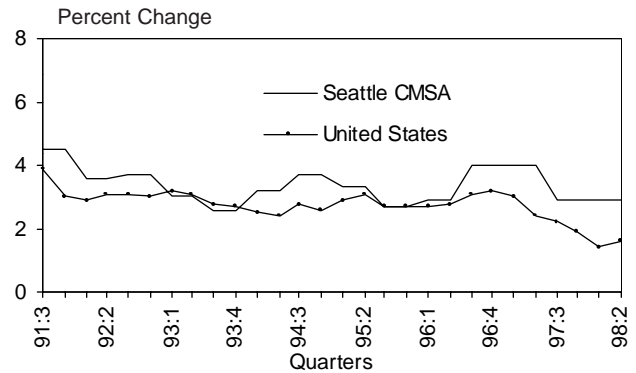
**Figure 5**  
**New Housing Units Authorized**  
*Washington State, Seasonally Adjusted*  
 Source: *U.S. Department of Commerce*



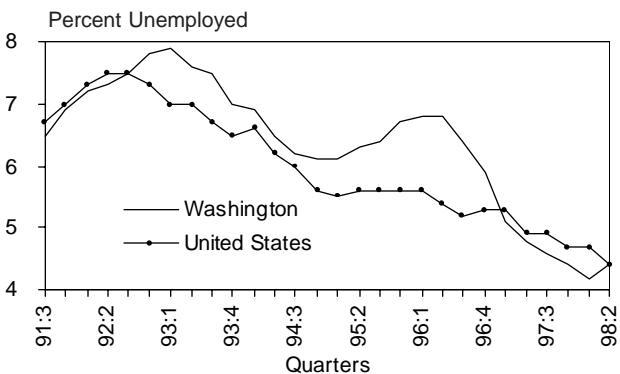
**Figure 3**  
**Manufacturing & Nonmanufacturing Employment Change**  
*Washington State, Seasonally Adjusted*  
 Source: *Employment Security Department*



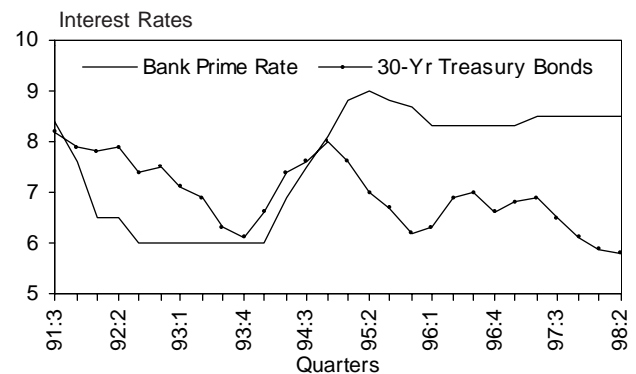
**Figure 6**  
**Consumer Price Index**  
*All Urban Customers*  
 Source: *Bureau of Labor Statistics*



**Figure 4**  
**Unemployment Rates**  
*Washington State & Nation, Seasonally Adjusted*  
 Source: *Employment Security Dept., U.S. Dept. of Labor*



**Figure 7**  
**Selected Interest Rates**  
*Percent Annual Rate*  
 Source: *Federal Reserve Board*



## Quarterly Analysis *continued*

Washington's unemployment rate blipped up two-tenths to 4.4 percent in the second quarter. This was likely a natural adjustment to the unseasonably low 4.2 percent rate in the first quarter. Early economic activity because of the mild winter drove the first quarter unemployment rate well below what would normally be expected. The second quarter rate merely returned to its previous trend-line.

### Washington's Economy at Mid-Year

Washington's economy is now in its third year of exemplary growth. Net new job creation in the state was running twice the national average at a seasonally adjusted annual rate of about 3.6 percent. National labor markets, in contrast, slowed in the second quarter, as did the real value of all goods and services produced in the economy. However, both the state and the nation continue moving ahead in what amounts to a very strong expansionary cycle.

### Broad-based Expansion Continues

An overwhelming characteristic of this prolonged upcycle has been that it has cut across a host of industries and occupations. It is one of the reasons why Washington's personal income growth last year ranked fifth highest in the nation. It is also one of the reasons that the state was able to successfully move 35,000 off welfare and into the job market in the first 12 months of Work-First. The leading growth sectors currently range from machinery and electronics to engineering and management services, health care, temporary help services, construction, public and private education, eating and drinking places, and computer data processing and software. Average wages run the gamut.

The job count in aircraft and parts has basically stabilized since the first of the year at 111,000—up 32,000 from the trough in 1995. What has moved to the forefront has been a sharp uptick in construction, trade, and services reflecting the secondary impacts generated from earlier

growth in manufacturing. The Asian crisis has cut into forest products and farm shipments but the impacts to date are relatively contained. Building construction in the central Puget Sound and Clark County portion is booming. And business services were adding workers at double-digit rates.

### Tight Labor Markets are Widening

The instance of worker shortages was being felt throughout the economy. Four out of every ten employers surveyed expressed the greatest degree of difficulty in filling professional and technical positions. Included were computer scientists, data processors, programmers, systems analysts, accountants, chemical engineers, manufacturing consultants and engineers, medical research scientists, and financial analysts. Nearly a quarter of the firms identified unmet demand for clerical and administrative support. And 18 percent listed unfilled jobs in production and operations.

Beyond the strong job growth of the past two years, demographic shifts were also at play. The relatively small "Baby Bust Generation" has been entering the work force, the huge "Baby Boom Generation" is aging and clogging up the promotional ladder, all while the post WWII "Quiet Generation" is retiring and exiting the work force. Net migration into the state has slowed as the California economy has recovered. And rapidly rising housing costs in the greater Seattle metropolitan area acted as a damper on the free movement of labor into the state's hottest job market.

### Wage Pressure Mounts

As labor markets have tightened, pressure on wages has intensified. The national employment cost index recorded over-the-year wage gains approaching 4 percent in the second quarter. Moreover the offset provided by progressively lower benefit cost increases has run its course. The hikes are still modest but higher than a year ago. And by every indication the pressure is mounting.

What does this mean to the bottom line? Wage gains offset by productivity gains are essentially zeroed out. And productivity in the U.S. economy



is presently rising in the 3-to-4 percent range in manufacturing and 1.5-to-2.0 percent overall. Producers generally are hard pressed to pass along cost increases—particularly given the current flood of imported goods. As a result, any rising differentials in labor costs will likely be eaten in the near term.

## LABOR FORCE AND UNEMPLOYMENT

Washington's seasonally adjusted unemployment rate fell half a percent over the year to reach 4.4 percent of the work force in the second quarter. Two factors have been pulling rates down. One is the exceptionally strong job growth over the past 18 to 20 months—Washington's economy has generated jobs at the fastest clip in nearly a decade—that greatly outstripped the corresponding increase in the labor force. The number of discouraged workers nationwide has dropped sharply. Compounding the situation is sheer demographics—an aging work force and fewer new entrants.

## INDUSTRY DEVELOPMENTS

Total nonfarm wage and salary employment in the state jumped by 22,600 between the first and second quarter of 1998. Manufacturing payrolls expanded by 1,900 on the strength of transportation equipment, food, and electronics. Aircraft and parts added 1,000 workers, which, oddly enough, was the lowest quarterly gain in over two years. But employment levels in this key industry have essentially stabilized since the beginning of the year after adding 31,000 in 1996-97.

Lumber and wood products employment was down 600 in the second quarter, and pulp and paper payrolls were down 100. Industrial machinery and electronics manufacturing were down 300 principally on the weakness in computers and office equipment.

Construction employment rose by 1,700, with much of the increase centered in heavy construction (+700) and special trades (+800). Unseasonably warm weather in the first quarter allowed some construction activity to proceed early—

specifically foundation and other concrete work. The result was to jump-start the traditional building season.

## Services Growth Takes the Lead

Wholesale and retail trade mounted by 4,900 workers in the second quarter led by fairly typical gains across the board except in food stores. Consolidations in the food store industry have led to some temporary weakness in employment tallies. Another development affects both food stores and eating and drinking places. These sectors were beset with an industry reclassification situation: a popular caffeine purveyor was moved into the eating and drinking category from the food store grouping as of the first of the year. As a result, over the year comparisons in these sectors are a bit murky.

## FIRE Hot

It was estimated that in the first quarter 1998, housing starts were at a 50,500 annual pace in Washington. In the second quarter, that pace was still at a respectable 45,900. Low and falling interest rates provided plenty of impetus in the finance and real estate sectors; payrolls were up 500 and 800 respectively over the quarter.

## Services Sizzle

But it was the services sector where outsized gains of 11,600 were realized over the quarter. That was over half of the total quarterly job increase; this from an industry division that represents not quite 28 percent of all nonfarm jobs. Strong upticks were posted in business services (+4,500). Sizable quarterly gains (+900) were posted for each of health care, educational services, and social services. Engineering and management services expanded at close to the average. This upsurge is pushing the services sector forward at a near 7 percent seasonally adjusted annual rate—nearly twice the pace of employment overall.

*Continued page 8*

## Quarterly Analysis *continued*

### Over-the-Year Growth Eases a Bit

Total nonfarm wage and salary employment, adjusted in collaboration with the Office of the Forecast Council, was up 85,800 or 3.4 percent over the year in the spring quarter. While this was a vigorous pace, it was still a ratcheting down from the booming pace of 100,000-plus over-the-year gains in the second and third quarters of 1997.

### Up Down and Sideways

Compared to a year ago, manufacturing payrolls were up 17,800 over the year, led by strong gains in aircraft and parts (+11,400), electronic and other electrical equipment (+2,100), and primary and fabricated metals (+1,400). Lumber and wood products payrolls, in the meantime were down by 600. While the hot housing market would normally portend good employment prospects in the lumber sector, a strong dollar resulted in a surge in imported logs and lumber thereby undercutting some local logging and lumber operations.

Construction employment mounted by 5,800 over the year. Again, the low interest rates for residential mortgages as well as a strong commercial market had been a boon for construction firms in Washington during the reference period.

Wholesale and retail trade were up 15,700 over the year in the second quarter. Services added 34,400 workers over the year with strong growth in business services (+13,100), health care (+6,800), and engineering and management services (+5,500).

## INDUSTRY NOTES

### Long-Range Boeing Forecast Upbeat

Mounting concerns over softening Asian orders has caused Boeing to schedule a 30 percent reduction in 747 production starting in the second quarter of next year and to temporarily halt production of the 777 at the end of 1999. Despite this current weakness, the Asia-

Pacific region is expected to regain its economic health and remain the world's largest market for commercial jetliners over the next 20 years. Boeing's annual long-range forecast to 2017 looks to a worldwide market of 17,650 new jetliners worth \$1.25 trillion of which 4,760 worth \$427 billion are expected to go to Asia-Pacific customers. North America is targeted at \$334 billion and Europe at \$345 billion. China alone is expected to buy 1,800 new aircraft worth \$125 billion over the next two decades.

### Laying Off the Layoffs

Last December, Boeing announced that it would begin the process of eliminating 12,000 positions beginning around the middle of 1998. By July, the move had been put on hold as the company continued to struggle with production delays caused by an increasingly ambitious production schedule (50 planes a month through the balance of the year) juxtaposed against aircraft parts shortages and an abundance of less skilled and trained assembly workers. The production bottlenecks have delayed deliveries of Boeing's next generation 737s. Nevertheless, the company intends to proceed with the work force reduction as soon as its production situation stabilizes, which may be around the end of the year.

### Power Outages

Energy deregulation has left uncertain the future of at least two western Washington energy production facilities. Operational in 1991, Tacoma City Light's waste-to-energy steam plant produced electricity by burning garbage on the expectation that electricity and solid waste disposal costs would skyrocket. This has not happened, thanks in large measure to energy deregulation. As it stands, it costs the plant \$55 per megawatt hour to produce electricity that can be purchased for \$15 on the open market, a situation that saw the plant lose \$30 million since it opened and which has now forced its shutdown.

The Centralia power plant and coal mine (the former being the largest such plant in western Washington) has also struggled to compete in

deregulated energy markets. The plant produces electricity at 2.2 cents per kilowatt-hour compared to 1.8 cents on the open market. Moreover, the cost of the plant's electricity could rise another 0.3 cents per kilowatt-hour to cover the costs of \$250 million in mandated pollution equipment designed to remove 90 percent of its sulfur dioxide emissions by 2003. Citing the growing competitive disadvantage, the owners have put the power plant and coal mine jointly up for sale, and may close them altogether if a buyer or buyers cannot be found. In the balance are 700 jobs with an annual average salary of \$55,000.

## NATIONAL INDICATORS

### Slow-Down is Evident

Real GDP shot up at a strong 5.5 percent annual rate in the first quarter, but pulled back sharply to a modest 1.8 percent pace in the second. The consensus for the year is something in the 3.2 percent range—down from 3.8 percent in 1997. A slower pace starting in the second quarter is reinforced by lower nonfarm wage and salary employment growth, an up-tick in unemployment, the spreading impact of the Asian crisis, and the GM strike. Sharp inventory buildup in the first quarter translated into lower manufacturing output in the second. Manufacturing payrolls nationwide dropped 21,000 between the first and second quarter.

On the other hand, the economy is destined to grow at a very respectable rate if somewhat slower rate for the eighth consecutive year—twice the average duration of the nine postwar upcycles. One of the principal driving forces is continued very low interest rates. The prime has been in the 8.25-to-8.50 percent range for nine quarters and unchanged for the past five. Thirty-year conventional fixed mortgages were running at 7.0 percent in June—down 69 basis points from a year ago. It is perhaps the overriding reason that national housing starts are rising for the third consecutive year. A second driving force is very strong growth in personal consumption—particularly for durable goods. This year's increase in real terms is expected to better last year.

### Fed Remains Calm

The Federal Reserve chose to leave short-term interest rates unchanged in the second quarter. In fact, the Fed has not touched short-term interest rates since March 1997. Why? The Fed saw several factors offsetting any domestic inflation threat. For starters, the Asian economic crisis was beginning to be felt in other parts of the world. Additionally, the Conference Board's index of leading economic indicators reported no exceptional movement in the spring months. Furthermore, factory orders for durable goods fell 2.6 percent in May. The dampening effect of the General Motors strike was yet another factor.

### Consumer Prices Hold the Line

The national consumer price index for all urban consumers inched up 0.1 percent in June after increasing 0.2 percent in April and 0.3 percent in May. All items, including food and energy, contributed to the easing. The food index decelerated from a 0.6 percent increase in May to 0.1 percent. Energy prices reversed gears falling 0.7 percent after a 0.3 percent increase the previous month. Medical costs rose 0.4 percent. Compared to a year ago, the index of consumer prices nationally was up only 1.7 percent in June. The Seattle-Tacoma-Bremerton index, in contrast, is published every other month with the April-to-June increase measuring 0.7 percent. Much of the uptick is being driven by higher housing costs, which rose 1.1 percent over the two months.

### Washington's Outlook Remains Strong

The good news for Washington is continued strong growth in office and computing equipment and only modestly lower national housing starts. The assumption for the state is slower but very respectable growth in the second half of this year and into 1999. Real personal income is expected to average 2.2 percent next year following a 5.8 percent increase in 1998. Wage and salary employment growth is assumed to ease from 3 percent to 2 percent with much of the easing centered in the central Puget Sound area. Aircraft and parts employment is expected to

*Continued page 10*

pull back by roughly 3,500 workers this year and another 3,600 next year but this still leaves employment at a very high base with very strong production requirements.

Some falloff in electronics and computer office equipment is scaling back employment by about 1,600 this year—a combination of Hewlett Packard and Intel. However, the research and development arm of Intel and others are adding workers and product demand is intense. Lumber and wood products and primary metals are expected to ease slightly as the business cycle softens. Total manufacturing employment is expected to dip by 7,000 in 1999 after peaking in 1998. But the secondary impacts continue generating higher than average growth in construction and services for the fourth consecutive year. The inflation assumption is a steady increase in the 2.5 percent range with no particular shocks to the system.

By and large, the regional outlook over the next 16-to-18 months is simply some cooling off. The economy will continue growing thanks to strong demand for Washington-based goods and services. Some shuffling in computers and electronic manufacturing does not alter the strong presence of that industry in the state. Microsoft will continue driving the business services sector. And Boeing's main problem is simply not being able to get enough product out the door fast enough. The Asian crisis is lowering exports but the domestic economy is picking up the slack. Housing and commercial construction is booming. The secondary impacts of earlier growth in the basic-goods producing sector have a way yet to go.

■ *Dennis Fusco*  
*Chief Economist*

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# Contingent and Alternative Work Arrangement Employees: *New Paradigm or Cyclical Event*

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## FEATURE ARTICLE

The use of contingent and alternative work arrangement employees has been an ongoing phenomenon of this particular business cycle. It may even have been the use of contingent and alternative work arrangement employees that helped spur the "Worker Insecurity" eruptions from a few years back. But surprisingly, despite its anecdotal omnipresence, the most recent data from the Bureau of Labor Statistics cannot be arranged, analyzed, manipulated, or transposed so as to confirm any exceptional current growth in the use of contingent or alternative work arrangement employees nationwide.

According to the U.S. Department of Labor, Bureau of Labor Statistics, the share of contingent workers nationwide declined from 4.9 percent of total employment in February 1995 to 4.4 percent in February 1997. On the other hand, the use of workers with alternative work arrangements— independent contractors, temporary help, on-call workers—remained at 9.9 percent for both points in time.

### Trend or Not

There is difficulty in determining trends in the use of contingent and alternative work arrangement employees. First and foremost, national data are available for only two points in time—February 1995 and February 1997. The good news is that it

is from the Current Population Survey, the survey of 50,000 households nationwide done by the Census for the Bureau of Labor Statistics. Because of that, its accuracy and reliability are without question. But, even though we learned in geometry that it takes just two points to make a line, in economics we are cautious about using just two points to discern a trend.

There is information that could be used as a proxy for trends prior to February 1995 and that is the growth of temporary help firm employment. That information does show remarkable growth in the pre and post 1995 period. That it does not match the CPS based data for the latest period does complicate comparisons.

## Contingent Workers

What exactly is a contingent worker? In the past, secondary wage earners and contingent workers were synonymous. But that definition has evolved. According to BLS, contingent workers are those who do not have an implicit or explicit contract for ongoing employment. Persons who do not expect to continue in their jobs for personal reasons such as retirement or returning to school are not considered contingent workers, provided that they would have the option of continuing in the job were it not for these personal reasons.

Within the BLS definition are three progressive levels of contingent worker status:

- Wage and salary workers who expect their jobs will last for an additional year or less and who had worked at their jobs for 1 year or less. Self-employed workers and independent contractors are excluded from this estimate. For temporary help and contract workers, contingency is based on the expected duration and tenure of their employment with the temporary help or contract firm, not with the specific client to whom they are assigned.
- Workers including the self-employed and independent contractors who expect their employment to last for an additional year or less and who had worked at their jobs (or

been self-employed) for 1 year or less. For temporary help and contract workers, contingency is determined on the basis of the expected duration and tenure with the client to whom they are assigned, instead of their tenure with the temporary help or contract firm.

- Workers who do not expect their jobs to last. Wage and salary workers are included even if they already had held the job for more than 1 year and expect to hold the job for at least an additional year. The self-employed and independent contractors are included if they expect their employment to last for an additional year or less and they had been self-employed or independent contractors for 1 year or less.

## Alternative Employment Arrangement Employees

Workers in the four alternative employment arrangements examined were: Independent contractors, on-call workers, workers paid by temporary help agencies, and workers whose services are provided through contract firms to only one customer at that customer's worksite.

- "Independent contractors" includes wage and salary workers who were independent contractors, independent consultants, or free-lance workers, i.e., someone who obtains customers on their own to provide a product or service. Also included are workers self-employed as independent contractors and independent consultants. This excludes business operators such as shop owners or restaurateurs.
- "On-call workers" are those who are only called to work as needed, although they can be scheduled to work for several days or weeks in a row, for example, substitute teachers and construction workers supplied by a union hiring hall. Also included in this group are day laborers—workers who get work by waiting at a place where employers pick up people to work for a day.

*Continued page 12*

## Feature Article *continued*

- “Workers paid by temporary help agencies” includes both workers who said their job was temporary or not temporary and were paid by a temporary help agency.
- “Workers employed by contract companies” includes workers for companies who provide employees or their services to others under contract. These workers are not assigned to more than one customer in a given week, and usually work at the customer’s worksite.

These four groups varied a great deal in terms of their demographic and other characteristics. Furthermore, these worker groups—particularly independent contractors and on-call workers—had sharply different characteristics from workers in more “traditional” arrangements.

Note: It is apparent from these definitions that there is overlap between contingent workers and alternative work arrangement workers. Contingent workers can have alternative work arrangements, and alternative work arrangement workers can be contingent. So beware of trying to sum these classifications as that would result in double counting.

## Highlights

- A total of 5.6 million workers held a contingent job under the broadest estimate. About 30 percent of contingent workers were under the age of 25, compared with about 13 percent of noncontingent workers. Contingent workers also were more likely than noncontingent workers to be female.
- About 43 percent of contingent workers were employed part time (less than 35 hours a week), compared with only 18 percent of noncontingent workers. Only 10 percent of all part-time workers were contingent, however.
- Characteristics of workers in alternative arrangements varied widely. Independent contractors tended to be middle-aged men while temporary help agency workers tended to be younger women.

- The majority (56 percent) of contingent workers would have preferred a permanent job.
- Worker satisfaction varied considerably by the alternative employment arrangements. The vast majority (84 percent) of independent contractors were satisfied with their work arrangement, but most (59 percent) temporary help agency workers would have preferred a traditional job.
- Median weekly earnings of full-time contingent workers were 82 percent of the earnings of noncontingent workers.
- Among workers in alternative arrangements, those employed by contract companies had higher earnings than workers in traditional arrangements, while those employed by temporary help firms and on-call workers earned less.

## Demographic Characteristics of Contingent Workers

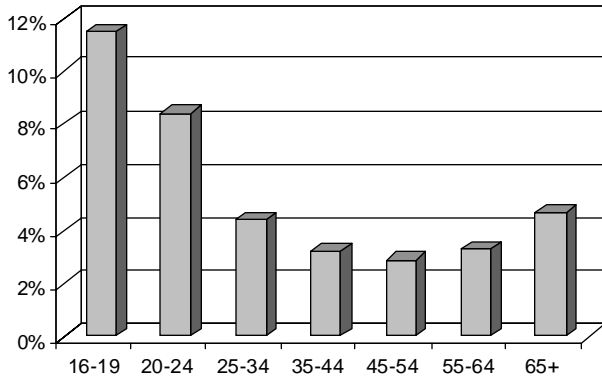
The February 1997 survey reported 5.6 million contingent workers under the broadest estimate. The findings on the characteristics of workers in contingent jobs and in alternative work arrangements in February 1997 were similar to those in the first survey 2 years before (see *LMI Review* January 1996).

As was the case in February 1995, contingent workers were more than twice as likely as noncontingent workers to be between the ages of 16 and 24, with many young workers combining contingent employment and school attendance (see *Figure 8*).

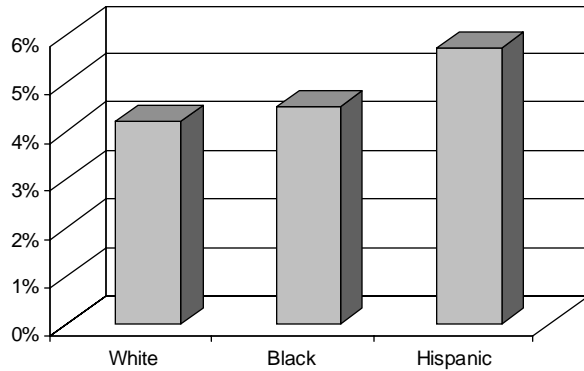
Slightly more than half of contingent workers were women compared with 46 percent of noncontingent workers. And a higher share of blacks and Hispanics were contingent workers compared to whites (see *Figure 9*).

More than three-fifths of young contingent workers were in school, compared with two-fifths of their noncontingent counterparts. Among 25-to-64-year-olds, a higher proportion of contingent than noncontingent workers had graduated from college—36 and 30 percent, respectively (see *Figure 10*).

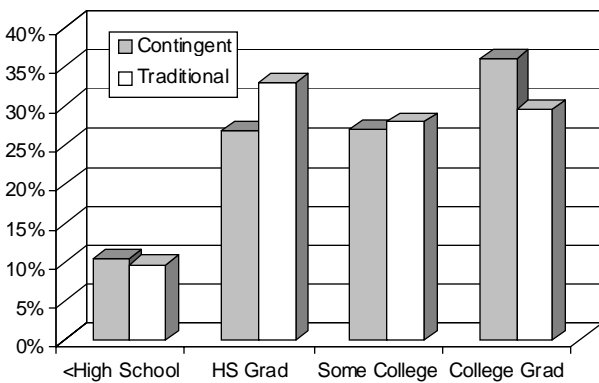
**Figure 8**  
Share of Contingent Workers by Age  
U.S. Average, February 1997  
Source: Bureau of Labor Statistics



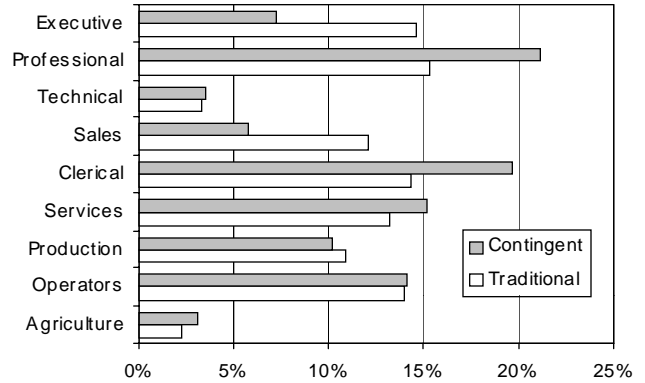
**Figure 9**  
Share of Contingency by Race and Hispanic Origin  
U.S. Average, February 1997  
Source: Bureau of Labor Statistics



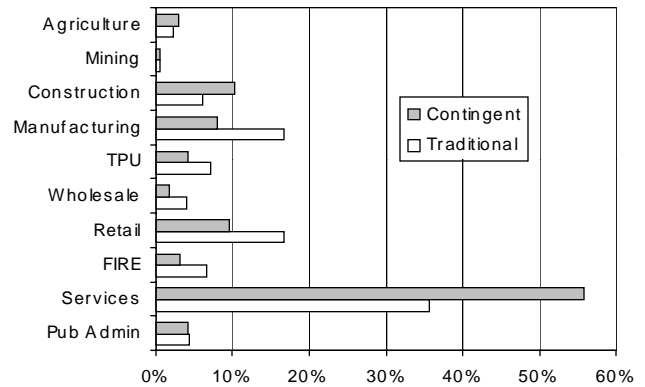
**Figure 10**  
Distribution of Contingent Workers by Educational Attainment  
U.S. Average, February 1997  
Source: Bureau of Labor Statistics



**Figure 11**  
Distribution of Contingent Workers by Occupation  
U.S. Average, February 1997  
Source: Bureau of Labor Statistics



**Figure 12**  
Distribution of Contingent Workers by Industry  
U.S. Average, February 1997  
Source: Bureau of Labor Statistics



## Occupation and Industry of Contingent Workers

Contingent workers were employed in a wide range of jobs. They were more likely than noncontingent workers to hold professional and administrative support positions and less likely to be in managerial and sales jobs (see Figure 11). They also were over-represented in the services and construction industries (see Figure 12).

## Alternative Employment Arrangements

The February 1997 supplement also measured the characteristics of workers in four alternative employment arrangements—independent contractors, on-call workers, temporary help agency workers, workers employed by contract firms, and day laborers. These workers

*Continued page 14*

Feature Article *continued*

represented 9.9 percent of all those employed—about 12.5 million workers (see Figure 13). In general, the results of the 1997 survey were very similar to those of the 1995 survey with respect to the numbers and characteristics of these workers. As in the earlier survey, workers in the five groups differed considerably from one another as well as from workers in traditional arrangements.

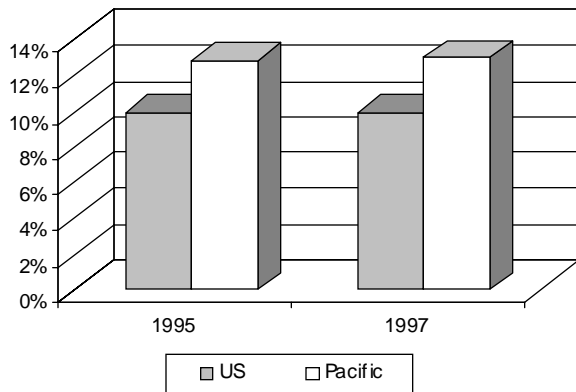
**Independent Contractors**

Independent contractors, independent consultants, and free-lance workers made up the largest group of workers in alternative employment arrangements (see Figure 14). Workers in

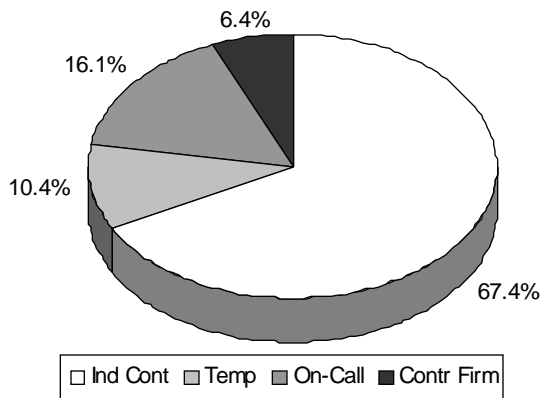
this group were considerably more likely than workers in traditional arrangements to be men, white, at least 35 years old, and college educated. Specifically, two-thirds of the independent contractors were men, compared with just over one-half of workers in traditional arrangements (see Figure 15). Nearly 4 out of 5 were at least 35 years old, compared with 3 out of 5 traditional workers. Fully one-third of independent contractors had a college degree, a higher proportion than traditional workers (see Figure 16).

Independent contractors were more likely than traditional workers to hold managerial, sales, or precision production jobs. Relatively few were in technical, administrative support, or operator, fabricator, and laborer positions. Independent contractors were over-represented

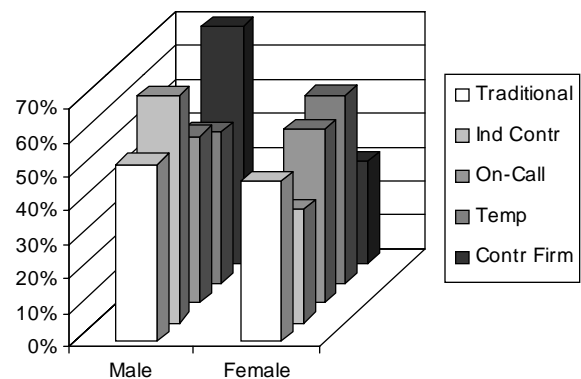
**Figure 13**  
Alternative Work Arrangement Jobs as a Share of Total Jobs  
Pacific States and U.S., 1995 and 1997  
Source: Bureau of Labor Statistics



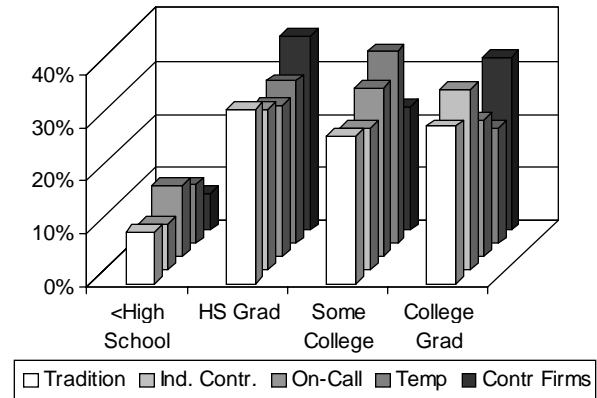
**Figure 14**  
Distribution of Alternative Work Arrangements  
U.S. Average, February 1997  
Source: Bureau of Labor Statistics



**Figure 15**  
Distribution of Alternative Work Arrangements by Sex  
U.S. Average, February 1997  
Source: Bureau of Labor Statistics



**Figure 16**  
Distrib. of Alternative Work Arrange. by Educational Attainment  
U.S. Average, February 1997  
Source: Bureau of Labor Statistics





in the agriculture, construction, and services industries. About 26 percent of them worked part time, compared with about 18 percent of traditional workers.

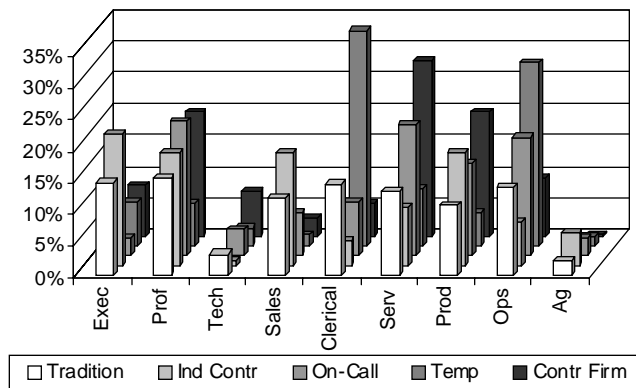
## On-Call Workers

On-call workers, who made up the second largest alternative arrangement, are defined as those who report to work only when called, although they can be scheduled to work for several days or weeks in a row. Demographically, they resembled workers in traditional arrangements, but on-call workers were somewhat younger. They also were more likely to be in professional, service, precision production, and operator, fabricator, and laborer occupations (see Figure 17) and in the services and construction industries. Nearly 53 percent worked part time, the highest proportion of any employment arrangement.

## Temporary Help Agency Workers

Workers paid by temporary help agencies were more likely than workers in traditional arrangements to be women, young, black, or Hispanic (see Figure 18). Eighty percent worked full time. They were heavily concentrated in administrative support and operator, fabricator, and laborer positions and in the services and manufacturing industries.

**Figure 17**  
Distribution of Alternative Work Arrangements by Occupation  
U.S. Average, February 1997  
Source: Bureau of Labor Statistics

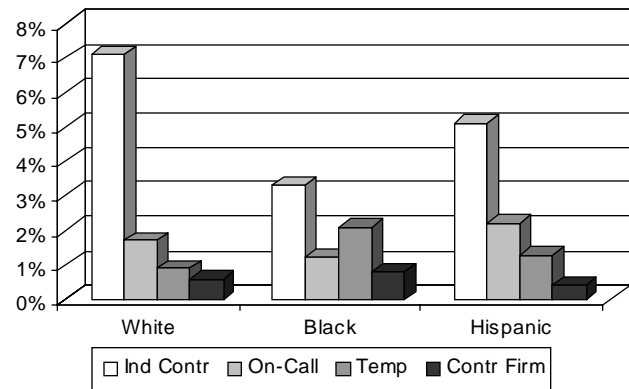


## Workers Provided by Contract Firms

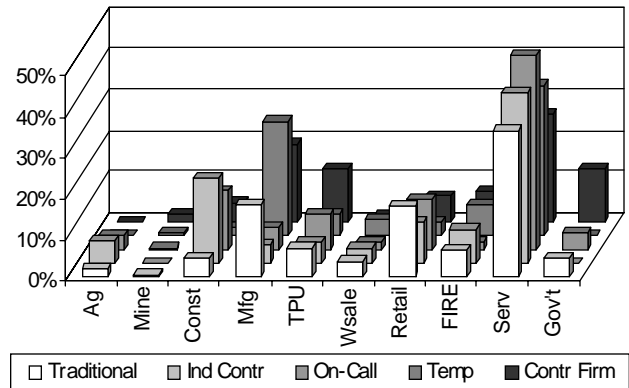
Individuals who are employed by companies that provide workers or their services to other companies under contract are in the smallest of the alternative arrangements; these workers are assigned to one customer at a time and perform the work at the customer's worksite. This group was disproportionately male and nearly one-third had a college degree. Most were assigned to the services, manufacturing, public administration, or transportation and public utilities industries (see Figure 19).

Continued page 16

**Figure 18**  
% Alternative Work Arrangements by Race & Hispanic Origin  
U.S. Average, February 1997  
Source: Bureau of Labor Statistics



**Figure 19**  
Distribution of Alternative Work Arrangements by Industry  
U.S. Average, February 1997  
Source: Bureau of Labor Statistics



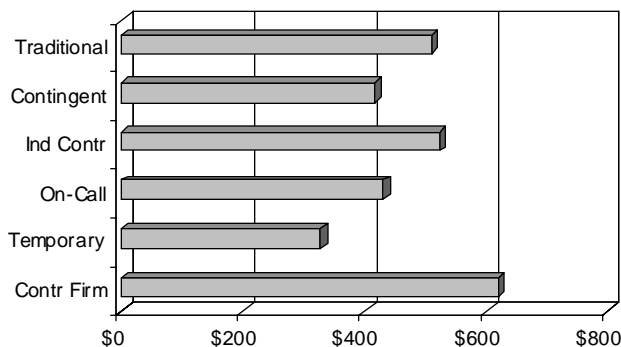
## Feature Article *continued*

### Wages

Among workers employed full time, there was wide variation in the median earnings of those in contingent and alternative work arrangements relative to one another and to workers in traditional arrangements. In February 1997, median earnings were lower for contingent workers than for their noncontingent counterparts. Full-time contingent workers' median earnings (\$417) were 82 percent of those of noncontingent workers (\$510) in February 1997 (see Figure 20). Median weekly earnings for workers employed by contract companies (\$619) were also higher than earnings for workers in traditional arrangements, while earnings for independent contractors were about the same (\$523). Earnings for on-call workers (\$432) and those employed by temporary help agencies (\$329) were lower. This pattern held for men; however, women in traditional arrangements out-earned women in every alternative arrangement.

The earnings differences between the alternative work arrangements reflect in part the occupational concentration of each arrangement. For example, workers employed by temporary help agencies were more likely to hold administrative support and laborer jobs, which pay lower-than-average wages, in general. In

**Figure 20**  
Median Weekly Earnings:  
Contingent and Alternative Arrangement Workers  
U.S. Average, February 1997  
Source: Bureau of Labor Statistics



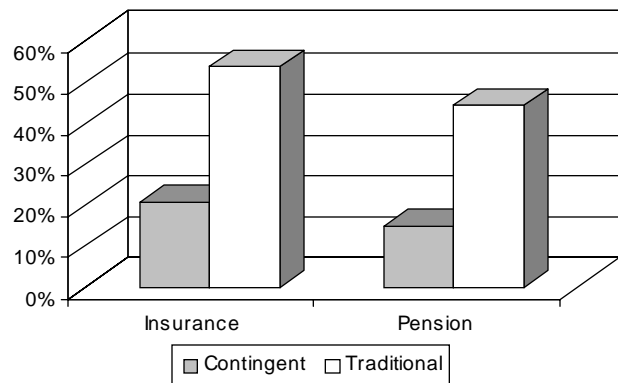
contrast, independent contractors were more likely to be in higher-paying managerial and professional specialty jobs.

### Benefits

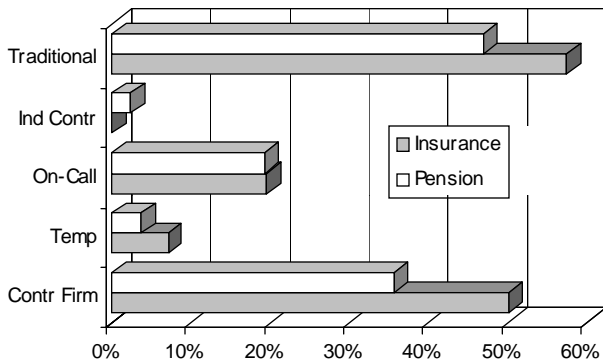
Contingent workers also were less likely to receive health insurance and pension benefits from their employers. Only 1 in 5 contingent workers had employer-provided health coverage, compared with more than 1 in 2 noncontingent workers (see Figure 21). Although contingent workers were less likely to have health insurance coverage through their jobs, a substantial proportion (two-thirds) had some type of coverage, including those who were covered by family members' policies or who had purchased coverage on their own. Contingent workers also were less likely to actually participate in employer-provided pension plans—15 versus 44 percent, respectively.

Contract company workers were most likely to receive health insurance coverage from their employers; 1 in 2 received employer-provided health insurance (see Figure 22). Among temporary help agency workers, in contrast, only 1 in 14 had employer-provided health insurance. Nearly 3 in 5 workers in traditional arrangements had health insurance coverage through their employer.

**Figure 21**  
Contingent Worker Benefits  
U.S. Average, February 1997  
Source: Bureau of Labor Statistics



**Figure 22**  
Alternative Work Arrangement Benefits  
U.S. Average, February 1997  
Source: Bureau of Labor Statistics



Of the four alternative work arrangements, 36 percent of contract company workers actually participated in an employer-provided pension plan, compared with 19 percent of on-call workers and only 4 percent of temporary help agency workers. By comparison, nearly half of workers in traditional arrangements participated in a pension plan at work.

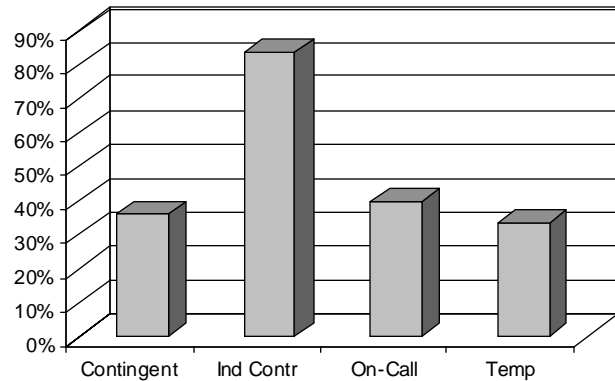
### Job Preferences of Contingent and Alternative Arrangement Workers

Based on the pay and benefit data alone, it comes as no surprise that the majority of contingent workers (56 percent) would have preferred noncontingent, or traditional jobs. Still, over one-third preferred their arrangement (see Figure 23), and the remainder expressed no clear preference. At the same time Independent contractors had a much stronger preference for their employment arrangement than did workers in the other alternative arrangements, with 84 percent preferring their arrangement to a traditional job. Only 40 percent of on-call workers preferred their arrangement. Nearly 60 percent of temporary help workers would have preferred a traditional job.

### Changes: 1995-1997: Flat or Down, Take Your Pick

Though the characteristics of contingent and alternative work arrangement employees have been relatively constant between 1995 and 1997,

**Figure 23**  
Share of Workers who Prefer Contingent or Alternative Work Arrangement  
U.S. Average, February 1997  
Source: Bureau of Labor Statistics



some interesting, if not counter-intuitive changes occurred. The most obvious change has been the decline in share of contingent workers. In 1995, contingent workers represented 4.9 percent of the employed population. In 1997 that ratio had fallen to 4.4 percent. As a result, some 460,000 fewer workers were contingent in 1997 as compared to 1995 (see Figure 24). From a change rate perspective, non-contingent employment grew 3.4 percent during the survey period while contingent employment fell 7.6 percent.

**Figure 24**  
Change in Contingent Workers  
U.S. Average, February 1995-1997  
Source: Bureau of Labor Statistics

	Feb-95	Feb-97	Change	
			Number	Percent
Total Employed	123,208	126,742	3,534	2.9%
Contingent	6,034	5,574	-460	-7.6%
Not Contingent	117,174	121,168	3,994	3.4%

### Alternatives Abound

Unlike the change in use of contingent workers, the use of alternative work arrangement employees grew at a 3.2 percent clip between 1995 and 1997 (see Figure 25). While this was quicker than the 2.8 percent growth in traditional employment, it was not so great as to boost the total share of alternative work arrangement employees. More importantly, there was a definite shuffling of the mix during this period.

*Continued page 18*

## Feature Article *continued*

**Figure 25**

Change in Alternative Work Arrangements  
U.S. Average, February 1995-1997  
Source: Bureau of Labor Statistics

	Feb-95	Feb-97	Change	
			Number	Percent
Total Employed	123,208	126,742	3,534	2.9%
Total Alternative	12,156	12,543	387	3.2%
Independent Contr	8,309	8,456	147	1.8%
Temporary	1,181	1,300	119	10.1%
Contract Company	652	809	157	24.1%
On-call	2,078	2,023	-55	-2.6%
Not Alternative	111,052	114,199	3,147	2.8%

As in all comparisons the highs and lows stand out. In this instance, the low was the most prominent. Between February 1995 and February 1997, the use of *on-call workers and day laborers* actually declined by 2.6 percent. This was the second largest category in 1995, at almost 2.1 million workers. By 1997, use of on-call workers and day laborers had fallen by 55,000 workers nationwide.

The fastest growing category was workers *employed by a contract company*. This category grew by just over 24 percent. In absolute numbers, that was an additional 157,000 workers between 1995 and 1997, to reach a total of 809,000 workers.

The next fastest growing category was workers *employed by a temporary help company*. Use of these workers advanced 10.1 percent between February 1995 and February 1997. That growth rate represented an extra 119,000 workers and a grand total of 1.3 million by 1997.

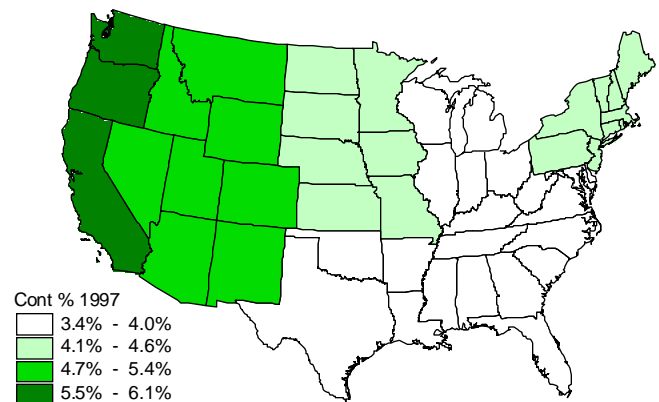
At 1.8 percent, the change in *independent contractors* was well behind the double-digit growth in workers employed by contract companies or temporary help companies. But because of their large base—over 8.3 million workers in 1995—this modest growth rate still resulted in the second highest absolute gain within these five categories at 147,000 workers.

### Divisional Differences

These data are not available for the individual states, but they are available at what is called the division level, or by groups of states. Divisional

**Figure 26**

Use of Contingent Workers by State Divisions  
February 1997  
Source: Bureau of Labor Statistics

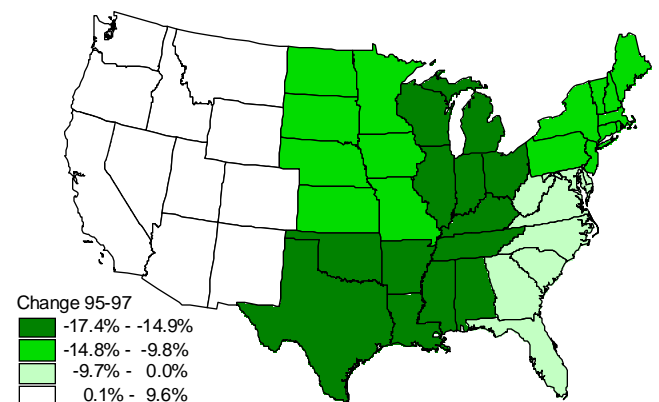


use of contingent and alternative work arrangements differ considerably. The Pacific states had the greatest proportion of contingent workers in February 1997 with 6.1 percent (*see Figure 26*). The East South Central states had the lowest proportion with 3.4 percent. In no state division, other than those in the West, did the proportion of contingent workers exceed 5.0 percent.

Divisional differences in the use of alternative employment arrangement workers are similar to differences in the use of contingent workers. In February of 1997 the Pacific states had the highest proportion of workers in these arrangements at 13.0 percent compared to the nationwide average of 9.9 percent (*see Figure 27*). The lowest ratio of alternative arrangement workers was found in the Middle Atlantic states at 8.3 percent.

**Figure 27**

Change in Use of Contingent Workers by State Divisions  
1995-1997  
Source: Bureau of Labor Statistics



## Divisional Changes

Use of contingent workers in the Pacific states rose from 5.8 percent in 1995 to 6.1 percent in 1997. And the use of workers with alternative work arrangements rose from 12.8 percent in 1995 to 13 percent in 1997. Truth be told; neither of these may constitute a statistically significant trend since the differences may fall within the range of error. However, in other state divisions the trends are more acute and are probably substantial enough to be statistically significant.

The most intriguing trend in the use of contingent workers is that only the Mountain and Pacific states showed increases of 2.6 percent and 9.6 percent respectively (see Figure 28). All other state divisions showed a decline. Most notable were the trends in the Southern states. The East south central states had a 17.4 percent decline in contingent worker counts and the South Atlantic states showed a 9.6 percent drop.

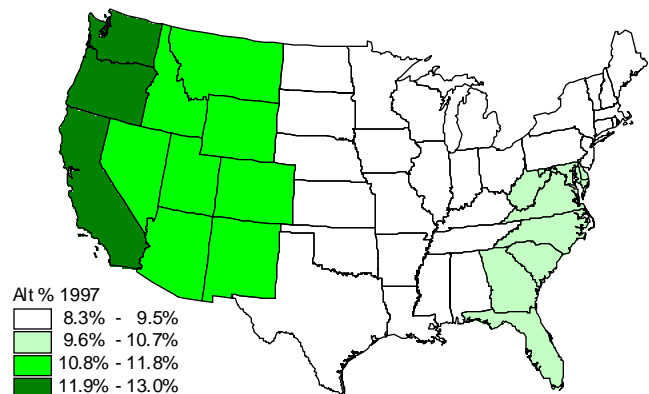
Though the Pacific states had the highest incidence of workers in alternative employment arrangements, the greatest changes in the use of these workers between 1995 and 1997 occurred elsewhere. In the New England and Middle Atlantic States, the use of alternative work arrangement employees declined over 10 percent in the two-year interval (see Figure 29). On the other end of the range, use of alternative work arrangement employees jumped nearly 20 percent in the West South Central States.

## Conclusion

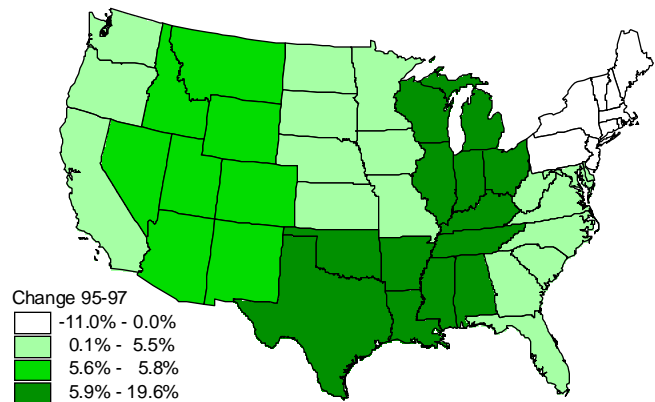
Nationwide, the use of contingent and alternative work arrangement employees changed little between February 1995 and February 1997. In the use of contingent workers, what change occurred tended to be downward to the tune of 460,000 workers nationwide. On the other hand, the use of alternative work arrangement workers expanded at a rate similar to total employment, rising by 387,000 workers nationwide.

Most intriguing in this analysis is the fact that between 1995 and 1997, use of contingent workers fell in all but the Western states. In the meantime, use of alternative work arrangement workers increased in all but the northeastern states.

**Figure 28**  
Use of Alternative Work Arrangements by State Divisions  
February 1997  
Source: Bureau of Labor Statistics



**Figure 29**  
Change in Alternative Work Arrangements by State Divisions  
1995-1997  
Source: Bureau of Labor Statistics



With such mixed and limited data it is difficult to proclaim any distinct trend. Such ambiguity can lead to a classic "it remains to be seen" non-conclusion. But by concentrating on the most obvious examples within the data set, some plausible inferences can be drawn. First, the declining share of contingent workers is likely indicative of the cyclical nature of their use. While 1995 was a positive year for economic growth, it was rather modest in both GDP and employment gains. With the economy strengthening through 1996 and into 1997, the caution formerly exhibited by employers eased and they were more likely to offer their new employees implicit or explicit contracts for ongoing employment.

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With excerpts from BLS news release #USDL 97-422

# Number of Jobs, Labor Market Experience, and Earnings Growth: *Results from a Longitudinal Survey*

## LABOR FORCE DEVELOPMENTS

Over the past decade, prognosticators have been prophesying that the average worker will change their *career* 7 or 8 or 9 times before they retire. As it turns out, the average worker in the U.S. holds 8.6 different *jobs* from the ages of 18 to 32, according to the Bureau of Labor Statistics of the U.S. Department of Labor, with the majority of the job changes taking place by age 27.

These findings are from the National Longitudinal Survey of Youth, a survey of 9,964 young men and women who were 14 to 22 years of age when first interviewed in 1979 and 31 to 39 when last interviewed in 1996. The survey provides information on work and non-work experiences, training, schooling, income and assets, health conditions, and other characteristics.

This report focuses on three aspects of labor market behavior: the number of jobs held, labor force participation, and earnings growth. Highlights from the longitudinal survey include:

- The average number of jobs held while ages 18 to 22 was 4.4. The average fell to 3.3 jobs during the next 5-year age period and to 2.6 jobs from ages 28 to 32. Since jobs that span age groups were counted more than once, the overall average for ages 18 to 32 was 8.6 jobs held.
- In 1991-95, men in their 30s were employed about 87 percent of the time and were out of the labor force 8 percent of the time. Women

in their 30s were employed for 71 percent of the time and were out of the labor force 25 percent of the time.

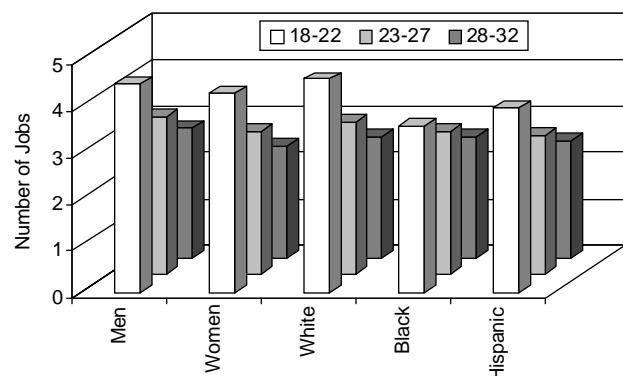
- The likelihood of experiencing a period of unemployment decreased as education increased. For persons in their 30s who were high school dropouts, over half had at least one period of unemployment during 1991-95, but of college graduates, only a fourth had a spell of unemployment.
- Real hourly earnings grew fastest in the early ages of 18 to 22.

## Number of Jobs Held

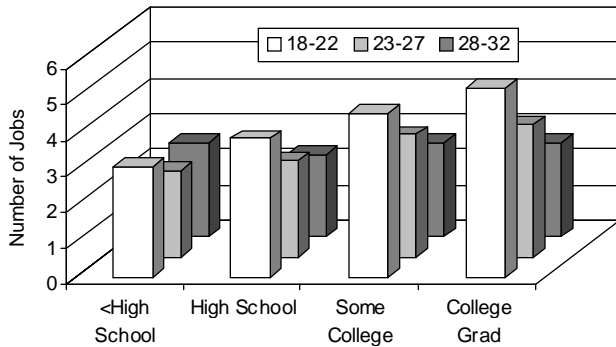
Young persons held an average of 8.6 jobs from ages 18 to 32, with nearly half of the job changes occurring in the earliest years. On average, men held 8.9 jobs and women held 8.3 jobs from the ages of 18 to 32. Men held 4.5 jobs while ages 18 to 22, but only 2.8 jobs while ages 28 to 32. The reduction in the number of jobs held was similar for women (*see Figure 30*).

Those who eventually obtained a college degree usually held more jobs between the ages of 18 and 22 than did those who ended their formal education after high school or before. This was particularly true for women. Women college graduates held 5.3 jobs while ages 18 to 22, compared with 3.9 jobs for high school graduates and 3.1 jobs for high school dropouts (*see Figure 31*). The larger number of jobs among those who attended college is because college

**Figure 30**  
Number of Jobs Held by Individuals Aged 18-32 in 1978-1995  
*Individuals Aged 31-38 in 1995*  
Source: *National Longitudinal Surveys*



**Figure 31**  
 Number of Jobs Held by Women Aged 18-32 in 1978-1995  
 by Educational Attainment  
 Individuals Aged 31-38 in 1995  
 Source: National Longitudinal Surveys



students hold summer jobs and part-time jobs when attending school while others are more likely to be employed full-time. At older ages, the number of jobs did not vary much by education, especially for men, as workers settled into more stable jobs.

Differences are apparent between race and ethnic groups. By age 32, whites held more jobs than either blacks or Hispanics. The differences were more pronounced at younger ages. Between the ages of 18 to 22, whites held 4.6 jobs, compared with 3.6 for blacks and 4.0 for Hispanics. Racial differences nearly disappeared at older ages; for those ages 28 to 32, individuals in all three race and ethnic groups held an average of 2.6 jobs. The number of jobs held by blacks increased substantially with education. By age 32, black college graduates had held two more jobs than black dropouts and nearly one and a half more jobs than high school graduates. The increase in jobs with education was not as pronounced for whites or Hispanics.

### Labor Force Activity During 1991-95

From 1991 through 1995, the average individual was employed over 79 percent of the time, was unemployed nearly 4 percent of the time, and was out of the labor force roughly 16 percent of the time (see Figure 32). When someone is *out of the labor force*, that means they were neither working nor looking for work—looking for work being the prerequisite for being counted as

**Figure 32**  
 Labor Force Experience, 1991-1995  
 Individuals Aged 31-38 in 1995  
 Source: National Longitudinal Surveys

	Percent of Total Weeks		
	Employed	Unemployed	Out of the Labor Force
<b>Total</b>	79.4%	3.8%	16.3%
<b>Men</b>	87.4%	4.3%	7.8%
Less than High School	75.2%	7.9%	16.2%
General Equivalence Diploma	76.5%	7.8%	15.3%
High School Diploma	88.3%	4.3%	6.9%
Some College, no Degree	86.7%	4.3%	8.2%
Associate Degree	91.9%	2.4%	5.5%
Bachelors Degree	95.6%	1.9%	2.2%
Advanced Degree	95.0%	1.6%	3.0%
<b>Women</b>	71.2%	3.3%	25.1%
Less than High School	48.8%	4.2%	46.9%
General Equivalence Diploma	61.5%	4.4%	33.8%
High School Diploma	69.8%	4.0%	25.8%
Some College, no Degree	76.6%	3.0%	19.9%
Associate Degree	75.0%	2.8%	21.7%
Bachelors Degree	79.8%	1.9%	17.7%
Advanced Degree	85.1%	1.3%	13.3%
<b>White</b>	81.6%	3.2%	14.9%
Less than High School	68.8%	5.5%	25.3%
General Equivalence Diploma	74.4%	5.4%	20.0%
High School Diploma	81.0%	3.4%	15.2%
Some College, no Degree	82.7%	3.1%	13.4%
Associate Degree	82.2%	2.2%	15.4%
Bachelors Degree	87.3%	1.9%	10.4%
Advanced Degree	90.5%	1.3%	7.8%
<b>Black</b>	70.1%	7.2%	22.1%
Less than High School	48.2%	9.8%	41.4%
General Equivalence Diploma	57.3%	9.4%	32.9%
High School Diploma	71.1%	8.2%	20.1%
Some College, no Degree	77.3%	5.7%	16.4%
Associate Degree	78.8%	5.2%	14.9%
Bachelors Degree	90.7%	2.7%	6.2%
Advanced Degree	91.7%	2.3%	6.1%
<b>Hispanic</b>	74.8%	4.4%	20.0%
Less than High School	62.2%	5.7%	31.2%
General Equivalence Diploma	66.0%	6.8%	26.0%
High School Diploma	77.4%	4.5%	17.6%
Some College, no Degree	79.0%	3.7%	15.9%
Associate Degree	85.6%	2.7%	11.1%
Bachelors Degree	88.8%	1.3%	9.1%
Advanced Degree	(1)	(1)	(1)

(1) Data not shown when unweighted cell size less than 50.

unemployed. Generally, men worked more weeks than women but also spent more time unemployed. Women, when not working, spent more time out of the labor force than men. From 1991 to 1995, men worked about 87 percent of the time and were unemployed about 4 percent of the time, while women worked about 71 percent of the time and were unemployed slightly more than 3 percent of the time. As a result, women spent 25.1 percent of the time out of the labor force,

Continued page 22

## Labor Force Developments *continued*

compared with only 7.8 percent for men. The gap in weeks worked by men and women was slightly smaller at higher educational levels.

Individuals with less education were also employed less. In 1991-95, male high school dropouts were employed roughly 75 percent of the time, nearly 12 percentage points less than men with a high school diploma and about 20 percentage points less than male college graduates. More pronounced differences by education were present for women.

Interestingly, women dropouts spent nearly an equal amount of time out of the labor force as employed (46.9 and 48.8 percent, respectively), with little time unemployed (4.2 percent). Women dropouts spent considerably less time employed than women with either a high school diploma or college degree.

The labor market experience of those with high school equivalency diplomas more closely match those of high school dropouts than of high school graduates, especially for men. Men with a high school equivalency diploma were employed approximately 77 percent of the time during 1991-95, while those with a high school diploma were employed nearly 88 percent of that time. Men with high school equivalency diplomas were unemployed 7.8 percent of the time during 1991-95, similar to the 7.9 percent for high school dropouts but more than the 4.8 percent spent unemployed by high school graduates.

Compared with whites and Hispanics, blacks spent more time unemployed and out of the labor force. Blacks worked about 70 percent of the weeks from 1991 through 1995, Hispanics worked nearly 75 percent of the time, and whites worked about 82 percent of those weeks.

Race and ethnic differentials are greater at lower levels of education and smaller among the more educated. From 1991 to 1995, blacks with less than a high school education spent less time employed than either their white or Hispanic counterparts. Black high school dropouts spent nearly 10 percent of the time unemployed and over 41 percent of the time out of the labor force,

compared with nearly 6 and 25 percent, respectively, for whites with the same level of education. Among college graduates, however, racial differences were narrower and reversed, with blacks spending more time employed and less time out of the labor force than whites or Hispanics.

## Periods of Unemployment

Roughly 37 percent of both men and women experienced at least one period of unemployment from 1991 to 1995. Among those who had at least one week of unemployment during the term, 46 percent reported only one period, nearly 25 percent reported two periods, and over 29 percent reported three or more periods (*see Figure 33*). On average, the total number of unemployment periods for those who experienced unemployment during the 5-year term was 2.2 for men and 2.0 for women.

*Figure 33*

Number of Unemployment Spells, 1991-1995  
Individuals Aged 31-38 in 1995 Reporting at Least One Spell  
of Unemployment by Race, Sex, & Educational Attainment  
Source: *National Longitudinal Surveys*

Age in 1995 and Characteristics	Number of Spells 1991-95	Percent Distribution		
		One Spell	Two Spells	Three+ Spells
<b>Total</b>	2.1	46.1%	24.8%	29.2%
<b>Men</b>	2.2	42.6%	25.3%	33.2%
Less than High School Diploma	2.2	39.3%	25.3%	35.4%
High School Graduate, no College	2.4	39.5%	23.3%	37.2%
Less than College Degree	2.2	41.3%	24.4%	34.3%
College Graduates	1.6	60.2%	25.8%	14.0%
<b>Women</b>	2.0	49.8%	25.3%	25.0%
Less than High School Diploma	2.1	50.1%	22.7%	27.2%
High School Graduate, no College	2.1	46.9%	24.8%	28.4%
Less than College Degree	2.0	45.8%	28.1%	26.0%
College Graduates	1.6	63.2%	25.0%	11.9%
<b>White</b>	2.1	47.7%	24.6%	27.7%
Less than High School Diploma	2.1	46.1%	24.0%	30.0%
High School Graduate, no College	2.2	44.7%	23.6%	31.7%
Less than College Degree	2.1	42.3%	26.3%	31.4%
College Graduates	1.6	62.6%	25.8%	(1)
<b>Black</b>	2.3	39.6%	26.6%	33.8%
Less than High School Diploma	2.4	37.2%	23.1%	39.7%
High School Graduate, no College	2.4	36.6%	26.0%	37.4%
Less than College Degree	2.0	44.6%	31.6%	23.8%
College Graduates	1.8	(1)	(1)	(1)
<b>Hispanic</b>	2.0	49.3%	24.5%	26.2%
Less than High School Diploma	2.2	42.9%	27.7%	29.4%
High School Graduate, no College	2.0	48.7%	26.7%	24.6%
Less than College Degree	1.9	55.6%	(1)	(1)
College Graduates	(1)	(1)	(1)	(1)

(1) Data not shown when unweighted cell size less than 50.



Among those who experienced unemployment during 1991-95, men tended to have more unemployment periods than women. Thirty-three percent of men reported three or more periods, compared with 25 percent of women. Although blacks and Hispanics were more likely than whites to experience an unemployment period, the distribution did not vary greatly by race or ethnicity.

Individuals with more education are less likely to experience unemployment periods. Among male high school graduates with at least one episode of unemployment, 39.5 percent had just one unemployment interval, 23.3 percent had two intervals, and 37.2 percent had three or more. For male college graduates, 60.2 percent had one interval, 25.8 percent had two, and only 14 percent had three or more. Differences by education were similar for women.

## Growth Rates in Real Earnings

The earnings of individuals tend to increase more rapidly when they are young. Between the ages of 18 to 22, real hourly earnings grew an average of 7.4 percent per year (see Figure 34). The growth rate slowed to 5.5 percent annually while ages 23 to 27 and 2.6 percent annually from ages 28 to 32. This is primarily a function of the low starting point at which workers wages begin.

In general, growth rates do not appear to differ much by gender. However, annual earnings growth between the ages of 23 to 27 was higher for men than women. The gender difference in growth rates between these ages was largest among those with at least some college education. Men with a college degree experienced real earnings growth of 10.5 percent per year while ages 23 to 27, compared with 8.3 percent annual growth for women college graduates. This difference may partly reflect gender differences in choice of college majors, with men having been more likely to enter high-paying occupations such as engineering. It may also reflect the greater work force continuity among males; recall that women spent over 25 percent of this period out of the work force compared to less than 8 percent among men.

**Figure 34**  
Average Annual Growth Rates in Real Hourly Earnings, 1978-95  
Individuals Aged 31-38 in 1995  
By Race, Sex, and Educational Attainment  
Source: *National Longitudinal Surveys*

Age in 1995 and Characteristics	18-22 Years	23-27 Years	28-32 Years
<b>Total</b>	7.4%	5.5%	2.6%
<b>Men</b>	7.1%	6.1%	2.3%
Less than High School Diploma	4.9%	3.4%	1.1%
High School Graduate, no College	7.3%	3.8%	1.1%
Less than College Degree	7.1%	7.7%	2.1%
College Graduates	8.4%	10.5%	5.4%
<b>Women</b>	7.6%	4.9%	2.9%
Less than High School Diploma	9.1%	2.9%	0.9%
High School Graduate, no College	6.1%	3.3%	2.9%
Less than College Degree	6.8%	4.7%	2.4%
College Graduates	10.3%	8.3%	4.4%
<b>White</b>	7.7%	5.6%	2.6%
Less than High School Diploma	7.2%	3.2%	1.0%
High School Graduate, no College	6.8%	3.4%	2.0%
Less than College Degree	7.3%	6.3%	1.9%
College Graduates	9.5%	9.5%	4.9%
<b>Black</b>	5.9%	5.1%	2.3%
Less than High School Diploma	4.4%	3.2%	1.3%
High School Graduate, no College	5.8%	4.5%	1.4%
Less than College Degree	5.6%	5.2%	3.0%
College Graduates	8.3%	9.0%	5.0%
<b>Hispanic</b>	6.9%	4.3%	1.9%
Less than High School Diploma	4.9%	4.4%	0.8%
High School Graduate, no College	7.6%	2.9%	1.5%
Less than College Degree	7.1%	4.5%	2.6%
College Graduates	8.5%	8.0%	3.9%

Growth rates in real hourly earnings are almost always higher for those with more education. This was particularly true at older ages, where the real hourly earnings growth rate among college graduates consistently outpaced their less-educated counterparts. Growth in real hourly earnings between ages 23 to 27 for male college graduates (10.5 percent) greatly exceeded that of high school graduates (3.8 percent) and dropouts (3.4 percent). By ages 28 to 32, the real earnings growth of men with a high school education or below fell to only 1.1 percent annually while male college graduates had annual real wage growth of 5.4 percent per year.

Growth rates in real hourly earnings do not appear to differ much by race and ethnicity. The only significant difference between blacks and whites occurred from ages 18 to 22. In those ages, whites had, on average, 7.7 percent growth in real wages per year, compared with 5.9 percent annually for blacks.

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## Epilogue

Longitudinal analysis is probably the most useful of all the labor market information tools. Unlike the usual aggregated data in which the universe is constantly changing, longitudinal data are based on the exact same sampling of subjects over time. Consequently, the results of these periodic surveys probably more reflect the *real life* experiences of those not surveyed.

That young people change their job frequently during their early labor market encounters is no surprise; more important is that the job changes can be quantified in detail. That wages increase with labor market experience is also no surprise; but specific wage progression by race, sex, and educational attainment is eminently useful.

The ongoing results of this longitudinal survey provide hard data that confirm old axioms. To get a good job, get a good education. Work hard and you'll get ahead. Keep your eye on the ball, your nose to the grindstone, and your ear to the ground... and you'll look darned silly. Well, you get the point.

■ Robert Wm. Baker  
Senior Economic Analyst

*With excerpts from BLS release #USDL 98-253*

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# The Consumer Price Index: *New and Improved*

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## LOCAL AND NATIONAL DATA DEVELOPMENTS

Just when you thought you knew your way around the Consumer Price Index (CPI) for the Seattle-Tacoma region, along comes the Bureau of Labor Statistics and changes the whole kit-and-caboodle. Not only did they change the area of coverage, but they changed the expenditure weights and time frame as well.

The good news is this should make the CPI more current and more reflective of local consumer's actual shopping experience.

The bad news is this constitutes a break in series, and the first year's data will not work particularly well for over-the-year comparisons. But once there is a year's worth of data in the new series, annualized measures will be pretty much back to normal.

## Why?

Why does the Bureau of Labor Statistics do all this? Well think back to when you were a teenager. You probably spent an inordinate proportion of your resources on amusement and recreation, the rest you probably squandered. Now, as an older consumer, you likely have rent or a mortgage, food, clothing, insurance, and a multitude of other expenses. Consider also retirees. Their purchases and expenses are different still, with a high proportion going to healthcare. Because of this changing mix of age cohorts—in this period the U.S. is experiencing a distinct aging of its population—the mix of goods and services in demand throughout the economy is altered.

Consider also the introduction of new goods and services over the last 10 or 15 years—

electronic products, home computers, and computer games, are perfect examples. Fifteen years ago only one in twelve households owned a home computer, today that ratio is over one in three. To be an accurate representation of the market place, these items need to be included or given greater emphasis.

## Purchasing Patterns Periodically Perused

To determine exactly what consumers are purchasing, BLS periodically conducts Consumer Expenditure Surveys. From the results of those surveys, the consumer market basket used in the CPI calculations is readjusted to reflect more current spending patterns.

## Guide to Available CPI Data

National CPI data (U.S. city averages) are released each month by the Bureau of Labor Statistics (BLS) about 2 weeks after the reference period—the CPI for January is released in mid-February, for example. Often neglected in the attention to the overall national inflation rate, however, is that the CPI publishes thousands of other price indexes each month.

## Published Areas

BLS publishes indexes monthly for the U.S., 4 regions (Northeast, Midwest, South, and West), 3 population size-classes (A, B/C, and D) and 10 region-by-size groups (Northeast-Size Class A, South-Size Class D, etc.). The A population size class represents all metropolitan areas over 1.5 million in population; B/C represents mid-sized and small metropolitan areas of fewer than 1.5 million; and D, all non-metropolitan urban areas. Due to insufficient sample sizes, region-by-size indexes are not published for Northeast and West Size Class D.

In addition, BLS publishes CPI information for 26 metropolitan areas. Some of these metropolitan areas, as defined by the Bureau of the Census, include suburbs or counties that extend across state boundaries. The 26 metropolitan areas are available on the following schedule:

### *Monthly*

Chicago-Gary-Kenosha, IL-IN-WI (CMSA)  
 Los Angeles-Riverside-Orange County, CA (CMSA)  
 New York-Northern New Jersey-Long Island, NY-NJ-CT-PA (CMSA)

### *Bimonthly*

*(odd months are January, March, etc.; even months are February, April, etc.)*

Atlanta, GA (MSA)	even
Boston-Brockton-Nashua, MA-NH-ME-CT (MSA)	odd
Cleveland-Akron, OH (CMSA)	odd
Dallas-Fort Worth, TX	odd
Detroit-Ann Arbor-Flint, MI (CMSA)	even
Houston-Galveston-Brazoria, TX (CMSA)	even
Miami-Fort Lauderdale, FL (CMSA)	even
Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD (CMSA)	even
San Francisco-Oakland-San Jose, CA (CMSA)	even
Seattle-Tacoma-Bremerton, WA (CMSA)	even
Washington-Baltimore, DC-MD-VA-WV (CMSA)	odd

### *Semiannually*

*(arithmetic averages for the 6-month periods from January through June and July through December)*

Anchorage, AK (MSA)  
 Cincinnati-Hamilton, OH-KY-IN (CMSA)  
 Denver-Boulder-Greeley, CO (CMSA)  
 Honolulu, HI (MSA)  
 Kansas City, MO-KS (MSA)  
 Milwaukee-Racine, WI (CMSA)  
 Minneapolis-St. Paul, MN-WI (MSA)  
 Pittsburgh, PA (MSA)  
 Portland-Salem, OR-WA (CMSA)  
 St. Louis, MO-IL (MSA)  
 San Diego, CA (MSA)  
 Tampa-St. Petersburg-Clearwater, FL (MSA)

## Population Coverage

For each published CPI data series, two separate indexes are available: All Urban Consumers (CPI-U) and Urban Wage Earners and Clerical Workers (CPI-W). Both the CPI-U and the CPI-W reflect only the buying habits of urban consumers. The CPI-U is the more comprehensive of the two and represents the expenditures by all urban consumers, about 87 percent of the total U.S. population.

The CPI-W represents a subset of the CPI-U population, that is, the expenditures by urban households that derive more than one-half of their income from clerical or hourly wage occupations. These households comprise about 32 percent of the total U.S. population.

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## Local & National Developments *continued*

### Reference Base

The CPI is a tool that simplifies the measurement of changes in prices over time. By selecting an appropriate reference base and setting the average index level for that time period equal to 100, it is possible to compare this month's (or last year's) price index level with the reference base period or to any other time period. The current standard reference base period is 1982-84=100. That is, all price changes are measured from a base (100) that represents the average index level of the 36-month period encompassing 1982, 1983, and 1984.

Prior to the release of the CPI for January 1988, the standard reference base was 1967=100. As a service to those with existing escalation provisions, BLS continues to publish CPI all-items indexes for the U.S. city average and all local areas using the old base. Note that, although comparisons cannot be made between indexes with different reference bases, the conversion to a new reference base does not affect the measurement of percent changes in a given index series from one time period to another, except for rounding differences.

In addition, BLS publishes several index series with a reference base more recent than January 1982. These indexes either could not be rebased because historical price data were not available for the entire 1982-84 reference base period or they represent items (such as mid-grade gasoline) that only recently were introduced into the CPI.

### The CPI Market Basket

The CPI market basket represents all the consumer goods and services purchased by urban households. Price data are collected for over 180 categories, which BLS has grouped into 8 major groups. These major groups, with examples of categories in each, are as follows:

- Food and beverages (ham, eggs, carbonated drinks, coffee, meals and snacks);

- Housing (rent of primary residence, fuel oil, bedroom furniture);
- Apparel (men's shirts and sweaters, women's dresses, jewelry);
- Transportation (new vehicles, gasoline, tires, airline fares);
- Medical care (prescription drugs and medical supplies, physicians' services, eyeglasses and eye care, hospital services);
- Recreation (television sets, cable TV, pets and pet products, sports equipment, admissions);
- Education and communication (college tuition, postage, telephone services, computer software and accessories);
- Other goods and services (tobacco and smoking products, haircuts and other personal care services, funeral expenses).

Exact weights for these expenditure categories are contrasted in *Figure 35*. These percentages are based on household expenditures as determined by the expenditure survey.

Indexes for all of the above categories are published at the U.S. City average level. Due to limitations in sample size, however, many of the smaller expenditure categories are not available at regional and local area levels. Instead, related categories are joined and published as part of a more comprehensive category. For example, physicians' services and eyeglasses and eye care are combined with similar categories and published as professional medical services at the regional level. At the metropolitan area level, professional medical services is, in turn, combined further and published as medical care.

### Seasonal Adjustment

Many of the goods and services included in the CPI market basket exhibit "seasonal" patterns of price movement. BLS factors out the seasonal trends from the underlying change in prices and publishes the resulting seasonally adjusted price indexes for those goods and services that display consistent seasonal patterns of price change.

Figure 35

Relative Importance of Components in the Consumer Price Indexes  
 For All Urban Consumers, Urban Wage Earners, and Clerical Workers  
 December 1997

Source: Bureau of Labor Statistics

Expenditure category, all items	U.S. City Average		Seattle-Tacoma-Bremerton	
	CPI-U	CPI-W	CPI-U	CPI-W
<b>Expenditure category, all items</b>	100.000	100.000	100.000	100.000
Food and beverages	16.310	17.903	15.406	16.596
Food at home	9.646	10.785	9.177	10.769
Food away from home	5.680	6.076	5.024	4.786
Alcoholic beverages	0.983	1.042	1.205	1.040
Housing	39.560	36.450	40.509	37.223
Shelter	29.788	27.033	31.315	29.185
Fuel and utilities	4.942	5.053	3.624	3.567
Household furnishings and operations	4.831	4.365	6.570	4.471
Apparel	4.944	5.300	4.444	4.518
Transportation	17.578	19.847	18.016	19.934
Private transportation	16.240	18.790	16.429	18.619
Motor fuel	2.995	3.682	2.857	3.511
Gasoline (all types)	2.976	3.658	2.828	3.476
Medical care	5.614	4.591	4.680	3.513
Recreation	6.145	5.969	7.384	7.966
Education and communication	5.528	5.396	5.530	6.063
Other goods and services	4.321	4.544	4.031	4.187
<b>Commodity and service group</b>				
Commodities	42.635	47.234	41.796	45.515
Commodities less food and beverages	26.326	29.331	26.392	28.919
Nondurables less food and beverages	14.729	15.928	13.913	14.570
Durables	11.596	13.403	12.479	14.349
Services	57.365	52.766	58.202	54.485

BLS publishes seasonally adjusted indexes only at the U.S. City average level (for both the CPI-U and CPI-W). They are not available for regional or local area levels. Seasonally adjusted indexes are not appropriate for use in escalation or cost-of-living adjustments (COLAs) because what consumers actually pay for goods and services is represented by the unadjusted data.

The principal concern for those who regularly use the Seattle-Tacoma CPI is how to link or crosswalk the new bimonthly Seattle-Tacoma-Bremerton series with the old semi-annual series. Over-the-year measures are important for many workers with cost of living adjustments in their contracts; businesses with inflation adjustments in their lease, rental, or purchase/delivery agreements; and policy makers who need an accurate and timely measure of inflation.

In reality, there is no need to try to link the two series. BLS is continuing with its semi-annual

series in 1998 so that there is overlap. This overlap should eliminate the need for some arithmetic connection and allow a reasonable transition period for conversion to the new index.

## What It Is What It Is Not

But because of the inevitable confusion, a more thorough understanding of past and current data is needed. In the earlier semi-annual series, price data for the CPI were collected throughout the reference periods—January through June, and July through December. What this means is that the resulting data were an average for those six-month spans, not the end points of June and December.

The newest data reference February, April, June, August, October, and December. The data are collected during the reference month therefore the data are for that month alone and not the

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## Local & National Developments *continued*

two-month span. As a result, these monthly data cannot be averaged, massaged, or arithmetically manipulated in any manner to arrive at a first half or second half average. But as mentioned earlier, BLS continues to collect data in the off-months in order to generate these six-month averages as well as an annual average.

### Additional Information

Additional information on the CPI can be found on the CPI Internet web site (<http://stats.bls.gov/cpihome.htm>). Information is also available at any of the eight BLS regional offices (located in Boston, New York, Philadelphia, Atlanta, Chicago, Dallas, Kansas City, and San Francisco). Plus the national information staff can be reached at (202) 606-7000. This information is also available to sensory impaired individuals upon request. Voice phone: (202) 606-7828; TDD phone: (202) 606-5897; TDD message referral phone: 1-800-326-2577.

■ *Robert Wm. Baker*  
*Senior Economic Analyst*

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# LMI REVIEW

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Dec. 1997 to Aug. 1998

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- Jobs for Welfare Recipients
- High Tech Industries in Washington: *Definition and Trends*

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