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THE EMPLOYMENT SITUATION: JULY 1999

HEARING

before the

JOINT ECONOMIC COMMITTEE CONGRESS OF THE UNITED STATES

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THE EMPLOYMENT SITUATION: JULY 1999

Friday, August 6, 1999

CONGRESS OF THE UNITED STATES,
JOINT ECONOMIC COMMITTEE,
WASHINGTON, D.C.

The Committee met, pursuant to notice, at 9:30 a.m., in Room 2212, Rayburn House Office Building, the Honorable Jim Saxton, Vice Chairman of the Committee, presiding.

Present: Representatives Saxton, Minge, Watt, and Ryan.

Staff Present: Chris Frenze, Robert Keleher, Darryl Evans, Colleen J. Healy, Howard Rosen, and Daphne Clones.

OPENING STATEMENT OF REPRESENTATIVE JIM SAXTON, VICE CHAIRMAN

Representative Saxton. Commissioner Abraham, it is again a pleasure to welcome you and your colleagues before the Joint Economic Committee (JEC).

The data released today show solid gains for American workers. The closely watched payroll survey posted a strong employment gain of 310,000 in July. The unemployment rate was 4.3 percent, and of late has been near its lowest level since the Nixon Administration.

The data released today reflect the continuation of the business cycle expansion that began in 1991. This expansion has created 20 million jobs since 1991, even as inflation has trended downward. The upswing has also flooded the Treasury with revenue, erasing the deficit and pushing the budget into surplus. The credit belongs to the American people for their hard work and creativity as workers, farmers and entrepreneurs, not to politicians here in Washington.

As I have pointed out many times before, to the extent this expansion has been fostered by policy, the noninflationary policy of the Federal Reserve deserves most of the credit. Federal Reserve policy reduced inflation and interest rates, laying a strong foundation for growth and lower unemployment. This policy of price stability created the strong economic environment characterized by declines in inflation, interest rates and unemployment all at the same time. This successful monetary policy over the course of this expansion demonstrates that the

notion of a Phillips curve trade-off between inflation and unemployment is mistaken.

Recently the Federal Reserve raised interest rates while Chairman Greenspan acknowledged that no clear evidence of inflation has yet emerged. In the absence of any significant evidence of inflation, it is my hope that the Federal Reserve will refrain from further interest rate increases. The forward-looking price indicators used by the JEC—bond yields, commodity prices, and the dollar—are somewhat mixed but still do not show clear and significant signs of higher inflation. While labor markets are fairly tight, we do not adhere to the notion that low unemployment causes higher inflation.

In sum, there is little evidence of inflation that would justify a Federal Reserve interest rate hike at this time. Until the forward-looking inflation indicators clearly indicate that higher inflation is definitely in the pipeline, an interest rate hike would be unjustified. Current Federal Reserve policy is sound. Until additional information suggests otherwise, this policy should be maintained on its current prudent course.

I would just like to emphasize what I just said. I brought my favorite chart with me which you have undoubtedly seen many times before. This chart shows that the rate of inflation and the unemployment rate have fallen steadily together throughout this expansion, and I just point this out to emphasize that a good labor market, meaning low unemployment, does not necessarily mean that we are beginning to see any signs of inflation. Quite the contrary is true. Commodity prices remain low. The value of the dollar remains sound and other indicators show that inflation remains in check, and so as the Federal Reserve considers its course of action over the next few weeks, I hope that they will continue to observe these fundamentals as they have in the past.

At this time, Commissioner Abraham, I would like to turn to you for your report on this month's employment data. We again welcome you here before the JEC.

[The prepared statement of Representative Saxton together with the chart entitled, "Inflation and the Unemployment Rate Fall Together Since 1992," appear in the Submissions for the Record.]

OPENING STATEMENT OF KATHARINE G. ABRAHAM, COMMISSIONER, BUREAU OF LABOR STATISTICS: ACCOMPANIED BY KENNETH V. DALTON, ASSOCIATE COMMISSIONER, OFFICE OF PRICES AND LIVING CONDITIONS; AND PHILIP L. RONES, ASSISTANT COMMISSIONER OF CURRENT EMPLOYMENT ANALYSIS

Ms. Abraham. Thank you, Mr. Chairman. It is always a pleasure to be here to talk about the employment and unemployment data that we are responsible for releasing.

The unemployment rate as measured by our household survey was unchanged at 4.3 percent in July and has been either 4.2 or 4.3 each month since March. Nonfarm payroll employment, as measured by our establishment survey, rose by 310,000 in July. This strong over-the-month increase followed a gain of 273,000 in June and was above the average monthly increase of 208,000 for the first half of 1999. Manufacturing and construction employment increased over the month, and several service producing industries posted sizable gains.

In July, employment and manufacturing rose by 31,000 after seasonal adjustment. This increase follows declines that totaled 490,000 since March 1998. In several durable goods industries, the employment declines that typically occur in July were smaller than usual this year. As a result, these industries posted over-the-month increases in employment after seasonal adjustment. Employment gains occurred in fabricated metals, industrial machinery, electrical equipment and motor vehicles and equipment. In addition, employment in furniture and fixtures increased and stone, clay, and glass products gained jobs. Employments in instruments and related products rose by 5,000, the first increase since its last peak in March of 1998.

Over the month, factory overtime rose to 4.8 hours, after seasonal adjustment. The factory work week at 41.9 hours also rose in July.

Elsewhere in the goods producing sector job growth continued in construction. The industry added 22,000 workers over the month, about in line with the monthly average of 25,000 over the prior 12 months. In July, employment continued to decline in mining. Job losses over the past two months, however, have moderated compared to losses incurred earlier in the year.

Within the service producing sector, a July gain of 91,000 in retail employment reflected continued strong growth in eating and drinking places, which added 61,000 jobs.

The services industry added 110,000 jobs in July, slightly below the monthly average for the prior 12 months. Strong over-the-month job growth of 66,000 in business services was buoyed by the largest increase in help supply, which is temporary help, in over a year and a half, and by continued robust growth in computer and data processing services. Following two months of relatively sluggish growth, employment in health services rose by 19,000 in July, with doctors' offices contributing nearly half of the increase. Strong job growth continued in engineering and management services.

Employment in finance, insurance and real estate rose by 13,000 in July, slightly below the monthly average of the prior 12 months.

Transportation employment edged up over the month, and public utilities resumed its long-term employment decline, following a small increase in June. Wholesale trade employment expanded by 16,000 in July, and government employment was about unchanged over the month after seasonal adjustment.

Average hourly earnings of private production or nonsupervisory workers grew by six cents in July to $13.29, following a rise of five cents in June. Over the year, average hourly earnings have risen by 3.8 percent for the 12 months ending in July.

Turning now to our survey of households, the jobless rate held at 4.3 percent in July, and has been below 4.5 percent since November of 1998. Unemployment rates were little changed over the month for the major demographic groups with the exception of blacks. Following several months of steady improvement, the jobless rate for blacks rose sharply from 7.3 percent in June to 8.8 percent in July. The jump in the black unemployment rate was not confined to any one particular subgroup but was split among adult men, adult women and teenagers. I would caution, as always, against reading too much into any one month's movement in the data. This is a volatile series.

Civilian employment was essentially unchanged in July, and the proportion of the population that is employed, at 64.1 percent, also was little changed. About 5.7 percent of employed persons held more than one job in July, not seasonally adjusted basis, little difference from a year earlier.

In summary, the labor market continued to show strength in July. Payment employment expanded by 310,000 over the month and the jobless rate held at 4.3 percent. We of course would be happy to address questions about these data that you might want to raise.

[The prepared statement of Commissioner Abraham and accompanying Press Release appear in the Submissions for the Record.]

Representative Saxton. Commissioner, thank you very much for bringing us good information, positive information obviously on job growth and we appreciate that very much.

Commissioner, the Bureau of Labor Statistics (BLS) has historically and continues to compile a number of price indices and a great deal of price information. Within the context of what you have said, I would just like to ask you about what some of these indices are showing. For example, is there any indication from the Consumer Price Index (CPI) that inflation is moving upward in any meaningful or significant way?

Ms. Abraham. My colleague, Mr. Dalton, has more complete information on what has been happening in some of these price series. Maybe I could ask him to address the question.

Representative Saxton. Mr. Dalton.

Mr. Dalton. Through the first six months, through June, the CPI for all items rose at a seasonally adjusted annual rate of 2.2 percent. That compares with an increase of 1.6 percent for all the previous year, 1998.

If you look at the so-called core rate, in the same time comparison, through June of 1999, that index is rising at a seasonally adjusted rate of 1.6 percent compared with an increase of 2.4 percent in 1998.

Representative Saxton. The core rate is the rate of increase without energy and food; is that right?

Mr. Dalton. That's right.

Representative Saxton. Go ahead. Say that again, please.

Mr. Dalton. The Consumer Price Index for all items less food and energy rose 1.6 percent at a seasonally adjusted annual rate through the first six months of this year. That compares with an increase of 2.4 percent in 1998, the entire year of 1998.

Representative Saxton. One might be able to conclude then that energy prices had a significant effect on the broad CPI; is that correct?

Mr. Dalton. Yes, that is quite right.

Representative Saxton. As Americans watched the price jump at the gas pump in April following into May, that obviously had a very significant impact. So one segment of our economy was, as we look back now, primarily responsible for the increase in prices generally; is that correct?

Mr. Dalton. That is correct.

Representative Saxton. Has the increase in the price of energy dampened some in more recent months?

Mr. Dalton. Yes, it has. Unfortunately, I don't have the monthly data sitting in front of me.

Representative Saxton. That is all right. The general fact is that the price of energy spiked for a month or two months and has kind of leveled off?

Mr. Dalton. Right. It went up 1.6 percent in March and 6.1 percent in April. It fell 1.3 percent in May and 1.2 percent in June.

Representative Saxton. So we seem to be back to—

Mr. Dalton. The only comment I would make is that the accounts in the press indicate that since we priced in June the gasoline prices have risen again.

Representative Saxton. Thank you. In May, the June CPI increases were relatively benign. Is it fair to say now that the large April increase in the CPI was an aberration?

Mr. Dalton. I don't think that I could characterize it as an aberration, more as sort of one time circumstances.

Representative Saxton. Say that again. It would be fairer to say that it was—

Mr. Dalton. Well, in my way of thinking if we call it an aberration, that is almost as if it didn't happen. I think we did report what happened, it is just that we had two unusual circumstances in March and April.

Representative Saxton. But a very brief period of what appeared to be a rapid increase in inflation, and again primarily due to the increase in energy prices?

Mr. Dalton. Right. It clearly has come down from that 0.7 that we saw in April.

Representative Saxton. Hasn't the core CPI continued to moderate on a year-over-year basis?

Mr. Dalton. Yes. As I indicated before, it rose 1.6 percent through the first six months data seasonally adjusted annual rate compared with 2.4 percent in 1998.

Representative Saxton. What has been the change in the core CPI over the last 12 months?

Mr. Dalton. Over the past 12 months, that is 2.1 percent.

Representative Saxton. Does it show signs of any strong upward movement at this time?

Mr. Dalton. Clearly from the perspective of the first six months of this year it is rising at a slower rate than it did last year. That is due in part to price declines in new and used cars, a much smaller rate of increase in tobacco prices, and a decline in apparel prices.

Representative Saxton. So there has been quite a moderating effect over the past year in the Consumer Price Index and that would bolster the notion that we don't see evidence, at least in the CPI, of emerging inflation; is that correct?

Mr. Dalton. I guess my comments are with respect to what we have seen in the CPI as opposed to what might be emerging from what we see.

Representative Saxton. But from what we have seen, there is no evidence of—

Mr. Dalton. There is moderation. Exclusive of the energy component, relative to last year there is moderation.

Representative Saxton. Thank you. Commissioner, we have talked about the Consumer Price Index. If we can turn for a few minutes to discussion about the Producer Price Index (PPI). Is there any indication in the Producer Price Index that inflation is moving upward in any meaningful way?

Ms. Abraham. Again, I think the way that we can answer that question is relative to what the data are showing this year compared to what they were showing last year. Ken may have more complete figures than I do.

The annualized rate of change in the Producer Price Index for finished goods over the first six months of the year is 1.5 percent. That compares to last year when over the year as a whole finished goods prices were unchanged and the year before when they fell 1.2 percent. So there the picture is a bit different. The rate of growth in the PPI is positive this

year as opposed to negative over the last couple of years, although still only 1.5 percent.

Representative Saxton. I am glad that you said, " although still only 1.5 percent." In your lifetime and in my lifetime, we have seen rates of inflation in double digits and we have seen what we considered at the time to be good news or normal rates of inflation when inflation got to 4 or 5 percent. So we see evidence now in the PPI that price increases may be in the neighborhood of about 1.5 percent; is that correct?

Ms. Abraham. That was for finished goods. You had expressed an interest also in looking at things at an earlier stage of production. The rate of increase in prices for intermediate materials is a bit higher at 2.5 percent. The rate of increase for crude materials is still higher, 15.1 percent at an annualized rate over the first six months of the year. That is undoubtedly substantially attributable to what is going on with energy. That is the biggest component of that.

Representative Saxton. We explored the effect of the increase in energy prices in the CPI. In this case did any special factors play a role in the recent PPI movements?

Ms. Abraham. At the crude level, energy was certainly a major factor. If you take energy out, I am not sure how much else there is left in there.

Mr. Dalton. If you take crude/nonfarm materials less energy, so that is exclusive of food and energy, it rose at a rate of 4.1 percent, again at a seasonally adjusted annual rate. That compares with a decline of 16 percent for all of 1998. So in that particular case there appears to be a clear turnaround in the direction of those goods.

I can give you numbers for finished goods excluding food and energy as well. Through June they declined at a rate of .4 of 1 percent. That compares with an increase of 2.5 percent for all of last year.

Representative Saxton. Thank you. Now let me turn to the Gross Domestic Product (GDP) deflator. Is there any indication from the GDP deflator that inflation is moving up in any meaningful way?

Ms. Abraham. I don't have the data on that here and I suspect that Ken doesn't either. That is a product of the Bureau of Economic Analysis and we didn't bring those materials with us.

Representative Saxton. Thank you. Do you have information with you on import and export price indices?

Ms. Abraham. Ken has those.

Mr. Dalton. Overall import prices, June 1998 to June 1999, declined .2 of 1 percent. That compares with a decline of 5.7 percent for the 12 months ending in June of 1998 and a decline of 1.9 percent in June of 1997. Again these are year-over-year comparisons because these data are not seasonally adjusted.

Essentially what it is showing is that the very substantial declines that we have experienced over the last several years are slowing.

Representative Saxton. The declines are slowing.

Mr. Dalton. Right.

Representative Saxton. But we still don't see increases, is that right?

Mr. Dalton. It is still below year-earlier levels.

Representative Saxton. So no signs of inflation here either. Slowing declines, but no increases?

Ms. Abraham. Correct.

Representative Saxton. Is there any particular statistical anomalies affecting this month's household or payroll numbers?

Ms. Abraham. Not that we are aware of.

Representative Saxton. When Dr. Norwood was the Bureau of Labor Statistics Commissioner, she consistently warned against reading too much into one month's data. Do you believe that the same message is appropriate here?

Ms. Abraham. Absolutely.

Representative Saxton. Are the data reported today any exception to that rule whatsoever?

Ms. Abraham. No. I guess there are a couple of things in this month's numbers to which I would particularly apply that caution. On the payroll survey side, I think this one month increase in employment in manufacturing is welcomed news. I think we want to look at more months' data before we conclude that we are seeing a real turnaround in manufacturing. I would say the same thing on the household survey side with respect to the big jump up that we saw in the black unemployment rate. That is a very volatile series and drawing any conclusion from this one month's movement I think would be a mistake.

Representative Saxton. Thank you. We have been joined by two of our colleagues, so let me wrap up by first thanking you for being so responsive this morning. We appreciate that as always.

But let me just also say that before I came here this morning I was watching the television and the markets were getting ready to open in this country. We looked at the Asian markets, and based upon all of this good data that you have brought to us this morning, there was speculation that our markets were going to open down. In fact, the Asian markets had already reacted negatively to this good information anticipating an increase in interest rates by the Fed and the subsequent ripple effect of perhaps slowing the economy. And yet if we look at the history of this expansion as depicted on this chart, which we have carefully examined this morning, inflation has continued to fall throughout the entire expansion. This debunks the idea that good job growth and good GDP growth has not led to a re-emergence of inflation. You have helped me make the point this morning with regard to the CPI and the PPI and other indicators, there is still no evidence of reemerging inflation. And so it is kind of an anomaly to me that somehow, I guess because of the historic notion that when we have good economic growth inflation is sure to follow, has not happened. And yet the markets continue to respond in a negative way to this positive information. It is kind of interesting to be here to experience these kinds of situations.

In any event I am glad that we have been joined by two colleagues, and I would just like to turn to Mr. Minge at this point to see if he has any questions or thoughts that he would like to offer.

OPENING STATEMENT OF REPRESENTATIVE DAVID MINGE

Representative Minge. Yes. I appreciate your bringing this information to the Committee and discussing it with us. I would like to ask a couple of questions. First, I am interested in knowing if we maintain statistics that show the strata, the wage strata in our economy. This comes up sometimes in the context of discussing minimum wage and the distribution of income so that what percent of the workforce is employed at essentially minimum wage level or under five dollars an hour? Is that information available?

Ms. Abraham. It is. Let me describe for you what it is that we have available. Every month in the household survey that we do, we ask part of the sample questions about their earnings. And so we have

information for people who are paid by the hour, which is a little over 60 percent of the total workforce, what their hourly wage rate is, and we regularly produce estimates annually of the number of workers earning below the minimum wage and there are some. Whether that reflects exemptions in the law or noncompliance, we have no way of knowing. I would be very happy to supply those numbers. We have not brought data with us.

Representative Minge. I am very interested in that information because of the concerns about any impact of any change to minimum wage on certain industries or sections of the country. Is it broken out by industry or by region?

Ms. Abraham. It is broken out by demographic characteristics. I don't know what industry or regional breaks we have.

Mr. Rones. We do have some information on that and we will pass that on to you.

[The response of Commissioner Abraham to Representative Minge appears in the Submissions for the Record.]

Representative Minge. When you say demographics, there is some concern whether these are entry level positions and we are talking about high school students, we are talking about people who have impediments to full employment in the workplace and have difficulty being competitive, and finally people who you might classify as principal source of income.

Ms. Abraham. We have some information on family composition, whether we are talking about a family with one earner or multiple earners, that kind of thing. There are limits to the different ways that we can break this out just based on what we ask in the survey and what the sample size is. But it might be possible if there was something that you were particularly interested in that we could produce a tabulation.

Representative Minge. Thank you very much. I am interested in that kind of demographic breakout as well as the industry breakout.

The second thing that I would like to ask about returns to the inflation factor and I have been in several meetings with you, Commissioner Abraham, where the Consumer Price Index has been dissected and dissed and almost everything else. And I note with some interest that there have been modest adjustments in the studies that are done to calculate the Consumer Price Index. Do we have any problem

with the Consumer Price Index methodology having changed and then difficulty in comparing CPI today with five years ago?

Ms. Abraham. That is somewhat of an issue. We have, as you correctly note, made a number of changes to the way that we construct the CPI. The biggest single change that we have made is that we have moved to using a geometric mean formula in averaging up the prices in a large number of the subcomponents, the consequence of which is that the CPI grows a bit more slowly than it would have had we stayed with our previous methods. But there are other changes that we have made as well.

Because we were concerned about the fact that the CPI today is really not comparable to what it was going back through time, we have put together for analytic purposes what we are calling a research series that represents our best effort to say what the CPI would have been in the past had we been using current methods.

Again, this is inherently imperfect because we weren't doing it then and we don't have the information put together that way, so it is rather the back of the envelope but it is our best effort to put that together. I will send you a little paper that we have that describes that as well if you are interested.

And you can see in recent years the official CPI grew a bit faster than it would have grown had we been using current methods. Or putting it a little bit differently, the growth in the CPI may look more moderate today as compared to the recent past because in part of these changes in methods.

Representative Minge. Do you still have any breakdown for seniors in the CPI because there is some concern whether the cost of living adjustment and Social Security accurately reflects the cost of living for the seniors in our society and I think it has perhaps come up nowhere more dramatically than the cost of prescription drugs. So if there is anything that you have that indicates that, I certainly would like to see it and I suspect that would be useful to the Committee.

Ms. Abraham. We produce something that we call an experimental CPI for the elderly which really had to do with our trying to caution the user that the index is not up to our usual statistical standards. The way that this experimental series is put together, we take the data that we collect for the regular CPI and reweight it based on the shares, the expenditures of the elderly that go to different categories of things.

What we don't do, and it would be a more difficult and expensive undertaking, is try to figure out what stores the elderly shop in and what things that they buy in those stores and price those items. Prescription drugs is a good example. We have an index for prescription drugs, but it is based upon the prescription drugs bought by the whole population. We don't track specifically prescription drugs being purchased by the elderly. So there are some inherent limitations in this experimental measure.

The recent history of this experimental measure shows that it continues through 1998, as it has over most recent years, to grow just a bit more rapidly than the overall CPI. In 1998, this experimental index rose 1.9 percent versus 1.6 percent for both the CPI-U (Consumer Price Index - Urban) and the CPI-W (Consumer Price Index - Wage).

Representative Minge. Thank you very much.

Representative Saxton. Thank you very much, Representative Minge. Mr. Watt.

OPENING STATEMENT OF REPRESENTATIVE MELVIN L. WATT

Representative Watt. Thank you, Mr. Chairman. Let me go into two or three different areas if I can. First, Commissioner Abraham, I want to ask a couple of questions about the unemployment rates among black employees—I guess they are not employees, they are unemployed.

The rate for July of 1999 was 8.8 percent.

Ms. Abraham. Correct.

Representative Watt. Not seasonally adjusted, 9.6 percent. Can you tell me what that would translate to in terms of numbers?

Ms. Abraham. Yes. The number of unemployed black persons in July of 1999, on a seasonally adjusted basis was about 1.4 million persons. The number was 1.6 million on a not seasonally adjusted basis.

Representative Watt. So that is 1.4 or 1.6, depending on whether you seasonally adjust it, black people who are out there actively looking for jobs that are not going to be able to find them?

Ms. Abraham. Who have not found something as of our survey reference date.

Representative Watt. What is the process by which you determine that? I am wondering—I notice you say at the top of page five of your testimony that we shouldn't read too much into one month's movement

in the data. I will come back to that aspect of it, but I am just wondering what process you used to determine that and whether part of the problem may be just the assessment method, much like part of the problem in taking the census is the assessment method?

Ms. Abraham. Let me describe our process. These numbers come out of a household survey that is done for us by the Census Bureau. There are about 50,000 households who are contacted and interviewed each month for the survey.

Representative Watt. 50,000 gross or is that the minority population?

Ms. Abraham. That is gross, so the number of minority households would be substantially smaller.

Representative Watt. 12 percent of that, maybe?

Ms. Abraham. Right. Roughly in proportion to the population share, not precisely because of details that I don't need to go into, but roughly that would be right. It is typical for one person in the household to answer questions for the household as a whole. The questions that are used to determine how somebody gets categorized as employed, unemployed, or out of the labor force, pertains to whether they did any work for pay or profit.

Representative Watt. I think I am more concerned about your ability to get somebody to tell you that information than I am about the questions. You can't get a response—the census data—racially the questions that get asked don't yield any disparity, but the process for getting to those people typically yields a substantial disparity. I am more worried about that part of it than I am the content of the questions.

Ms. Abraham. The questions are probably a matter, too, because you might not quite like where we draw the line. We ask whether people are available for work and whether they have actively searched for work at any time in the last four weeks. And if they say yes, they are counted as unemployed. The response rate for this survey is very high. It is 93 to 94 percent month in and month out. When the Census Bureau interviewers go out, they try to find people to ask them what they were doing the week before, so they only have about 10 days to get their answers in. So getting a 93 to 94 percent response rate in that time frame is very good.

Representative Watt. How does that response rate compare to the white response rate?

Ms. Abraham. That is the overall response rate. Do you know how that breaks out by demographic groups, Phil?

Mr. Rones. We don't have that because until you get into the household to conduct an interview, you don't really have that information. So we are not really able to break out the response rates by race. There is—

Representative Watt. So what you are saying is if the response rate among minorities was substantially lower than the response rate among white people, in much the same way that the census undercounts minorities—

Ms. Abraham. It is a little different.

Representative Watt. —unemployment would be underestimated?

Ms. Abraham. It is a little different. It is a little more subtle than that. Although this again ties back to the census, we are using census counts adjusted for the undercount from 1990 projected forward. So we know what the size of the total black population is according to those estimates.

Based on the information that we get from the black respondents that we interview, we blow the numbers up to the total. So if the people that we find and get to talk to us are representative of the population overall, then these reported numbers should be fine. That 1.4, that 1.6 million should be fine.

Where we could run into a problem conceivably is if the people that we find at home who talked to us within the black population systematically are different than the ones that we don't find, there could be an issue. That is the nature of the potential problem if there is one.

Representative Watt. Mr. Chairman, I don't know what your process is. Are you going around again? What is your plan?

Representative Saxton. Why don't you take whatever time you need at this point.

Representative Watt. Okay. Let me just ask a quick question about your comment at the top of page five of your testimony that we should not read too much into one month's movement, which I actually agree with on a long-term basis. I am wondering what we should read into it on a short-term basis, and let me tell you where I am going on that.

I am wondering whether you see a pattern when there is even a short-term weakening of any aspects of the economy that the minority unemployment is probably the most responsive to that short-term trend?

It just seems to me that you couldn't go from 8.1 percent in March, 7.7 percent in April, 7.5 percent in May, 7.3 percent—you have a constant decline and the economy is booming, it is going great, and I am wondering whether that spike up might be an early indication of the early signs of a slowing down of the economy? Would you comment on that. I am not trying to take you in that direction. I am just thinking theoretically that that might be the case.

Ms. Abraham. What I was trying to get at is the fact that this series is relatively volatile, given the underlying sample size. A change in the unemployment rate—

Representative Watt. Theoretically it should not be any more volatile for the minority population than it is for the majority population.

Ms. Abraham. Actually it is going to be a lot more volatile.

Representative Watt. Tell me about that then.

Ms. Abraham. The reason is that the sample is a lot smaller. The sample is roughly proportional to the minority share in the population, so only about 10-12 percent of the population is minority. So out of our 50,000 households, roughly 5,000 or so of them are black; and that means that the information is that much less robust for constructing these monthly estimates.

To give you an idea, a change in the overall unemployment rate of as little as 0.2 percentage point is a statistically significant change. When you are talking about the black unemployment rate, the change has to be 0.84 percentage point from one month to the next in order for it to mean anything statistically. Any change less than that is not even statistically significant.

So if you look back at the series for black unemployment, you can see that it jumps around a whole lot from month to month. Last year in July it did exactly what it did this July.

Representative Watt. That would not be inconsistent with the theory that I am advancing.

Ms. Abraham. No, but it just means that it is hard to interpret the number. Last year in July the black employment rate jumped up by 1.5 percentage points, and then it came down over the successive months.

In that case it was not an advance indication of anything. It was just noise in the data. The problem with any one month's numbers is that we can't tell from this vantage point what this jump means.

Representative Watt. Mr. Chairman, I wanted to get into the record, if I can find it, the information about the Job Quality Index and ask one question about that. The Job Quality Index normally tracks changes in wages as well as health care and pension coverage, and the Job Quality Index for the second quarter of 1999 indicates that wages are continuing to improve without any significant improvement in health care and pension coverage. Do you all do anything on that index or is that—

Ms. Abraham. No. It is people taking data that we produce and trying to put it together into some sort of an aggregate that based upon their assessment of the relative importance of these different pieces gives a good overall indication, but it is not an official statistic that we produce.

Representative Watt. Have you found that people who have better health care benefits and pension benefits tend to stay on jobs longer?

Ms. Abraham. I don't know that that is something that we have looked at explicitly.

Representative Watt. Mr. Chairman, I ask unanimous consent to submit for the record the Job Quality Index study for the first quarter. Actually I guess it must be the second quarter, the most recent quarter, whatever it is.

Representative Saxton. Without objection.

[The Job Quality Index appears in the Submissions for the Record.]

Representative Watt. Whatever it is, I want to put it in the record.

Representative Saxton. Thank you. We will move to Mr. Ryan at this point.

OPENING STATEMENT OF REPRESENTATIVE PAUL RYAN

Representative Ryan. Thank you, Mr. Chairman. I would like to ask unanimous consent to have my full opening statement included in the record.

Representative Saxton. Without objection.

[The prepared statement of Representative Ryan appears in the Submissions for the Record.]

Representative Ryan. Thank you. I would like to ask you a few questions about yesterday's productivity numbers. I notice that nonfarm business sector productivity growth was 1.3 percent.

Could you tell me your thoughts on the reliability of this data given the changing nature of productivity gains with respect to new technological advances? How confident are you in this data? Given the fact that we have so much of a changing productivity atmosphere where we have technological changes that are moving on an exponential basis, how confident are you that this data is capturing that growth?

Ms. Abraham. Let me answer a slightly different question first. I thought when you started speaking about the confidence in the data, my thoughts were running towards something that we have already talked about, which is the danger of drawing too much of a conclusion from any one month's data. And we saw in the second quarter a drop off in productivity.

If you look at those numbers quarter to quarter they do jump around, so a one time decline in any short term sense, I think it is hard to draw too much of a conclusion from that. You always see those series jumping up and down.

Your question had to do in essence with how good a job we are doing with the productivity numbers of picking up improvements in quality of technologically advanced products and changes in productivity in the service sector and that kind of thing.

Representative Ryan. The nature.

Ms. Abraham. The productivity numbers are put together based on measures of output that come out of the Bureau of Economic Analysis and dollars that are spent on different things, and then there are price statistics that are used to deflate those. So it really gets back to a question of what all that underlying data looks like.

There are certainly things that it is very difficult to track in today's economy in terms of coming up with a price series and therefore a productivity series that is right. I think that we do about as good a job as we can be doing at this point. There are undoubtedly issues. I think those issues may cut both ways, so I am very much an agnostic in terms of whether the productivity numbers are showing growth that is too slow or growth that is conceivably too fast.

Representative Ryan. It sounds like you think that it is more complicated getting this data now that—it sounds like given the fact of

the nature of productivity changes in this economy, especially with respect to technological sector, is your data collection much more difficult to grasp? Is it much more difficult to capture the true changes in productivity given the fact that productivity growth is of so many different natures, and are you confident that you are able to really harness all of that data and is in fact this data collection becoming much more challenging than it was 10 years ago?

Ms. Abraham. I think it is a fair statement to say that the economic output is increasingly concentrated in difficult to measure sectors, if that is what the sense of your comment is. I think that is a fair statement.

Representative Ryan. I want to switch over to some of the wage data that was recently released and in particular the Employment Cost Index, the unit labor cost data and today's hourly earnings were recently released. Commissioner, can you tell me what you think these data tell us about wage movements and how and if these data can be reconciled with one another.

Ms. Abraham. I think the recent reports are very consistent with one another. If you look at the numbers thus far this year, the wage component of the employment cost index, leaving out the benefits because they are not in the other measure, the annualized rate of growth in wages coming out of the employment cost index for the first two quarters of the year was 3.4 percent.

If you look at the average hourly earnings growth over the first 7 months of the year, they are running a little bit higher, about 4.1 percent. Given the differences between the series and the way that they are put together, I think they are roughly in line with each other.

Representative Ryan. One more thing that is of particular concern is manufacturing employment. I come from southern Wisconsin, and that is something that has really been taking a pretty hard hit in southern Wisconsin, the area that I come from. This employment has been particularly weak relative to other employment sectors. Based on your best data, what do you attribute that weakness in employment manufacturing data to?

Ms. Abraham. When you saw manufacturing employment start to turn down, it actually had been growing through March of 1998. This month is the first month since then that we have seen a noteworthy increase in manufacturing employment. And I think that a lot of the turnaround from growth in manufacturing to the declines that we have

seen since is related to what has gone on in Asia. Whether this month's increase is a sign that things have turned around or just a one-month thing, we don't know at this point.

In a number of the industries that we knew had been particularly hard hit by weak exports related to economic weakness in Asia, things seemed to look less bad in recent months. The two industries that I am thinking about in particular are industrial machinery and electrical equipment where we had seen a period of big decreases, more modest declines in the last few months, and then this month an increase.

Representative Ryan. Industries sensitive to exports to the Asian markets?

Ms. Abraham. Yes, exactly.

Representative Saxton. Thank you, Commissioner Abraham. I would also like to thank everyone who came here this morning to inquire as to details behind your report. Thank you for being with us.

[Whereupon, at 10:37 a.m., the hearing was adjourned.]

SUBMISSIONS FOR THE RECORD

PREPARED STATEMENT OF REPRESENTATIVE JIM SAXTON, VICE CHAIRMAN

Commissioner Abraham, it is again a pleasure to welcome you and your colleagues before the Joint Economic Committee (JEC).

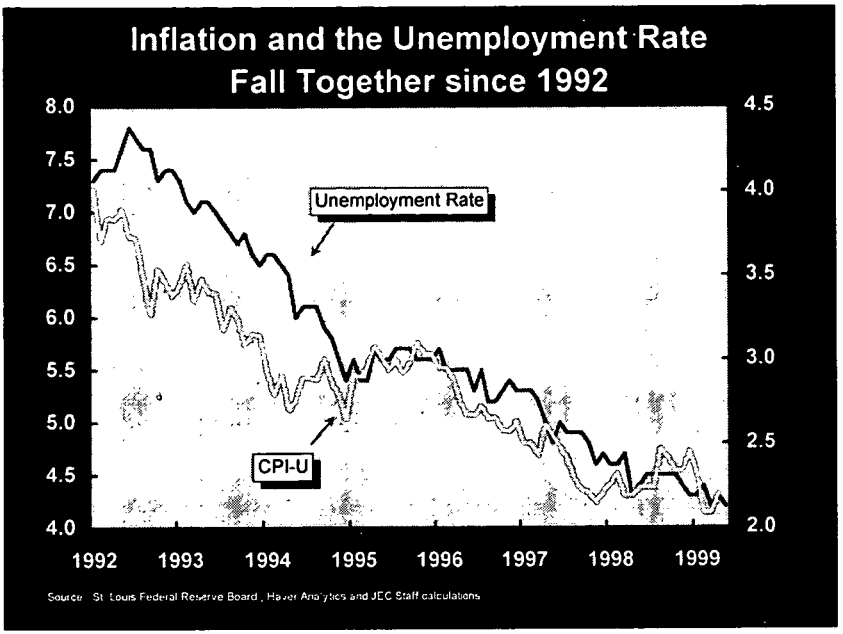
The data released today show solid gains for American workers. The closely watched payroll survey posted a strong employment gain of 310,000 in July. The unemployment rate was 4.3 percent, and of late has been near its lowest level since the Nixon Administration.

The data released today reflect the continuation of the business cycle expansion that began in 1991. This expansion has created 20 million jobs since 1991, even as inflation has trended downward. The upswing has also flooded the Treasury with revenue, erasing the deficit and pushing the budget into surplus. The credit belongs to the American people for their hard work and creativity as workers, farmers and entrepreneurs, not to politicians here in Washington.

As I have pointed out many times before, to the extent this expansion has been fostered by policy, the non-inflationary policy of the Federal Reserve deserves most of the credit. Federal Reserve policy reduced inflation and interest rates, laying a strong foundation for growth and lower unemployment. This policy of price stability created the strong economic environment characterized by declines in inflation, interest rates, and unemployment all at the same time. This successful monetary policy over the course of this expansion demonstrates that the notion of a Phillips curve trade-off between inflation and unemployment is mistaken.

Recently the Federal Reserve raised interest rates while Chairman Greenspan acknowledged that no clear evidence of inflation has yet emerged. In the absence of any significant evidence of inflation, it is my hope that the Federal Reserve will refrain from further interest rate increases. The forward-looking price indicators used by the JEC - bond yields, commodity prices, and the dollar - are somewhat mixed but still do not show clear and significant signs of higher inflation. While labor markets are fairly tight, we do not adhere to the notion that low unemployment causes higher inflation.

In sum, there is little evidence of inflation that would justify a Federal Reserve interest rate hike at this time. Until the forward-looking inflation indicators clearly indicate that higher inflation is definitely in the pipeline, an interest rate hike would be unjustified. Current Federal Reserve policy is sound. Until additional information suggests otherwise, this policy should be maintained on its current prudent course.


Inflation and the Unemployment Rate
Fall Together since 1992
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
4.5
4.0
3.5
3.0
2.5
2.0
Unemployment Rate
CPI-U
1992
1993
1994
1995
1996
1997
1998
1999
Source: St. Louis Federal Reserve Board, Haver Analytics and JEC Staff calculations

FOR DELIVERY: 9:30 A.M., E.D.T.
FRIDAY, AUGUST 6, 1999

Advance copies of this statement are made available to the press under lock-up conditions with the explicit understanding that the data are embargoed until 8:30 a.m. Eastern Daylight Time.

Statement of

Katharine G. Abraham
Commissioner
Bureau of Labor Statistics

Before the

Joint Economic Committee

UNITED STATES CONGRESS

Friday, August 6, 1999

Mr. Chairman and Members of the Committee:

Thank you for this opportunity to discuss the July employment and unemployment estimates that the Bureau of Labor Statistics released this morning.

The unemployment rate, as measured by our household survey, was unchanged at 4.3 percent in July and has been either 4.3 or 4.2 percent each month since March. Nonfarm payroll employment, as measured by our establishment survey, rose by 310,000 in July. This strong over-the-month increase followed a 273,000 gain in June and was well above the average monthly increase of 208,000 for the first half

of 1999. Manufacturing and construction employment increased over the month, and several service-producing industries posted sizable gains.

In July, employment in manufacturing rose by 31,000, after seasonal adjustment. This increase follows declines totaling 490,000 since March 1998. In several durable goods industries, the employment declines that typically occur in July were smaller than usual this year. As a result, these industries posted over-the-month increases in employment, after seasonal adjustment. Employment gains occurred in fabricated metals (9,000), industrial machinery (6,000), electrical equipment (6,000), and motor vehicles and equipment (5,000). In addition, employment in furniture and fixtures increased by 8,000, and stone, clay, and glass products gained 3,000 jobs. Employment in instruments and related products rose by 5,000, the first increase since its last peak in March 1998. Within nondurable manufacturing, employment either was about unchanged or declined in most components in July.

Over the month, factory overtime rose to 4.8 hours, after seasonal adjustment. The factory workweek, at 41.9 hours, also rose in July.

Elsewhere in the goods-producing sector, job growth continued in construction. The industry added 22,000

workers over the month, about in line with the monthly average of 25,000 over the prior 12 months. In July, employment continued to decline in mining. Job losses over the past 2 months, however, have moderated compared with losses incurred earlier this year.

Within the service-producing sector, a July gain of 91,000 in retail employment reflected continued strong growth in eating and drinking places, which added 61,000 jobs. Employment also increased over the month in auto dealerships and building supply stores. In contrast, furniture stores failed to add jobs for the first time in over a year.

The services industry added 110,000 jobs in July, slightly below the monthly average for the prior 12 months. Strong over-the-month job growth of 66,000 in business services was buoyed by the largest increase in help supply in over a year and a half, and by continued robust growth in computer and data processing services. Following 2 months of relatively sluggish growth, employment in health services rose by 19,000 in July, with doctors' offices contributing nearly half of the increase. Strong job growth continued in engineering and management services.

Employment in finance, insurance, and real estate rose by 13,000 in July, slightly below the monthly average of the

prior 12 months. Job growth in finance was held back by a small employment decline in mortgage banking. Security brokerages, however, experienced their largest job increase of the year. Employment growth in real estate continued in July, reflecting strength in home sales.

Transportation employment edged up over the month, and public utilities resumed its long-term employment decline, following a small increase in June. Wholesale trade employment expanded by 16,000 in July, and government employment was about unchanged over the month, after seasonal adjustment.

Average hourly earnings of private production or nonsupervisory workers grew by 6 cents in July to $13.29, following a rise of 5 cents in June. Over the year, average hourly earnings have risen by 3.8 percent.

Turning now to our survey of households, the jobless rate held at 4.3 percent in July, and has been below 4.5 percent since November 1998. Unemployment rates were little changed over the month for the major demographic groups, with the exception of blacks. Following several months of steady improvement, the jobless rate for blacks rose sharply from 7.3 percent in June to 8.8 percent in July. The jump in the black unemployment rate was not confined to any one particular sub-group, but was split among adult men, adult

women, and teenagers. I would caution, as always, against reading too much into any one month's movement in the data.

Civilian employment was essentially unchanged in July, and the proportion of the population that is employed, at 64.1 percent, also was little changed. About 5.7 percent of employed persons held more than one job in July (not seasonally adjusted), little different from a year earlier.

Among the 67 million persons age 16 and over who were not in the labor force in July, 1.1 million (not seasonally adjusted) were classified as "marginally attached" to the labor market. This number was down nearly 200,000 over the year. These are persons who want and are available for work and looked for employment at some time in the past year, but are not currently looking for a job. The number of discouraged workers, a subset of this group who have stopped looking for work because they feel their search would be in vain, was 290,000 in July (not seasonally adjusted), down from 374,000 a year earlier.

In summary, the labor market continued to show strength in July. Payroll employment expanded by 310,000 over the month and the jobless rate held at 4.3 percent.

My colleagues and I now would be glad to answer your questions.

News
United States Department of Labor
Bureau of Labor Statistics Washington, D.C. 20212

Internet address: http://stats.bls.gov/newsrels.htm
Technical information: USDL 99-211
Household data: (202) 606-6378

Establishment data: 606-6555
Media contact: 606-5902

Transmission of material in this release is embargoed until 8:30 A.M. (EDT), Friday, August 6, 1999.

THE EMPLOYMENT SITUATION: JULY 1999

Payroll employment rose in July, and the unemployment rate was unchanged at 4.3 percent, the Bureau of Labor Statistics of the U.S. Department of Labor reported today. Nonfarm payroll employment increased by 310,000. Job gains continued in construction and throughout the service-producing sector. Manufacturing employment also rose, after seasonal adjustment. Average hourly earnings increased by 6 cents.

Chart 1. Unemployment rate, seasonally adjusted, August 1996 - July 1999

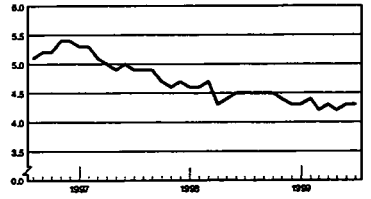
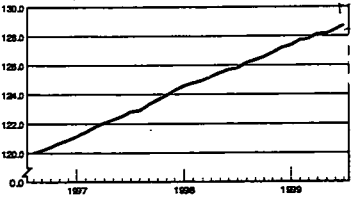


Chart 2. Nonfarm payroll employment, seasonally adjusted, August 1996 - July 1999



Unemployment (Household Survey Data)

The number of unemployed persons (5.9 million) was about unchanged in July, and the unemployment rate held at 4.3 percent. The unemployment rate has been 4.3 or 4.2 percent each month since March. Over the month, the jobless rate for blacks increased to 8.8 percent. Unemployment rates for the other major demographic groups—adult men (3.5 percent), adult women (4.0 percent), teenagers (12.7 percent), whites (3.7 percent), and Hispanics (6.2 percent)—were essentially unchanged. (See tables A-1 and A-2.)

Total Employment and the Labor Force (Household Survey Data)

The civilian labor force (139.3 million) and the labor force participation rate (67.0 percent) were about unchanged from June. Both total employment (133.3 million) and the employment-population ratio (64.1 percent) were little changed in July. (See table A-1.)

Table A. Major indicators of labor market activity, seasonally adjusted

(Numbers in thousands)

Category	Quarterly averages 1999 I	Quarterly averages 1999 II	Monthly data 1999 May	Monthly data 1999 June	Monthly data 1999 July	June-July change
HOUSEHOLD DATA	Labor force status					
Civilian labor force	139,144	139.173	139,019	139,408	139.254	-154
Employment	133,191	133,242	133,224	133,432	133.307	-125
Unemployment	5,953	5,931	5,795	5,975	5.947	-28
Not in labor force	67,732	68,259	68,408	68,225	68,574	349
	Unemployment rates					
All workers	4.3	4.3	4.2	4.3	4.3	.0
Adult men	3.4	3.5	3.6	3.6	3.5	-0.1
Adult women	3.8	3.9	3.6	3.9	4.0	.1
Teenagers	14.6	13.4	12.6	13.5	12.7	-.8
White	3.7	3.8	3.7	3.8	3.7	-.1
Black	8.0	7.5	7.5	7.3	8.8	1.5
Hispanic origin	6.4	6.8	6.7	6.8	6.2	-.6
ESTABLISHMENT DATA	Employment					
Nonfarm employment	127,640	p128,244	128,162	p128,435	p128,745	p310
Goods-producing[1]	25,310	p25,222	25,199	p25,180	p25,230	p50
Construction	6,213	p6,259	6,239	p6,260	p6,282	p22
Manufacturing	18,542	p18,432	18,429	p18,393	p18,424	p31
Service-producing[1]	102,331	p103,021	102,963	p103,255	p103,515	p260
Retail trade	22,605	p22,755	22,748	p22,792	p22,883	p91
Services	38,442	p38,808	38,782	p38,946	p39,056	p110
Government	20,044	p20,096	20,077	p20,111	p20,127	p16
	Hours of work[2]					
Total private	34.6	p34.4	34.4	p34.5	p34.5	p.0
Manufacturing	41.6	p41.7	41.7	p41.7	p41.9	p0.2
Overtime	4.5	p4.5	4.6	p4.7	p4.8	p.1
	Indexes of aggregate weekly hours (1982=100)[2]					
Total private	147.0	p147.3	147.2	p147.7	p148.2	p0.5
	Earnings[2]					
Average hourly earnings, total private	$13.07	p$13.18	$13.18	p$13.23	p$13.29	p$0.06
Average weekly earnings, total private	451.79	p453.95	453.39	p456.44	p458.51	p2.07

[1] Includes other industries, not shown separately.

[2] Data relate to private production or nonsupervisory workers.

p=preliminary.

About 7.6 million persons (not seasonally adjusted) held more than one job in July. These multiple jobholders represented 5.7 percent of the total employed, about the same as in July 1998. (See table A-10.)

Persons Not in the Labor Force (Household Survey Data)

About 1.1 million persons (not seasonally adjusted) were marginally attached to the labor force in July, down from 1.3 million a year earlier. These were people who wanted and were available to work and had looked for a job sometime in the prior 12 months but were not counted as unemployed because they had not searched for work in the 4 weeks preceding the survey. The number of discouraged workers—a subset of the marginally attached who were not currently looking for work specifically because they believed no jobs were available for them—was 290,000 in July. (See table A-10.)

Industry Payroll Employment (Establishment Data)

Total nonfarm employment rose by 310,000 in July to 128.7 million, after seasonal adjustment. Monthly gains had averaged 208,000 during the first half of the year. (See table B-1.)

Manufacturing added 31,000 jobs in July, after seasonal adjustment. This was only the second increase in factory employment since March 1998; the other gain occurred last August when a large number of workers returned to their jobs from strikes and related shutdowns. The July increase was concentrated in durable goods manufacturing, where seasonal declines in several industries were not as large as usual, resulting in employment gains after seasonal adjustment. Manufacturing industries with employment increases in July included fabricated metals, electrical equipment, instruments, industrial machinery, motor vehicles, furniture, and stone, clay, and glass products. Despite the increase in July, overall manufacturing employment remains 459,000 lower than its most recent peak in March 1998.

Elsewhere in the goods-producing sector, construction added 22,000 jobs in July, following a similar gain in June. Employment in special trades grew by 15,000, with the largest gains in concrete work and painting. Growth also continued in the residential component of general building construction.

Mining lost 3,000 jobs in July, about the same number as in June. During the first 5 months of 1999, losses in the industry had averaged nearly 8,000 a month. July job losses were concentrated in oil and gas extraction, where employment has declined by 71,000, or 20 percent, since its most recent peak in February 1998.

In the service-producing sector, the services industry added 110,000 jobs in July, slightly below the average growth for the prior 12 months. Help supply services employment grew by 31,000 in July, the largest monthly gain in over a year and a half. Both computer services (13,000) and engineering and management services (26,000) continued their robust growth in July. Following 2 months of sluggish growth, health services had a substantial job gain (19,000), with the largest increases in doctors' offices and clinics.

Retail trade employment grew by 91,000 in July. Thus far in 1999, job growth in this industry has averaged about 51,000 a month, approximately twice the monthly average for the same period in 1998. Within retail trade, employment in eating and drinking places increased by 61,000 in July, almost double the gain in June. Employment also rose over the month in car dealerships and in building materials and garden supply stores. In contrast, furniture and home furnishings stores (which include computer stores) did not add employment for the first time in over a year.

Finance, insurance, and real estate added 13,000 jobs in July. Within finance, employment in securities brokerages increased by 7,000, the largest job increase of the year for this industry. In contrast, employment in mortgage banks declined for the second straight month, following 4 years of steady growth. Employment in wholesale trade grew by 16,000, with most of the increase occurring in durable goods. Transportation and public utilities added 14,000 jobs, with the largest gain occurring in trucking.

Weekly Hours (Establishment Survey Data)

The average workweek for production or nonsupervisory workers on private nonfarm payrolls was unchanged in July, at 34.5 hours, seasonally adjusted. The manufacturing workweek rose by 0.2 hour to 41.9 hours; factory overtime was up 0.1 hour to 4.8 hours. (See table B-2.)

The index of aggregate weekly hours of production or nonsupervisory workers on private nonfarm payrolls rose by 0.3 percent to 148.2 (1982=100), seasonally adjusted. The manufacturing index rose by 0.8 percent to 107.0 in July. (See table B-5.)

Hourly and Weekly Earnings (Establishment Survey Data)

Average hourly earnings of production or nonsupervisory workers on private nonfarm payrolls increased by 6 cents in July to $13.29, seasonally adjusted. Average weekly earnings rose by 0.5 percent, to $458.51, seasonally adjusted. Over the year, average hourly earnings rose by 3.8 percent and average weekly earnings increased by 3.5 percent. (See table B-3.)

The Employment Situation for August 1999 is scheduled to be released on Friday, September 3, at 8:30 A.M. (EDT).

Explanatory Note

This news release presents statistics from two major surveys, the Current Population Survey (household survey) and the Current Employment Statistics survey (establishment survey). The household survey provides the information on the labor force, employment, and unemployment that appears in the A tables, marked HOUSEHOLD DATA. It is a sample survey of about 50,000 households conducted by the Bureau of the Census for the Bureau of Labor Statistics (BLS).

The establishment survey provides the information on the employment, hours, and earnings of workers on nonfarm payrolls that appears in the B tables, marked ESTABLISHMENT DATA. This information is collected from payroll records by BLS in cooperation with State agencies. In June 1999, the sample included about 390,000 establishments employing about 48 million people.

For both surveys, the data for a given month relate to a particular week or pay period. In the household survey, the reference week is generally the calendar week that contains the 12th day of the month. In the establishment survey, the reference period is the pay period including the 12th, which may or may not correspond directly to the calendar week.

Coverage, definitions, and differences between surveys

Household survey. The sample is selected to reflect the entire civilian noninstitutional population. Based on responses to a series of questions on work and job search activities, each person 16 years and over in a sample household is classified as employed, unemployed, or not in the labor force.

People are classified as *employed* if they did any work at all as paid employees during the reference week; worked in their own business, profession, or on their own farm; or worked without pay at least 15 hours in a family business or farm. People are also counted as employed if they were temporarily absent from their jobs because of illness, bad weather, vacation, labor-management disputes, or personal reasons.

People are classified as *unemployed* if they meet all of the following criteria: They had no employment during the reference week; they were available for work at that time; and they made specific efforts to find employment sometime during the 4-week period ending with the reference week. Persons laid off from a job and expecting recall need not be looking for work to be counted as unemployed. The unemployment data derived from the household survey in no way depend upon the eligibility for or receipt of unemployment insurance benefits.

The *civilian labor force* is the sum of employed and unemployed persons. Those not classified as employed or unemployed are *not in the labor force*. The *unemployment rate* is the number unemployed as a percent of the labor force. The *labor force participation rate* is the labor force as a percent of the population, and the *employment-population ratio* is the employed as a percent of the population.

Establishment survey. The sample establishments are drawn from private nonfarm businesses such as factories, offices, and stores, as well as Federal, State, and local government entities. *Employees on nonfarm payrolls* are those who received pay for any part of the reference pay period, including persons on paid leave. Persons are counted in each job they hold. *Hours and earnings* data are for private businesses and relate only to production workers in the goods-producing sector and nonsupervisory workers in the service-producing sector.

Differences in employment estimates. The numerous conceptual and methodological differences between the household and establishment surveys result in important distinctions in the employment estimates derived from the surveys. Among these are:

- The household survey includes agricultural workers, the self-employed, unpaid family workers, and private household workers among the employed. These groups are excluded from the establishment survey.
- The household survey includes people on unpaid leave among the employed. The establishment survey does not.
- The household survey is limited to workers 16 years of age and older. The establishment survey is not limited by age.
- The household survey has no duplication of individuals, because individuals are counted only once, even if they hold more than one job. In the establishment survey, employees working at more than one job and thus appearing on more than one payroll would be counted separately for each appearance.

Other differences between the two surveys are described in "Comparing Employment Estimates from Household and Payroll Surveys," which may be obtained from BLS upon request.

Seasonal adjustment

Over the course of a year, the size of the nation's labor force and the levels of employment and unemployment undergo sharp fluctuations due to such seasonal events as changes in weather, reduced or expanded production, harvests, major holidays, and the opening and closing of schools. The effect of such seasonal variation can be very large; seasonal fluctuations may account for as much as 95 percent of the month-to-month changes in unemployment.

Because these seasonal events follow a more or less regular pattern each year, their influence on statistical trends can be eliminated by adjusting the statistics from month to month. These adjustments make nonseasonal developments, such as declines in economic activity or increases in the participation of women in the labor force, easier to spot. For example, the large number of youth entering the labor force each June is likely to obscure any other changes that have taken place relative to May, making it difficult to determine if the level of economic activity has risen or declined. However, because the effect of students finishing school in previous years is known, the statistics for the current year can be adjusted to allow for a comparable change. Insofar as the seasonal adjustment is made correctly, the adjusted figure provides a more useful tool with which to analyze changes in economic activity.

In both the household and establishment surveys, most seasonally adjusted series are independently adjusted. However, the adjusted series for many major estimates, such as total payroll employment, employment in most major industry divisions, total employment, and

unemployment are computed by aggregating independently adjusted component series. For example, total unemployment is derived by summing the adjusted series for four major age-sex components; this differs from the unemployment estimate that would be obtained by directly adjusting the total or by combining the duration, reasons, or more detailed age categories.

The numerical factors used to make the seasonal adjustments are recalculated twice a year. For the household survey, the factors are calculated for the January-June period and again for the July-December period. For the establishment survey, updated factors for seasonal adjustment are calculated for the May-October period and introduced along with new benchmarks, and again for the November-April period. In both surveys, revisions to historical data are made once a year.

Reliability of the estimates

Statistics based on the household and establishment surveys are subject to both sampling and nonsampling error. When a sample rather than the entire population is surveyed, there is a chance that the sample estimates may differ from the "true" population values they represent. The exact difference, or *sampling error*, varies depending on the particular sample selected, and this variability is measured by the standard error of the estimate. There is about a 90-percent chance, or level of confidence, that an estimate based on a sample will differ by no more than 1.6 standard errors from the "true" population value because of sampling error. BLS analyses are generally conducted at the 90-percent level of confidence.

For example, the confidence interval for the monthly change in total employment from the household survey is on the order of plus or minus 376,000. Suppose the estimate of total employment increases by 100,000 from one month to the next. The 90-percent confidence interval on the monthly change would range from -276,000 to 476,000 (100,000 +/- 376,000). These figures do not mean that the sample results are off by these magnitudes, but rather that there is about a 90-percent chance that the "true" over-the-month change lies within this interval. Since this range includes values of less than zero, we could not say with confidence that employment had, in fact, increased. If, however, the reported employment rise was half a million, then all of the values within the 90-percent confidence interval would be greater than zero. In this case, it is likely (at least a 90-percent chance) that an employment rise had, in fact, occurred. The 90-percent confidence interval for the monthly change in unemployment is +/- 258,000, and for the monthly change in the unemployment rate it is +/- .21 percentage point.

In general, estimates involving many individuals or establishments have lower standard errors (relative to the size of the estimate) than estimates which are based on a small number of observations. The precision of estimates is also improved when the data are cumulated over time such as for quarterly and annual averages. The seasonal adjustment process can also improve the stability of the monthly estimates.

The household and establishment surveys are also affected by *nonsampling error*. Nonsampling errors can occur for many reasons, including the failure to sample a segment of the population, inability to obtain information for all respondents in the sample, inability or unwillingness of respondents to provide correct information on a timely basis, mistakes made by respondents, and errors made in the collection or processing of the data.

For example, in the establishment survey, estimates for the most recent 2 months are based on substantially incomplete returns; for this reason, these estimates are labeled preliminary in the tables. It is only after two successive revisions to a monthly estimate, when nearly all sample reports have been received, that the estimate is considered final.

Another major source of nonsampling error in the establishment survey is the inability to capture, on a timely basis, employment generated by new firms. To correct for this systematic underestimation of employment growth (and other sources of error), a process known as bias adjustment is included in the survey's estimating procedures, whereby a specified number of jobs is added to the monthly sample-based change. The size of the monthly bias adjustment is based largely on past relationships between the sample-based estimates of employment and the total counts of employment described below.

The sample-based estimates from the establishment survey are adjusted once a year (on a lagged basis) to universe counts of payroll employment obtained from administrative records of the unemployment insurance program. The difference between the March sample-based employment estimates and the March universe counts is known as a benchmark revision, and serves as a rough proxy for total survey error. The new benchmarks also incorporate changes in the classification of industries. Over the past decade, the benchmark revision for total nonfarm employment has averaged 0.3 percent, ranging from zero to 0.7 percent.

Additional statistics and other information

More comprehensive statistics are contained in *Employment and Earnings*, published each month by BLS. It is available for $17.00 per issue or $35.00 per year from the U.S. Government Printing Office, Washington, DC 20402. All orders must be prepaid by sending a check or money order payable to the Superintendent of Documents, or by charging to Mastercard or Visa.

Employment and Earnings also provides measures of sampling error for the household survey data published in this release. For unemployment and other labor force categories, these measures appear in tables 1-B through 1-H of its "Explanatory Notes." Measures of the reliability of the data drawn from the establishment survey and the actual amounts of revision due to benchmark adjustments are provided in tables 2-B through 2-G of that publication.

Information in this release will be made available to sensory impaired individuals upon request. Voice phone: 202-606-STAT; TDD phone: 202-606-5897; TDD message referral phone: 1-800-326-2577.

Table A-2. Employment status of the civilian population by race, sex, age, and Hispanic origin — Continued

(Numbers in thousands)

Employment status, race, sex, age, and Hispanic origin	Not seasonally adjusted			Seasonally adjusted[1]					
	July 1998	June 1999	July 1999	July 1998	Mar. 1999	Apr. 1999	May 1999	June 1999	July 1999
HISPANIC ORIGIN									
Civilian noninstitutional population	21,097	21,618	21,684	21,097	21,414	21,483	21,548	21,618	21,684
Civilian labor force	14,438	14,710	14,738	14,267	14,570	14,543	14,535	14,643	14,592
Participation rate	68.4	68.0	68.0	67.6	68.0	67.7	67.5	67.7	67.3
Employed	13,351	13,750	13,767	13,245	13,732	13,541	13,558	13,654	13,685
Employment-population ratio	63.3	63.6	63.5	62.8	64.1	63.0	62.9	63.2	63.1
Unemployed	1,087	960	970	1,022	838	1,002	977	989	907
Unemployment rate	7.5	6.5	6.6	7.2	5.8	6.9	6.7	6.8	6.2

[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

NOTE: Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" group are not presented and Hispanics are included in both the white and black population groups. Beginning in January 1999, data reflect revised population controls used in the household survey.

Table A-3. Employment status of the civilian population 25 years and over by educational attainment, seasonally adjusted

(Numbers in thousands)

Educational attainment	Not seasonally adjusted			Seasonally adjusted[1]					
	July 1998	June 1999	July 1999	July 1998	Mar. 1999	Apr. 1999	May 1999	June 1999	July 1999
Less than a high school diploma									
Civilian noninstitutional population	29,027	28,515	28,015	29,027	28,442	27,991	28,286	28,515	28,015
Civilian labor force	12,269	12,261	11,798	12,581	12,094	11,753	11,743	12,047	12,089
Percent of population	42.3	43.0	42.0	43.3	42.5	42.0	41.5	42.2	43.1
Employed	11,426	11,496	10,997	11,665	11,356	10,972	10,959	11,238	11,244
Employment-population ratio	39.4	40.3	39.3	40.2	39.9	39.2	38.7	39.4	40.1
Unemployed	842	765	769	886	739	781	784	810	825
Unemployment rate	6.9	6.2	6.5	7.1	6.1	6.6	6.7	6.7	6.8
High school graduates, no college[2]									
Civilian noninstitutional population	57,374	57,953	57,162	57,374	57,805	57,945	57,931	57,953	57,162
Civilian labor force	36,912	37,384	36,555	37,290	37,740	37,577	37,416	37,403	36,941
Percent of population	64.3	64.5	63.9	65.0	65.3	64.8	64.6	64.5	64.6
Employed	35,408	36,033	35,237	35,779	36,448	36,253	36,058	35,961	35,629
Employment-population ratio	61.7	62.2	61.6	62.4	63.1	62.6	62.2	62.0	62.3
Unemployed	1,504	1,351	1,318	1,511	1,292	1,324	1,359	1,442	1,313
Unemployment rate	4.1	3.6	3.6	4.1	3.4	3.5	3.6	3.9	3.6
Less than a bachelor's degree[3]									
Civilian noninstitutional population	42,293	42,780	43,610	42,293	43,028	43,059	42,742	42,780	43,610
Civilian labor force	31,448	31,699	32,288	31,220	31,892	32,160	31,830	31,837	32,102
Percent of population	74.4	74.0	74.0	73.8	74.1	74.7	74.7	74.7	73.8
Employed	30,466	30,913	31,284	30,274	30,989	31,202	31,043	31,130	31,077
Employment-population ratio	72.1	72.3	71.7	71.6	72.0	72.5	72.6	72.8	71.3
Unemployed	982	786	1,005	946	903	958	886	806	1,025
Unemployment rate	3.0	2.4	3.1	3.0	2.8	3.0	2.8	2.5	3.1
College graduates									
Civilian noninstitutional population	43,309	44,464	45,042	43,309	43,839	44,289	44,442	44,464	45,042
Civilian labor force	34,481	35,527	35,837	34,637	34,997	35,483	35,771	35,856	35,981
Percent of population	79.6	79.9	79.6	80.0	79.8	80.1	80.5	80.6	79.9
Employed	33,839	34,777	35,105	34,051	34,945	34,742	35,107	35,129	35,317
Employment-population ratio	78.1	78.2	77.9	78.6	78.3	78.4	79.0	79.0	78.4
Unemployed	643	750	733	586	652	752	664	727	664
Unemployment rate	1.9	2.1	2.0	1.7	1.9	2.1	1.9	2.0	1.8

[1] The population figures are not adjusted for seasonal variation, therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Includes high school diploma or equivalent.

[3] Includes the categories, some college, no degree; and associate degree.

NOTE: Beginning in January 1999, data reflect revised population controls used in the household survey.

Table A-4. Selected employment indicators

(In thousands)

Category	Not seasonally adjusted			Seasonally adjusted					
	July 1998	June 1999	July 1999	July 1998	Mar. 1999	Apr. 1999	May 1999	June 1999	July 1999
CHARACTERISTIC									
Total employed, 16 years and over	132,769	134,395	134,800	131,176	133,033	133,069	133,224	133,432	133,307
Married men, spouse present	42,794	43,205	43,310	42,850	43,114	43,190	42,882	43,291	43,353
Married women, spouse present	32,256	33,396	32,869	32,719	33,134	33,285	33,487	33,802	33,302
Women who maintain families	7,752	8,023	8,156	7,875	8,148	8,050	8,039	7,991	8,289
OCCUPATION									
Managerial and professional specialty	38,520	40,602	40,536	39,020	39,900	40,504	40,500	40,946	40,901
Technical, sales, and administrative support	39,923	39,767	39,959	39,513	39,893	39,866	39,103	39,729	39,573
Service occupations	18,111	18,290	18,450	17,683	18,074	17,868	18,111	18,020	18,035
Precision production, craft, and repair	14,584	14,422	14,578	14,334	14,661	14,518	14,432	14,084	14,405
Operators, fabricators, and laborers	18,431	18,383	18,287	18,157	18,177	17,655	17,813	18,190	17,985
Farming, forestry, and fishing	4,098	3,931	3,991	3,519	3,417	3,539	3,441	3,504	3,423
CLASS OF WORKER									
Agriculture:									
Wage and salary workers	2,285	2,207	2,201	2,010	1,893	1,908	1,919	1,911	1,938
Self-employed workers	1,543	1,443	1,450	1,374	1,376	1,439	1,348	1,369	1,300
Unpaid family workers	38	41	56	32	39	31	33	37	47
Nonagricultural industries:									
Wage and salary workers	119,638	121,653	122,062	118,647	121,005	120,785	121,168	121,005	121,157
Government	17,905	18,882	18,591	18,374	18,699	18,709	18,672	19,110	19,068
Private industries	101,733	102,791	103,471	100,273	102,306	102,076	102,496	101,895	102,089
Private households	1,021	1,006	1,007	986	917	941	910	1,001	943
Other industries	100,712	101,786	102,464	99,307	101,389	101,135	101,586	100,894	101,146
Self-employed workers	9,167	8,955	8,943	9,080	8,850	8,813	8,687	8,857	8,837
Unpaid family workers	96	96	78	91	125	63	60	87	74
PERSONS AT WORK PART TIME									
All industries:									
Part time for economic reasons	4,025	3,641	3,537	3,757	3,564	3,408	3,422	3,418	3,299
Slack work or business conditions	2,344	2,082	2,031	2,299	2,045	1,920	1,948	2,002	1,883
Could only find part-time work	1,383	1,158	1,185	1,213	1,208	1,124	1,137	1,014	1,044
Part time for noneconomic reasons	16,168	17,268	16,617	18,589	18,545	18,882	18,632	18,668	19,122
Nonagricultural industries:									
Part time for economic reasons	3,882	3,492	3,388	3,606	3,374	3,224	3,247	3,232	3,139
Slack work or business conditions	2,256	1,940	1,905	2,193	1,955	1,831	1,836	1,844	1,846
Could only find part-time work	1,339	1,141	1,159	1,182	1,159	1,082	1,111	1,010	1,028
Part time for noneconomic reasons	15,528	16,629	16,049	17,982	17,944	18,320	18,099	18,016	18,618

NOTE: Persons at work excludes employed persons who were absent from their jobs during the entire reference week for reasons such as vacation, illness, or industrial dispute. Part time for noneconomic reasons excludes persons who usually work full time but worked only 1 to 34 hours during the reference week for reasons such as holidays, illness, and bad weather. Beginning in January 1999, data reflect revised population controls used in the household survey.

HOUSEHOLD DATA

Table A-1. Employment status of the civilian population by sex and age

(Numbers in thousands)

Employment status, sex, and age	Not seasonally adjusted			Seasonally adjusted[1]					
	July 1998	June 1999	July 1999	July 1998	Mar. 1999	Apr. 1999	May 1999	June 1999	July 1999
TOTAL									
Civilian noninstitutional population	205,270	207,832	207,828	205,270	207,036	207,236	207,427	207,632	207,828
Civilian labor force	139,336	140,666	141,119	137,407	138,816	139,091	139,019	139,408	139,254
Participation rate	67.9	67.7	67.9	66.9	67.0	67.1	67.0	67.1	67.0
Employed	132,769	134,395	134,800	131,176	133,033	133,069	133,224	133,432	133,307
Employment-population ratio	64.7	64.7	64.9	63.9	64.3	64.2	64.2	64.3	64.1
Agriculture	3,856	3,691	3,718	3,423	3,281	3,394	3,295	3,354	3,292
Nonagricultural industries	128,903	130,704	131,083	127,753	129,752	129,685	129,929	130,078	130,015
Unemployed	6,567	6,271	6,319	6,231	5,783	6,022	5,795	5,975	5,947
Unemployment rate	4.7	4.5	4.5	4.5	4.2	4.3	4.2	4.3	4.3
Not in labor force	65,934	66,966	66,709	67,863	68,220	68,145	68,408	68,225	68,574
Men, 16 years and over									
Civilian noninstitutional population	98,785	99,668	99,761	98,785	99,362	99,465	99,563	99,668	99,761
Civilian labor force	75,467	75,472	75,940	73,989	74,234	74,234	74,316	74,420	74,500
Participation rate	76.4	75.7	76.1	74.9	74.7	74.6	74.6	74.7	74.7
Employed	72,049	72,312	72,803	70,629	71,352	71,225	71,196	71,321	71,444
Employment-population ratio	72.9	72.6	73.0	71.5	71.8	71.6	71.5	71.6	71.6
Unemployed	3,418	3,159	3,137	3,360	2,881	3,010	3,118	3,099	3,056
Unemployment rate	4.5	4.2	4.1	4.5	3.9	4.1	4.2	4.2	4.1
Men, 20 years and over									
Civilian noninstitutional population	90,802	91,487	91,561	90,802	91,215	91,302	91,368	91,487	91,561
Civilian labor force	70,202	70,486	70,812	69,738	69,951	69,991	69,932	70,127	70,164
Participation rate	77.3	77.0	77.1	76.8	76.7	76.7	76.5	76.7	76.6
Employed	67,619	68,144	68,212	67,056	67,713	67,608	67,399	67,633	67,687
Employment-population ratio	74.5	74.5	74.5	73.8	74.2	74.0	73.8	73.9	73.9
Agriculture	2,586	2,432	2,468	2,382	2,222	2,353	2,212	2,248	2,271
Nonagricultural industries	65,034	65,712	65,743	64,674	65,492	65,255	65,186	65,385	65,416
Unemployed	2,582	2,342	2,400	2,682	2,238	2,383	2,534	2,494	2,477
Unemployment rate	3.7	3.3	3.4	3.8	3.2	3.4	3.6	3.6	3.5
Women, 16 years and over									
Civilian noninstitutional population	106,484	107,964	108,067	106,484	107,674	107,771	107,864	107,964	108,067
Civilian labor force	63,869	65,195	65,179	63,418	64,582	64,857	64,704	64,988	64,754
Participation rate	60.0	60.4	60.3	59.6	60.0	60.2	60.0	60.2	59.9
Employed	60,720	62,083	61,997	60,547	61,680	61,845	62,026	62,112	61,863
Employment-population ratio	57.0	57.5	57.4	56.9	57.3	57.4	57.5	57.5	57.2
Unemployed	3,149	3,112	3,182	2,871	2,902	3,012	2,677	2,876	2,891
Unemployment rate	4.9	4.8	4.9	4.5	4.5	4.6	4.1	4.4	4.5
Women, 20 years and over									
Civilian noninstitutional population	98,778	100,131	100,203	98,778	99,833	99,923	100,008	100,131	100,203
Civilian labor force	59,101	60,748	60,409	59,465	60,533	60,788	60,729	61,092	60,791
Participation rate	59.8	60.7	60.3	60.2	60.6	60.8	60.7	61.0	60.7
Employed	56,569	58,351	57,837	57,076	58,183	58,320	58,520	58,719	58,373
Employment-population ratio	57.3	58.3	57.7	57.8	58.3	58.4	58.5	58.6	58.3
Agriculture	868	907	894	791	834	801	831	869	797
Nonagricultural industries	55,701	57,445	56,943	56,297	57,349	57,519	57,689	57,849	57,576
Unemployed	2,532	2,397	2,573	2,387	2,350	2,468	2,209	2,373	2,418
Unemployment rate	4.3	3.9	4.3	4.0	3.9	4.1	3.6	3.9	4.0
Both sexes, 16 to 19 years									
Civilian noninstitutional population	15,690	16,014	16,065	15,690	15,988	16,011	16,051	16,014	16,065
Civilian labor force	10,033	9,432	10,098	8,204	8,331	8,312	8,358	8,189	8,300
Participation rate	63.9	58.9	62.9	52.3	52.1	51.9	52.1	51.1	51.7
Employed	8,580	7,900	8,752	7,042	7,136	7,141	7,306	7,081	7,247
Employment-population ratio	54.7	49.3	54.5	44.9	44.6	44.6	45.5	44.2	45.1
Agriculture	412	353	355	260	224	230	252	237	225
Nonagricultural industries	8,168	7,547	8,397	6,782	6,912	6,911	7,054	6,843	7,023
Unemployed	1,453	1,532	1,347	1,162	1,195	1,171	1,052	1,108	1,053
Unemployment rate	14.5	16.2	13.3	14.2	14.3	14.1	12.6	13.5	12.7

[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

NOTE: Beginning in January 1999, data reflect revised population controls used in the household survey.

Table A-2. Employment status of the civilian population by race, sex, age, and Hispanic origin

(Numbers in thousands)

Employment status, race, sex, age, and Hispanic origin	Not seasonally adjusted			Seasonally adjusted[1]					
	July 1998	June 1999	July 1999	July 1998	Mar. 1999	Apr. 1999	May 1999	June 1999	July 1999
WHITE									
Civilian noninstitutional population	171,513	172,999	173,133	171,513	172,597	172,730	172,859	172,999	173,133
Civilian labor force	116,570	117,655	117,853	115,071	116,284	116,370	116,254	116,578	116,393
Participation rate	68.0	68.0	68.1	67.1	67.4	67.4	67.3	67.4	67.2
Employed	112,047	113,011	113,425	110,676	112,144	111,917	111,985	112,092	112,117
Employment-population ratio	65.3	65.3	65.5	64.5	65.0	64.8	64.8	64.8	64.8
Unemployed	4,523	4,644	4,429	4,395	4,140	4,454	4,269	4,486	4,276
Unemployment rate	3.9	3.9	3.8	3.8	3.6	3.8	3.7	3.8	3.7
Men, 20 years and over									
Civilian labor force	59,768	60,025	60,178	59,406	59,698	59,664	59,500	59,711	59,837
Participation rate	77.7	77.6	77.7	77.2	77.3	77.2	77.0	77.2	77.3
Employed	57,953	58,246	58,442	57,447	58,010	57,874	57,615	57,784	57,978
Employment-population ratio	75.3	75.3	75.5	74.6	75.1	74.9	74.5	74.7	74.9
Unemployed	1,816	1,779	1,736	1,959	1,688	1,790	1,884	1,927	1,859
Unemployment rate	3.0	3.0	2.9	3.3	2.8	3.0	3.2	3.2	3.1
Women, 20 years and over									
Civilian labor force	48,445	49,661	49,203	48,770	49,602	49,672	49,669	49,933	49,542
Participation rate	59.0	59.9	59.3	59.4	59.9	60.0	60.0	60.2	59.7
Employed	46,711	47,926	47,447	47,129	47,983	47,862	48,057	48,215	47,878
Employment-population ratio	56.9	57.8	57.2	57.4	58.0	57.8	58.0	58.2	57.7
Unemployed	1,734	1,735	1,756	1,641	1,620	1,811	1,602	1,718	1,665
Unemployment rate	3.6	3.5	3.6	3.4	3.3	3.6	3.2	3.4	3.4
Both sexes, 16 to 19 years									
Civilian labor force	8,356	7,969	8,472	6,895	6,984	7,034	7,085	6,934	7,013
Participation rate	67.0	62.7	66.5	55.3	55.2	55.5	55.8	54.6	55.1
Employed	7,384	6,839	7,536	6,100	6,151	6,181	6,302	6,099	6,261
Employment-population ratio	59.2	53.8	59.2	48.9	48.6	48.8	49.7	48.0	49.2
Unemployed	972	1,129	937	795	833	853	783	840	753
Unemployment rate	11.6	14.2	11.1	11.5	11.9	12.1	11.0	12.1	10
Men	12.9	13.8	11.2	13.2	12.7	12.6	11.9	11.8	10.
Women	10.2	14.6	10.9	9.7	11.1	11.6	10.1	12.5	10.6
BLACK									
Civilian noninstitutional population	24,381	24,833	24,867	24,381	24,729	24,765	24,798	24,833	24,867
Civilian labor force	16,413	16,462	16,747	16,045	16,212	16,286	16,303	16,300	16,384
Participation rate	67.3	66.3	67.3	65.8	65.6	65.8	65.7	65.6	65.9
Employed	14,708	15,156	15,146	14,511	14,904	15,029	15,079	15,103	14,949
Employment-population ratio	60.3	61.0	60.9	59.5	60.3	60.7	60.8	60.8	60.1
Unemployed	1,706	1,306	1,601	1,534	1,308	1,257	1,224	1,197	1,434
Unemployment rate	10.4	7.9	9.6	9.6	8.1	7.7	7.5	7.3	8.8
Men, 20 years and over									
Civilian labor force	7,173	7,188	7,194	7,111	7,065	7,118	7,206	7,152	7,132
Participation rate	73.7	72.5	72.5	73.1	71.6	72.0	72.8	72.1	71.8
Employed	6,537	6,768	6,647	6,491	6,656	6,681	6,727	6,712	6,601
Employment-population ratio	67.2	68.2	67.0	66.7	67.4	67.6	68.0	67.7	66.5
Unemployed	636	422	547	620	409	437	479	440	531
Unemployment rate	8.9	5.9	7.6	8.7	5.8	6.1	6.6	6.1	7.4
Women, 20 years and over									
Civilian labor force	7,910	8,183	8,315	7,916	8,129	8,241	8,177	8,214	8,318
Participation rate	64.8	65.5	66.8	64.9	65.5	66.4	65.8	66.0	66.8
Employed	7,238	7,632	7,610	7,294	7,545	7,681	7,653	7,671	7,663
Employment-population ratio	59.3	61.4	61.1	59.8	60.9	61.9	61.6	61.7	61.5
Unemployed	673	550	705	622	584	560	524	544	654
Unemployment rate	8.5	6.7	8.5	7.9	7.2	6.8	6.4	6.6	7.9
Both sexes, 16 to 19 years									
Civilian labor force	1,330	1,091	1,238	1,018	1,018	927	920	934	934
Participation rate	54.3	44.0	49.8	41.5	41.2	37.5	37.1	37.7	37.8
Employed	933	758	889	728	702	657	699	721	685
Employment-population ratio	38.1	30.5	35.8	29.8	28.4	26.9	28.2	29.0	27.6
Unemployed	397	334	349	292	316	260	222	214	249
Unemployment rate	29.9	30.6	28.2	28.7	31.0	28.1	24.1	22.9	26.7
Men	31.8	34.7	32.2	30.2	32.9	33.0	26.2	26.7	30.8
Women	27.7	26.7	24.0	27.0	29.1	23.5	22.0	19.6	22.9

See footnotes at end of table.

HOUSEHOLD DATA

Table A-5. Selected unemployment indicators, seasonally adjusted

Category	Number of unemployed persons (in thousands)			Unemployment rates[1]					
	July 1998	June 1999	July 1999	July 1998	Mar. 1999	Apr. 1999	May 1999	June 1999	July 1999
CHARACTERISTIC									
Total, 16 years and over	6,231	5,975	5,947	4.5	4.2	4.3	4.2	4.3	4.3
Men, 20 years and over	2,682	2,494	2,477	3.8	3.2	3.4	3.6	3.6	3.5
Women, 20 years and over	2,387	2,373	2,418	4.0	3.9	4.1	3.6	3.9	4.0
Both sexes, 16 to 19 years	1,162	1,108	1,053	14.2	14.3	14.1	12.6	13.5	12.7
Married men, spouse present	1,005	977	1,001	2.3	2.1	2.3	2.4	2.2	2.3
Married women, spouse present	955	926	990	2.8	2.7	2.9	2.5	2.7	2.9
Women who maintain families	587	561	571	6.9	6.7	7.2	6.0	6.6	6.4
Full-time workers	4,943	4,628	4,732	4.4	4.0	4.2	4.0	4.0	4.1
Part-time workers	1,283	1,317	1,216	5.2	4.9	4.9	5.1	5.4	4.9
OCCUPATION[2]									
Managerial and professional specialty	690	852	808	1.7	1.9	1.9	2.0	2.0	1.9
Technical, sales, and administrative support	1,532	1,431	1,594	3.8	3.8	3.9	3.3	3.6	4.0
Precision production, craft, and repair	849	725	568	4.3	3.6	3.8	4.1	4.9	3.8
Operators, fabricators, and laborers	1,351	1,166	1,216	6.9	5.9	6.5	6.5	6.0	6.3
Farming, forestry, and fishing	249	284	236	6.6	6.9	7.3	8.0	7.5	6.4
INDUSTRY									
Nonagricultural private wage and salary workers	4,858	4,699	4,710	4.6	4.2	4.4	4.2	4.4	4.4
Goods-producing industries	1,385	1,322	1,240	4.8	4.3	4.5	4.4	4.7	4.4
Mining	25	26	40	3.9	5.3	9.3	5.9	4.7	6.4
Construction	460	531	491	6.8	6.7	7.4	7.2	7.5	6.7
Manufacturing	900	784	709	4.3	3.4	3.3	3.4	3.8	3.5
Durable goods	522	448	474	4.1	2.9	3.1	3.3	3.6	3.8
Nondurable goods	378	317	235	4.6	4.1	3.7	3.6	4.0	3.0
Service-producing industries	3,483	3,377	3,470	4.6	4.2	4.3	4.1	4.3	4.4
Transportation and public utilities	249	214	278	3.4	2.9	2.8	3.3	2.8	3.6
Wholesale and retail trade	1,494	1,441	1,396	5.6	5.4	5.4	5.3	5.4	5.2
Finance, insurance, and real estate	160	189	191	2.1	1.9	3.2	2.1	2.3	2.3
Services	1,580	1,533	1,605	4.6	4.2	4.1	3.9	4.2	4.5
Government workers	443	470	439	2.4	2.1	2.5	2.6	2.4	2.3
Agricultural wage and salary workers	180	203	189	8.2	9.5	9.7	10.7	9.6	8.9

[1] Unemployment as a percent of the civilian labor force.

[2] Seasonally adjusted unemployment data for service occupations are not available because the seasonal component, which is small relative to the trend-cycle and irregular components, cannot be separated with sufficient precision.

NOTE: Beginning in January 1999, data reflect revised population controls used in the household survey.

Table A-6. Duration of unemployment

(Numbers in thousands)

Duration	Not seasonally adjusted			Seasonally adjusted					
	July 1998	June 1999	July 1999	July 1998	Mar. 1999	Apr. 1999	May 1999	June 1999	July 1999
NUMBER OF UNEMPLOYED									
Less than 5 weeks	2,845	3,136	2,910	2,826	2,478	2,788	2,467	2,529	2,680
5 to 14 weeks	2,179	1,552	1,934	1,975	1,891	1,867	1,816	1,736	1,768
15 weeks and over	1,543	1,583	1,475	1,606	1,434	1,446	1,523	1,668	1,505
15 to 26 weeks	685	802	714	783	736	773	794	824	787
27 weeks and over	858	782	761	823	697	673	729	844	718
Average (mean) duration, in weeks	13.7	13.1	13.1	14.3	13.5	13.1	13.4	14.5	13.6
Median duration, in weeks	6.3	4.5	5.4	6.7	6.9	6.1	6.7	6.2	5.7
PERCENT DISTRIBUTION									
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than 5 weeks	43.3	50.0	46.1	42.3	42.7	45.7	42.5	42.6	45.0
5 to 14 weeks	33.2	24.7	30.6	31.8	32.6	30.6	31.3	29.3	29.7
15 weeks and over	23.5	25.2	23.3	25.9	24.7	23.7	26.2	28.1	25.3
15 to 26 weeks	10.4	12.8	11.3	12.6	12.7	12.7	13.7	13.9	13.2
27 weeks and over	13.1	12.5	12.0	13.3	12.0	11.0	12.6	14.2	12.1

NOTE: Beginning in January 1999, data reflect revised population controls used in the household survey.

Table A-7. Reason for unemployment

(Numbers in thousands)

Reason	Not seasonally adjusted			Seasonally adjusted					
	July 1998	June 1999	July 1999	July 1998	Mar. 1999	Apr. 1999	May 1999	June 1999	July 1999
NUMBER OF UNEMPLOYED									
Job losers and persons who completed temporary jobs	2,847	2,495	2,729	2,865	2,563	2,700	2,663	2,683	2,740
On temporary layoff	935	746	862	931	812	838	821	892	850
Not on temporary layoff	1,912	1,750	1,867	1,934	1,751	1,862	1,842	1,791	1,890
Permanent job losers	1,316	1,253	1,267	(1)	(1)	(1)	(1)	(1)	(1)
Persons who completed temporary jobs	596	497	600	(1)	(1)	(1)	(1)	(1)	(1)
Job leavers	817	820	817	770	780	841	789	854	755
Reentrants	2,173	2,293	2,101	2,072	1,988	2,044	2,040	2,057	2,011
New entrants	731	663	672	474	431	469	415	349	402
PERCENT DISTRIBUTION									
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers and persons who completed temporary jobs	43.3	39.8	43.2	46.4	44.5	44.6	45.1	45.1	46.4
On temporary layoff	14.2	11.9	13.6	15.1	14.1	13.9	13.9	15.0	14.4
Not on temporary layoff	29.1	27.9	29.5	31.3	30.4	30.8	31.2	30.1	32.0
Job leavers	12.4	13.1	12.9	12.5	13.5	13.9	13.4	14.5	12.8
Reentrants	33.1	36.6	33.2	33.5	34.5	33.8	34.5	34.6	34.0
New entrants	11.1	10.6	10.6	7.7	7.5	7.7	7.0	5.9	6.8
UNEMPLOYED AS A PERCENT OF THE CIVILIAN LABOR FORCE									
Job losers and persons who completed temporary jobs	2.0	1.8	1.9	2.1	1.8	1.9	1.9	1.9	2.0
Job leavers	.6	.6	.6	.6	.6	.6	.6	.6	.5
Reentrants	1.6	1.6	1.5	1.5	1.4	1.5	1.5	1.5	1.4
New entrants	.5	.5	.5	.3	.3	.3	.3	.3	.3

(1) Not available.

NOTE: Beginning in January 1999, data reflect revised population controls used in the household survey.

Table A-8. Range of alternative measures of labor underutilization

(Percent)

Measure	Not seasonally adjusted			Seasonally adjusted					
	July 1998	June 1999	July 1999	July 1998	Mar. 1999	Apr. 1999	May 1999	June 1999	July 1999
U-1 Persons unemployed 15 weeks or longer, as a percent of the civilian labor force	1.1	1.1	1.0	1.2	1.0	1.0	1.1	1.2	1.1
U-2 Job losers and persons who completed temporary jobs, as a percent of the civilian labor force	2.0	1.8	1.9	2.1	1.8	1.9	1.9	1.9	2.0
U-3 Total unemployed, as a percent of the civilian labor force (official unemployment rate)	4.7	4.5	4.5	4.5	4.2	4.3	4.2	4.3	4.3
U-4 Total unemployed plus discouraged workers, as a percent of the civilian labor force plus discouraged workers	5.0	4.8	4.7	(1)	(1)	(1)	(1)	(1)	(1)
U-5 Total unemployed, plus discouraged workers, plus all other marginally attached workers, as a percent of the civilian labor force plus all marginally attached workers	5.8	5.3	5.2	(1)	(1)	(1)	(1)	(1)	(1)
U-6 Total unemployed, plus all marginally attached workers, plus total employed part time for economic reasons, as a percent of the civilian labor force plus all marginally attached workers	8.5	7.9	7.7	(1)	(1)	(1)	(1)	(1)	(1)

(1) Not available.

NOTE: This range of alternative measures of labor underutilization replaces the U1-U7 range published in table A-7 of this release prior to 1994. Marginally attached workers are persons who currently are neither working nor looking for work but indicate that they want and are available for a job and have looked for work sometime in the recent past. Discouraged workers, a subset of the marginally attached, have given a job-market related reason for not currently looking for a job. Persons employed part time for economic reasons are those who want and are available for full-time work but have had to settle for a part-time schedule. For their information, see "BLS introduces new range of alternative unemployment measure the October 1995 issue of the *Monthly Labor Review*. Beginning in January 1999, data reflect revised population controls used in the household survey.

Table A-9. Unemployed persons by sex and age, seasonally adjusted

Age and sex	Number of unemployed persons (in thousands)			Unemployment rates[1]					
	July 1998	June 1999	July 1999	July 1998	Mar. 1999	Apr. 1999	May 1999	June 1999	July 1999
Total, 16 years and over	6,231	5,975	5,947	4.5	4.2	4.3	4.2	4.3	4.3
16 to 24 years	2,267	2,181	2,128	10.4	10.0	10.0	9.4	9.9	9.6
16 to 19 years	1,162	1,108	1,053	14.2	14.3	14.1	12.6	13.5	12.7
16 to 17 years	513	524	493	15.7	16.6	16.9	15.9	16.1	14.6
18 to 19 years	646	585	563	13.1	12.8	12.3	10.6	11.8	11.4
20 to 24 years	1,105	1,073	1,075	8.2	7.4	7.6	7.5	7.7	7.7
25 years and over	3,930	3,788	3,792	3.4	3.1	3.2	3.2	3.2	3.2
25 to 54 years	3,437	3,242	3,242	3.5	3.1	3.3	3.2	3.3	3.3
55 years and over	483	537	544	2.8	2.9	2.9	2.6	3.0	3.0
Men, 16 years and over	3,360	3,099	3,056	4.5	3.9	4.1	4.2	4.2	4.1
16 to 24 years	1,289	1,231	1,180	11.3	9.9	10.5	10.2	10.7	10.2
16 to 19 years	678	605	579	15.9	15.0	14.8	13.3	14.1	13.4
16 to 17 years	307	282	271	18.0	16.9	19.2	17.7	16.5	15.4
18 to 19 years	365	333	303	14.3	13.6	12.2	10.6	12.8	11.8
20 to 24 years	611	626	601	8.5	7.0	8.0	8.3	8.7	8.3
25 years and over	2,068	1,861	1,866	3.3	2.7	2.9	3.1	3.0	3.0
25 to 54 years	1,777	1,601	1,559	3.4	2.8	2.9	3.1	3.0	2.9
55 years and over	288	258	316	3.0	2.6	2.6	2.7	2.6	3.2
Women, 16 years and over	2,871	2,876	2,891	4.5	4.5	4.6	4.1	4.4	4.5
16 to 24 years	978	950	948	9.5	10.0	9.5	8.6	9.0	8.9
16 to 19 years	484	503	473	12.2	13.6	13.4	11.8	12.9	11.9
16 to 17 years	206	241	222	13.2	16.2	14.5	13.8	15.7	13.8
18 to 19 years	281	253	260	11.7	11.9	12.5	10.6	10.7	11.0
20 to 24 years	494	447	475	7.7	7.8	7.1	6.7	6.7	7.1
25 years and over	1,862	1,927	1,926	3.5	3.4	3.6	3.2	3.5	3.6
25 to 54 years	1,660	1,641	1,683	3.6	3.5	3.7	3.4	3.5	3.7
55 years and over	195	279	228	2.6	3.2	3.3	2.6	3.5	2.9

[1] Unemployment as a percent of the civilian labor force.

NOTE: Beginning in January 1999, data reflect revised population controls used in the household survey.

Table A-10. Persons not in the labor force and multiple jobholders by sex, not seasonally adjusted

(Numbers in thousands)

Category	Total		Men		Women	
	July 1998	July 1999	July 1998	July 1999	July 1998	July 1999
NOT IN THE LABOR FORCE						
Total not in the labor force	65,934	66,709	23,319	23,821	42,616	42,888
Persons who currently want a job	4,763	4,490	1,813	1,715	2,950	2,774
Searched for work and available to work now[1]	1,328	1,133	635	493	692	640
Reason not currently looking:						
Discouragement over job prospects[2]	374	290	225	159	149	131
Reasons other than discouragement[3]	953	843	410	334	543	509
MULTIPLE JOBHOLDERS						
Total multiple jobholders[4]	7,843	7,636	4,099	4,155	3,544	3,481
Percent of total employed	5.8	5.7	5.7	5.7	5.8	5.6
Primary job full time, secondary job part time	4,253	4,101	2,485	2,439	1,769	1,662
Primary and secondary jobs both part time	1,563	1,735	539	604	1,024	1,131
Primary and secondary jobs both full time	308	300	223	206	86	95
Hours vary on primary or secondary job	1,456	1,459	821	890	636	569

[1] Data refer to persons who have searched for work during the prior 12 months and were available to take a job during the reference week.

[2] Includes thinks no work available, could not find work, lacks schooling or training, employer thinks too young or old, and other types of discrimination.

[3] Includes those who did not actively look for work in the prior 4 weeks for such reasons as child-care and transportation problems, as well as a small number for which reason for nonparticipation was not determined.

[4] Includes persons who work part time on their primary job and full time on their secondary job(s), not shown separately.

NOTE: Beginning in January 1999, data reflect revised population controls used in the household survey.

Table B-1. Employees on nonfarm payrolls by industry

(In thousands)

Industry	Not seasonally adjusted				Seasonally adjusted					
	July 1998	May 1999	June 1999P	July 1999P	July 1998	Mar. 1999	Apr. 1999	May 1999	June 1999P	July 1999P
Total	125,762	128,850	129,585	128,740	125,808	127,813	128,134	128,162	128,435	128,745
Total private	107,010	108,362	109,400	109,670	106,009	107,726	108,035	108,085	108,324	108,618
Goods-producing	25,544	25,243	25,528	25,554	25,240	25,285	25,288	25,199	25,180	25,230
Mining	598	531	534	534	588	550	538	531	527	524
Metal mining	51.1	48.9	49.4	49.2	50	50	49	49	48	48
Coal mining	90.0	85.8	85.5	83.9	90	87	86	86	85	84
Oil and gas extraction	344.3	264.6	285.7	286.6	339	305	294	287	285	282
Nonmetallic minerals, except fuels	112.7	111.4	113.0	113.9	109	108	109	109	109	110
Construction	6,326	6,304	6,500	6,633	5,990	6,232	6,277	6,239	6,260	6,282
General building contractors	1,444.8	1,424.5	1,478.9	1,509.5	1,377	1,429	1,428	1,427	1,433	1,437
Heavy construction, except building	911.9	887.6	917.0	931.7	842	864	874	854	857	860
Special trade contractors	3,969.1	3,991.8	4,104.3	4,191.9	3,771	3,939	3,975	3,958	3,970	3,985
Manufacturing	18,620	18,408	18,494	18,387	18,662	18,503	18,473	18,429	18,393	18,424
Production workers	12,725	12,647	12,699	12,599	12,801	12,714	12,696	12,662	12,623	12,671
Durable goods	11,017	10,980	11,029	10,951	11,066	11,014	10,993	10,971	10,959	10,998
Production workers	7,456	7,519	7,547	7,469	7,521	7,527	7,519	7,504	7,490	7,535
Lumber and wood products	824.1	821.9	832.6	834.2	812	827	824	824	823	822
Furniture and fixtures	526.7	537.4	539.8	539.4	532	535	536	537	537	545
Stone, clay, and glass products	569.7	573.8	579.4	578.6	563	569	570	569	568	571
Primary metal industries	697.3	688.3	690.3	681.8	705	693	691	689	687	689
Blast furnaces and basic steel products	232.4	221.6	221.2	221.1	(1)	(1)	(1)	(1)	(1)	(1)
Fabricated metal products	1,474.9	1,486.4	1,493.6	1,479.0	1,491	1,490	1,489	1,487	1,486	1,495
Industrial machinery and equipment	2,201.4	2,134.2	2,139.2	2,126.9	2,208	2,139	2,132	2,129	2,127	2,133
Computer and office equipment	381.0	362.1	364.4	363.4	379	360	361	362	363	362
Electronic and other electrical equipment	1,700.9	1,654.2	1,653.1	1,658.8	1,705	1,659	1,658	1,658	1,657	1,663
Electronic components and accessories	660.8	635.3	640.6	637.7	659	636	635	635	638	636
Transportation equipment	1,760.1	1,858.9	1,860.7	1,824.1	1,788	1,873	1,864	1,853	1,850	1,852
Motor vehicles and equipment	861.0	1,001.7	1,007.0	976.0	887	992	996	996	998	1,003
Aircraft and parts	525.2	496.1	490.4	487.7	526	511	503	498	491	489
Instruments and related products	870.0	838.3	840.8	842.8	869	844	842	839	837	842
Miscellaneous manufacturing	391.7	386.8	389.3	384.9	393	385	387	386	387	386
Nondurable goods	7,603	7,428	7,465	7,436	7,596	7,489	7,480	7,458	7,434	7,426
Production workers	5,269	5,128	5,152	5,130	5,280	5,187	5,177	5,158	5,133	5,136
Food and kindred products	1,708.0	1,659.1	1,678.7	1,698.7	1,684	1,693	1,689	1,688	1,680	1,675
Tobacco products	36.8	35.3	35.7	35.4	40	39	38	38	39	39
Textile mill products	593.7	564.0	563.6	555.8	597	571	567	563	560	559
Apparel and other textile products	751.5	693.7	691.6	674.2	764	702	698	691	685	681
Paper and allied products	675.6	658.9	663.2	660.4	674	662	662	661	659	659
Printing and publishing	1,568.2	1,549.5	1,553.5	1,552.5	1,567	1,557	1,555	1,551	1,551	1,552
Chemicals and allied products	1,050.2	1,035.9	1,039.8	1,037.4	1,044	1,037	1,038	1,036	1,033	1,032
Petroleum and coal products	143.4	138.5	140.1	140.6	140	139	139	138	137	137
Rubber and misc. plastics products	995.8	1,017.8	1,024.2	1,011.2	1,004	1,014	1,019	1,018	1,016	1,020
Leather and leather products	79.9	74.8	75.0	70.1	82	75	75	74	74	72
Service-producing	100,218	103,607	104,057	103,186	100,568	102,528	102,846	102,963	103,255	103,515
Transportation and public utilities	6,592	6,773	6,813	6,777	6,606	6,732	6,750	6,758	6,778	6,792
Transportation	4,253	4,414	4,441	4,404	4,281	4,378	4,397	4,402	4,418	4,432
Railroad transportation	232.9	233.5	235.3	236.7	231	235	234	233	234	235
Local and interurban passenger transit	407.9	428.1	422.4	421.2	469	476	483	480	483	484
Trucking and warehousing	1,771.2	1,797.5	1,826.3	1,839.1	1,749	1,786	1,800	1,802	1,809	1,815
Water transportation	191.1	182.0	187.1	191.1	181	177	180	180	180	181
Transportation by air	1,181.1	1,220.6	1,226.0	1,231.1	1,183	1,218	1,220	1,226	1,230	1,233
Pipelines, except natural gas	14.3	13.3	13.5	13.6	14	14	14	13	13	13
Transportation services	454.5	468.6	470.2	471.2	454	462	466	468	469	471
Communications and public utilities	2,339	2,359	2,372	2,373	2,325	2,354	2,353	2,356	2,360	2,360
Communications	1,477.0	1,514.6	1,520.3	1,520.9	1,472	1,508	1,508	1,513	1,514	1,516
Electric, gas, and sanitary services	862.4	844.1	852.0	852.5	853	848	845	843	846	844
Wholesale trade	6,885	6,986	7,032	7,055	6,936	6,947	6,965	6,977	6,989	7,005
Durable goods	4,074	4,131	4,161	4,176	4,046	4,103	4,113	4,124	4,135	4,147
Nondurable goods	2,811	2,855	2,871	2,879	2,790	2,844	2,852	2,853	2,854	2,858

See footnotes at end of table.

Table B-1. Employees on nonfarm payrolls by industry – Continued

(In thousands)

Industry	Not seasonally adjusted				Seasonally adjusted					
	July 1998	May 1999	June 1999[P]	July 1999[P]	July 1998	Mar. 1999	Apr. 1999	May 1999	June 1999[P]	July 1999[P]
Retail trade	22,457	22,779	22,990	23,024	22,321	22,611	22,724	22,748	22,792	22,883
Building materials and garden supplies	983.2	1,024.1	1,032.1	1,023.5	947	982	982	979	981	986
General merchandise stores	2,671.3	2,702.5	2,720.9	2,724.6	2,726	2,794	2,799	2,784	2,784	2,783
Department stores	2,375.3	2,412.3	2,427.9	2,429.1	2,426	2,489	2,499	2,486	2,485	2,482
Food stores	3,508.1	3,458.7	3,494.7	3,500.6	3,484	3,490	3,492	3,487	3,476	3,476
Automotive dealers and service stations	2,374.1	2,406.0	2,424.6	2,443.8	2,343	2,392	2,399	2,400	2,402	2,412
New and used car dealers	1,053.6	1,077.0	1,083.8	1,091.4	1,048	1,069	1,074	1,077	1,080	1,086
Apparel and accessory stores	1,141.4	1,146.1	1,165.6	1,174.8	1,143	1,157	1,163	1,172	1,177	1,181
Furniture and home furnishings stores	1,017.5	1,071.5	1,079.4	1,081.6	1,026	1,070	1,081	1,084	1,091	1,091
Eating and drinking places	7,938.4	8,032.4	8,149.5	8,150.7	7,767	7,785	7,863	7,880	7,913	7,974
Miscellaneous retail establishments	2,823.0	2,927.2	2,923.3	2,924.1	2,878	2,931	2,945	2,962	2,968	2,980
Finance, insurance, and real estate	7,526	7,618	7,710	7,753	7,430	7,595	7,611	7,621	7,639	7,652
Finance	3,633	3,700	3,731	3,749	3,606	3,690	3,697	3,706	3,713	3,720
Depository institutions	2,059.8	2,043.6	2,060.4	2,066.4	2,043	2,051	2,050	2,047	2,048	2,049
Commercial banks	1,480.3	1,462.1	1,475.5	1,480.4	1,468	1,468	1,467	1,465	1,466	1,468
Savings institutions	260.7	256.2	258.1	258.2	258	258	257	256	256	256
Nondepository institutions	665.5	719.5	723.3	724.1	663	712	716	720	721	721
Mortgage bankers and brokers	333.0	374.9	375.7	373.3	331	368	370	374	373	371
Security and commodity brokers	656.6	669.9	679.4	690.0	650	664	668	672	676	683
Holding and other investment offices	251.0	267.3	268.3	268.8	250	263	263	267	268	267
Insurance	2,362	2,396	2,411	2,418	2,349	2,392	2,395	2,399	2,402	2,404
Insurance carriers	1,612.7	1,632.5	1,643.7	1,646.1	1,602	1,632	1,631	1,635	1,638	1,635
Insurance agents, brokers, and service	749.2	763.8	767.1	771.7	747	760	764	764	764	769
Real estate	1,531	1,522	1,568	1,586	1,475	1,513	1,519	1,516	1,524	1,528
Services[2]	38,006	38,963	39,327	39,507	37,576	38,556	38,697	38,782	38,946	39,056
Agricultural services	780.2	808.4	841.6	839.5	704	747	755	751	758	758
Hotels and other lodging places	1,926.0	1,803.8	1,900.4	1,953.5	1,782	1,789	1,791	1,786	1,799	1,807
Personal services	1,154.1	1,180.3	1,172.5	1,182.1	1,197	1,200	1,204	1,189	1,200	1,205
Business services	8,641.3	9,023.5	9,136.9	9,197.2	8,601	8,963	9,010	9,047	9,088	9,154
Services to buildings	959.6	985.5	998.0	1,000.1	952	973	978	979	987	992
Personnel supply services	3,236.6	3,348.6	3,398.6	3,426.0	3,234	3,343	3,350	3,368	3,383	3,424
Help supply services	2,881.1	2,968.9	3,014.6	3,037.9	2,873	2,957	2,975	2,986	2,998	3,029
Computer and data processing services	1,815.0	1,761.7	1,780.2	1,796.4	1,813	1,734	1,749	1,765	1,780	1,793
Auto repair, services, and parking	1,153.9	1,183.5	1,190.4	1,191.6	1,146	1,176	1,178	1,182	1,182	1,184
Miscellaneous repair services	386.1	398.2	400.4	400.6	381	393	396	398	396	396
Motion pictures	582.9	604.2	610.6	614.6	573	580	587	604	608	604
Amusement and recreation services	1,893.2	1,764.8	1,941.0	2,007.7	1,599	1,660	1,668	1,675	1,688	1,695
Health services	9,879.0	9,947.3	9,987.6	10,013.9	9,847	9,932	9,951	9,954	9,983	9,982
Offices and clinics of medical doctors	1,810.5	1,857.4	1,868.7	1,879.6	1,803	1,850	1,856	1,860	1,864	1,872
Nursing and personal care facilities	1,767.6	1,750.5	1,758.6	1,760.1	1,762	1,754	1,753	1,755	1,754	1,754
Hospitals	3,947.3	3,960.4	3,978.2	3,989.1	3,931	3,963	3,956	3,966	3,971	3,973
Home health care services	664.2	655.5	654.6	653.2	665	653	656	653	653	654
Legal services	991.0	993.7	1,016.3	1,019.3	974	995	998	999	1,001	1,002
Educational services	1,901.2	2,298.8	2,075.2	1,963.1	2,177	2,243	2,254	2,265	2,278	2,271
Social services	2,666.2	2,786.1	2,772.1	2,776.0	2,650	2,744	2,755	2,760	2,773	2,759
Child day care services	556.1	650.3	620.6	582.4	607	627	628	629	635	635
Residential care	752.5	775.0	782.1	787.1	746	769	772	775	776	781
Museums and botanical and zoological gardens	100.6	96.9	100.8	102.3	92	95	94	93	94	94
Membership organizations	2,433.7	2,393.5	2,448.0	2,481.9	2,362	2,392	2,392	2,394	2,409	2,409
Engineering and management services	3,226.2	3,386.4	3,438.3	3,467.9	3,201	3,354	3,370	3,391	3,414	3,440
Engineering and architectural services	923.7	937.3	957.0	964.3	910	933	939	940	944	950
Management and public relations	1,049.2	1,145.0	1,163.8	1,175.3	1,037	1,123	1,133	1,143	1,154	1,162
Services, nec	52.7	56.2	57.4	58.7	(1)	(1)	(1)	(1)	(1)	(1)
Government	18,752	20,488	20,185	19,070	19,799	20,087	20,099	20,077	20,111	20,127
Federal	2,689	2,698	2,882	2,675	2,675	2,710	2,688	2,686	2,693	2,693
Federal, except Postal Service	1,833.9	1,797.4	1,814.9	1,810.9	1,809	1,831	1,809	1,788	1,796	1,797
State	4,391	4,740	4,538	4,459	4,612	4,680	4,688	4,677	4,679	4,681
Education	1,638.0	2,003.0	1,761.3	1,658.3	1,915	1,948	1,955	1,941	1,936	1,938
Other State government	2,752.7	2,736.5	2,776.4	2,800.4	2,697	2,732	2,733	2,736	2,743	2,743
Local	11,672	13,082	12,965	11,936	12,512	12,697	12,723	12,734	12,769	12,783
Education	5,937.5	7,596.2	7,268.3	6,093.5	7,078	7,200	7,206	7,225	7,242	7,247
Other local government	5,734.9	5,486.0	5,697.0	5,842.6	5,434	5,497	5,517	5,509	5,527	5,536

[1] These series are not published seasonally adjusted because the seasonal component, which is small relative to the trend-cycle and irregular components, cannot be separated with sufficient precision.

[2] Includes other industries, not shown separately.

[P] = preliminary.

Table B-2. Average weekly hours of production or nonsupervisory workers[1] on private nonfarm payrolls by industry

Industry	Not seasonally adjusted				Seasonally adjusted					
	July 1998	May 1999	June 1999[p]	July 1999[p]	July 1998	Mar. 1999	Apr. 1999	May 1999	June 1999[p]	July 1999[p]
Total private	34.6	34.6	34.6	34.7	34.6	34.5	34.4	34.4	34.5	34.5
Goods-producing	40.9	41.1	41.3	40.9	41.2	40.8	40.9	41.0	41.1	41.1
Mining	43.9	44.2	44.2	44.2	44.3	42.9	43.8	44.1	44.0	44.6
Construction	40.2	39.3	39.8	39.9	39.2	38.5	38.6	38.9	39.4	38.9
Manufacturing	41.1	41.7	41.8	41.2	41.7	41.5	41.6	41.7	41.7	41.9
Overtime hours	4.4	4.5	4.7	4.5	4.6	4.5	4.3	4.6	4.7	4.8
Durable goods	41.5	42.3	42.4	41.6	42.3	42.0	42.1	42.2	42.3	42.4
Overtime hours	4.4	4.7	4.8	4.6	4.6	4.6	4.3	4.7	4.8	5.0
Lumber and wood products	41.2	41.4	41.6	41.2	41.2	41.2	41.2	41.2	41.1	41.2
Furniture and fixtures	40.3	39.8	40.3	39.9	40.7	40.3	40.4	40.4	40.4	40.3
Stone, clay, and glass products	43.8	43.8	43.9	43.5	43.6	42.9	43.1	43.4	43.4	43.3
Primary metal industries	43.1	44.4	44.3	43.6	44.0	43.9	44.0	44.3	44.2	44.5
Blast furnaces and basic steel products	43.9	44.9	45.1	44.4	44.4	43.9	44.5	44.8	45.1	44.9
Fabricated metal products	41.6	42.1	42.3	41.6	42.4	42.1	41.8	42.1	42.1	42.4
Industrial machinery and equipment	42.3	42.2	42.1	41.7	42.9	41.9	41.9	42.1	42.0	42.4
Electronic and other electrical equipment	40.6	41.2	41.4	40.5	41.4	41.0	41.1	41.5	41.4	41.3
Transportation equipment	41.0	43.9	44.1	42.3	43.0	43.7	44.0	43.5	44.2	44.5
Motor vehicles and equipment	39.6	45.2	45.5	43.0	42.5	44.7	45.1	44.4	45.5	46.2
Instruments and related products	40.7	41.4	41.5	40.9	41.4	41.2	41.6	41.6	41.5	41.6
Miscellaneous manufacturing	39.2	40.1	39.9	39.0	40.0	39.8	39.6	40.2	40.0	39.8
Nondurable goods	40.6	40.9	41.0	40.7	41.0	40.8	40.9	41.0	41.0	41.1
Overtime hours	4.3	4.2	4.4	4.4	4.4	4.4	4.2	4.4	4.5	4.5
Food and kindred products	41.6	41.6	41.7	41.8	41.8	41.7	41.9	41.8	41.9	42.0
Tobacco products	39.3	39.8	39.9	39.3	40.1	38.8	38.6	39.9	38.9	40.0
Textile mill products	40.4	40.9	41.0	40.5	41.0	40.4	41.0	41.0	40.6	41.2
Apparel and other textile products	36.9	37.8	38.2	37.4	37.4	37.4	37.5	37.8	37.8	37.9
Paper and allied products	43.1	43.3	43.5	42.9	43.6	43.7	43.6	43.5	43.5	43.4
Printing and publishing	38.1	38.0	37.8	37.9	38.4	37.9	38.1	38.3	38.2	38.2
Chemicals and allied products	42.7	42.8	42.9	42.6	43.1	42.8	43.0	43.0	42.9	43.0
Petroleum and coal products	44.8	42.6	42.5	43.2	(2)	(2)	(2)	(2)	(2)	(2)
Rubber and misc. plastics products	41.1	41.9	41.9	41.2	41.9	41.8	41.5	41.9	41.8	42.0
Leather and leather products	36.9	38.3	38.4	37.7	37.3	37.7	38.1	38.4	37.9	38.2
Service-producing	33.2	32.9	32.9	33.1	33.0	32.8	32.8	32.8	32.8	32.8
Transportation and public utilities	39.7	38.8	39.0	38.9	39.5	39.1	39.0	38.8	38.9	38.7
Wholesale trade	38.3	38.6	38.4	38.4	38.4	38.4	38.4	38.3	38.4	38.4
Retail trade	29.8	29.1	29.4	29.8	29.1	29.0	29.0	29.1	29.1	29.1
Finance, insurance, and real estate	36.1	36.4	35.9	36.0	(2)	(2)	(2)	(2)	(2)	(2)
Services	32.9	32.7	32.6	32.8	32.7	32.6	32.5	32.5	32.6	32.6

[1] Data relate to production workers in mining and manufacturing; construction workers in construction; and nonsupervisory workers in transportation and public utilities; wholesale and retail trade; finance, insurance, and real estate; and services. These groups account for approximately four-fifths of the total employees on private nonfarm payrolls.

[2] These series are not published seasonally adjusted because the seasonal component, which is small relative to the trend-cycle and irregular components, cannot be separated with sufficient precision.

[p] = preliminary.

Table B-3. Average hourly and weekly earnings of production or nonsupervisory workers[1] on private nonfarm payrolls by industry

Industry	Average hourly earnings				Average weekly earnings			
	July 1998	May 1999	June 1999p	July 1999p	July 1998	May 1999	June 1999p	July 1999p
Total private	$12.68	$13.19	$13.14	$13.16	$441.26	$456.37	$454.64	$456.65
Seasonally adjusted	12.80	13.18	13.23	13.29	442.88	453.39	456.44	458.51
Goods-producing	14.35	14.75	14.83	14.94	586.92	606.23	612.48	611.05
Mining	16.76	17.00	16.95	17.13	735.76	751.40	749.19	757.15
Construction	16.66	17.02	17.07	17.26	669.73	668.89	679.39	688.67
Manufacturing	13.38	13.85	13.90	13.94	549.92	577.55	581.02	574.33
Durable goods	13.77	14.34	14.40	14.41	571.46	606.58	610.56	599.46
Lumber and wood products	11.17	11.42	11.44	11.52	460.20	472.79	475.90	474.62
Furniture and fixtures	10.91	11.14	11.15	11.24	439.67	443.37	449.35	448.48
Stone, clay, and glass products	13.59	13.87	13.94	14.03	595.24	607.51	611.97	610.31
Primary metal industries	15.56	15.75	15.89	16.13	670.64	699.30	703.93	703.27
Blast furnaces and basic steel products	18.50	18.79	19.04	19.35	812.15	843.67	858.70	859.14
Fabricated metal products	12.88	13.45	13.46	13.53	535.81	566.25	569.36	562.85
Industrial machinery and equipment	14.43	14.95	14.98	15.07	610.39	630.89	630.66	628.42
Electronic and other electrical equipment	13.13	13.38	13.41	13.45	533.08	551.26	555.17	544.73
Transportation equipment	16.86	17.98	18.19	18.01	691.26	789.32	802.18	761.82
Motor vehicles and equipment	16.79	18.40	18.65	18.33	664.88	831.68	848.58	788.19
Instruments and related products	13.78	14.10	14.12	14.23	560.85	583.74	585.98	582.01
Miscellaneous manufacturing	10.85	11.25	11.29	11.32	425.32	451.13	450.47	441.48
Nondurable goods	12.81	13.11	13.15	13.22	520.09	536.20	539.15	538.05
Food and kindred products	11.80	12.11	12.18	12.18	490.88	503.78	507.91	509.12
Tobacco products	20.59	20.63	20.82	20.68	809.19	821.07	830.72	812.72
Textile mill products	10.36	10.69	10.77	10.73	418.54	437.22	441.57	434.57
Apparel and other textile products	8.46	8.81	8.88	8.82	312.91	333.02	339.22	329.87
Paper and allied products	15.64	15.91	15.98	16.07	674.08	688.90	695.13	689.40
Printing and publishing	13.44	13.74	13.73	13.84	512.06	522.12	518.99	524.54
Chemicals and allied products	17.19	17.39	17.33	17.48	734.01	744.29	743.46	744.65
Petroleum and coal products	20.83	21.05	21.09	21.20	933.18	896.73	896.33	915.84
Rubber and misc. plastics products	11.91	12.21	12.26	12.38	489.50	511.60	513.69	510.06
Leather and leather products	9.14	9.59	9.57	9.63	337.27	367.30	367.49	363.05
Service-producing	12.14	12.70	12.60	12.61	403.05	417.83	414.54	417.39
Transportation and public utilities	15.27	15.55	15.53	15.68	608.22	603.34	605.67	609.95
Wholesale trade	14.04	14.53	14.43	14.54	537.73	560.86	554.11	558.34
Retail trade	8.69	9.03	9.02	9.02	258.96	282.77	285.19	288.80
Finance, insurance, and real estate	13.94	14.72	14.51	14.54	503.23	535.81	520.91	523.44
Services	12.68	13.34	13.22	13.21	417.17	436.22	430.97	433.29

[1] See footnote 1, table B-2.

p = preliminary.

ESTABLISHMENT DATA

Table B-4. Average hourly earnings of production or nonsupervisory workers[1] on private nonfarm payrolls by industry, seasonally adjusted

Industry	July 1998	Mar. 1999	Apr. 1999	May 1999	June 1999p	July 1999p	Percent change from: June 1999-July 1999
Total private:							
Current dollars	$12.80	$13.11	$13.14	$13.18	$13.23	$13.29	0.5
Constant (1982) dollars[2]	7.76	7.86	7.83	7.85	7.88	N.A.	(3)
Goods-producing	14.33	14.61	14.67	14.75	14.84	14.93	.6
Mining	16.87	17.00	16.87	17.05	16.98	17.24	1.5
Construction	16.63	16.92	16.97	17.08	17.15	17.22	.4
Manufacturing	13.46	13.71	13.79	13.85	13.94	14.04	.7
Excluding overtime[4]	12.75	13.00	13.09	13.13	13.20	13.27	.5
Service-producing	12.30	12.63	12.65	12.68	12.72	12.77	.4
Transportation and public utilities	15.31	15.53	15.60	15.65	15.62	15.72	.6
Wholesale trade	14.09	14.42	14.44	14.48	14.55	14.60	.3
Retail trade	8.76	8.98	9.03	9.04	9.06	9.10	.4
Finance, insurance, and real estate	14.08	14.51	14.58	14.60	14.63	14.69	.4
Services	12.89	13.27	13.28	13.33	13.37	13.43	.4

[1] See footnote 1, table B-2.
[2] The Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) is used to deflate this series.
[3] Change was .4 percent from May 1999 to June 1999, the latest month available.
[4] Derived by assuming that overtime hours are paid at the rate of time and one-half.
N.A. = not available.
p = preliminary.

Table B-5. Indexes of aggregate weekly hours of production or nonsupervisory workers[1] on private nonfarm payrolls by industry

(1982=100)

Industry	Not seasonally adjusted				Seasonally adjusted					
	July 1998	May 1999	June 1999p	July 1999p	July 1998	Mar. 1999	Apr. 1999	May 1999	June 1999p	July 1999p
Total private	147.6	148.2	149.9	150.6	145.2	146.8	147.0	147.2	147.7	148.2
Goods-producing	115.8	114.9	116.9	116.0	114.8	114.2	114.2	114.4	114.6	114.9
Mining	57.1	50.1	50.4	50.7	56.5	50.5	50.4	50.1	49.6	50.3
Construction	180.8	174.3	182.7	187.6	165.1	169.1	169.2	170.0	172.8	171.1
Manufacturing	105.5	106.3	107.0	104.7	107.8	106.5	106.5	106.5	106.2	107.0
Durable goods	107.9	110.9	111.6	108.3	110.9	110.4	110.4	110.5	110.4	111.5
Lumber and wood products	147.7	147.6	150.5	148.9	145.5	147.9	147.5	147.3	146.7	148.4
Furniture and fixtures	132.6	134.1	136.3	134.4	135.3	135.2	135.6	135.9	136.2	137.5
Stone, clay, and glass products	117.6	119.2	120.7	119.4	115.7	115.4	116.2	117.0	116.8	117.3
Primary metal industries	88.8	90.4	90.3	87.6	91.7	90.0	89.9	90.3	89.5	90.6
Blast furnaces and basic steel products	71.0	69.5	69.5	68.4	71.7	68.2	69.1	69.2	68.8	69.3
Fabricated metal products	114.2	116.9	117.9	114.6	118.4	117.0	116.2	116.9	116.8	118.7
Industrial machinery and equipment	107.6	105.3	105.0	102.6	110.1	104.4	104.1	104.5	104.1	105.3
Electronic and other electrical equipment	106.3	105.5	106.1	103.5	109.4	105.1	105.6	106.2	105.8	106.8
Transportation equipment	106.7	125.5	126.3	118.2	114.5	125.3	125.5	123.4	125.0	127.2
Motor vehicles and equipment	119.5	167.2	169.1	154.7	132.9	162.7	164.8	162.4	166.5	172.4
Instruments and related products	75.2	75.2	75.4	73.9	76.6	74.7	75.8	75.6	75.2	75.2
Miscellaneous manufacturing	100.6	101.3	101.3	97.7	103.5	100.0	100.3	101.4	100.9	100.4
Nondurable goods	102.2	100.1	100.8	99.7	103.4	101.2	101.2	101.1	100.5	100.9
Food and kindred products	118.9	115.2	117.1	119.3	117.9	118.8	118.9	118.5	118.1	118.4
Tobacco products	53.2	50.0	50.6	48.7	61.6	55.7	55.4	55.3	55.9	55.5
Textile mill products	84.1	81.0	81.1	79.1	86.0	81.1	81.6	81.1	79.6	81.1
Apparel and other textile products	65.2	61.5	61.7	58.8	67.4	61.5	61.4	61.4	60.5	60.4
Paper and allied products	108.0	105.3	106.6	105.0	109.0	107.0	106.7	106.3	105.8	105.8
Printing and publishing	124.3	120.9	120.9	120.9	125.4	121.9	121.9	122.3	121.9	121.8
Chemicals and allied products	102.6	101.8	102.3	101.0	103.4	101.8	102.4	102.3	101.7	101.9
Petroleum and coal products	81.1	73.8	74.6	76.3	77.7	76.4	74.5	73.9	72.9	73.4
Rubber and misc. plastics products	143.1	149.6	150.2	145.5	147.8	148.8	148.5	149.5	148.6	150.5
Leather and leather products	33.8	32.7	32.8	29.5	35.5	32.4	32.8	32.4	32.0	31.1
Service-producing	161.8	163.2	164.7	166.1	158.9	161.5	161.6	161.9	162.6	163.1
Transportation and public utilities	132.6	133.3	134.7	133.9	132.3	133.8	133.6	133.0	133.7	133.3
Wholesale trade	129.9	132.7	132.9	133.1	129.0	131.3	131.6	131.5	131.8	131.9
Retail trade	144.9	143.4	146.4	148.5	140.5	141.9	142.6	143.3	143.6	144.2
Finance, insurance, and real estate	138.5	140.4	140.4	141.8	136.9	139.3	139.1	138.8	139.4	140.3
Services	198.6	201.6	202.9	204.9	195.0	198.8	198.9	199.3	200.6	201.1

[1] See footnote 1, table B-2.

p = preliminary.

Table B-6. Diffusion indexes of employment change, seasonally adjusted

(Percent)

Time span	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Private nonfarm payrolls, 356 industries[1]											
Over 1-month span:												
1995	63.8	58.0	54.6	56.5	47.5	54.8	55.6	59.1	57.9	56.9	55.2	57.7
1996	49.6	64.9	59.4	55.1	61.9	60.6	57.0	62.5	57.3	63.5	59.7	61.2
1997	56.2	61.0	61.9	62.8	58.8	56.3	60.7	61.0	59.4	65.4	63.6	62.1
1998	63.8	57.9	58.8	60.5	55.9	57.9	58.0	55.8	54.6	52.9	59.1	58.6
1999	54.4	58.3	52.1	58.8	51.5	P55.8	P59.0					
Over 3-month span:												
1995	63.8	62.9	58.0	53.5	53.9	52.7	59.3	61.0	59.4	58.6	57.3	55.3
1996	62.6	62.5	63.3	63.1	63.1	64.3	64.3	62.2	64.6	64.2	66.2	63.2
1997	63.8	63.6	67.7	67.3	62.6	61.7	61.4	66.2	67.3	69.9	70.8	71.2
1998	66.7	66.2	64.5	63.9	61.4	58.7	60.0	58.4	57.6	57.6	59.0	60.4
1999	60.7	55.9	59.6	54.6	P55.5	P57.0						
Over 6-month span:												
1995	66.7	59.7	58.6	56.5	59.0	60.0	57.7	61.0	60.5	59.3	61.7	63.2
1996	62.6	65.2	64.5	65.2	64.7	64.6	67.0	65.4	65.9	66.7	66.9	66.7
1997	67.4	68.3	65.6	67.0	65.6	64.9	66.3	68.4	69.7	71.3	71.3	71.9
1998	70.6	66.9	65.9	62.4	62.6	61.1	58.0	59.8	60.0	60.8	60.8	58.0
1999	61.1	58.8	P56.3	P57.7								
Over 12-month span:												
1995	63.6	62.4	62.6	63.3	61.7	61.9	58.7	62.2	62.2	61.5	63.5	65.4
1996	64.5	66.7	64.5	65.6	68.5	67.3	67.7	66.4	68.0	69.9	68.7	66.9
1997	69.0	67.3	68.3	69.7	69.5	70.1	70.1	70.4	70.5	69.7	69.8	71.3
1998	70.4	68.3	67.1	64.0	62.1	61.7	61.8	63.8	59.8	59.0	59.3	P58.4
1999	P59.8											
	Manufacturing payrolls, 139 industries[1]											
Over 1-month span:												
1995	57.2	50.4	47.1	52.9	41.4	45.3	45.0	51.1	48.6	51.1	45.3	48.2
1996	42.4	55.4	48.8	41.0	55.8	51.4	47.1	56.5	48.9	55.0	50.7	54.0
1997	50.0	52.9	53.6	56.1	52.2	53.2	51.1	55.4	53.6	62.2	61.2	55.4
1998	58.6	51.8	50.4	50.4	40.6	46.8	40.3	45.3	42.1	36.3	39.9	45.0
1999	40.3	42.4	39.6	44.6	36.3	P42.8	P55.4					
Over 3-month span:												
1995	55.4	51.4	44.2	41.7	43.5	37.4	42.1	43.9	48.2	46.8	44.6	41.4
1996	46.8	46.0	43.5	46.0	48.2	51.1	51.8	49.6	53.2	52.5	55.0	50.7
1997	51.8	51.4	57.6	56.8	54.3	51.8	53.6	55.4	59.7	68.3	65.8	64.4
1998	59.4	57.9	51.8	44.2	41.7	34.9	37.4	37.1	38.1	34.2	35.6	35.3
1999	37.4	31.7	37.1	30.2	P32.7	P41.7						
Over 6-month span:												
1995	55.4	45.7	43.2	38.1	41.7	42.8	41.0	42.1	43.5	43.2	44.2	45.0
1996	41.4	46.0	45.7	47.1	46.0	48.6	52.9	50.4	51.8	51.4	52.5	51.8
1997	54.7	54.0	51.4	54.3	52.5	52.2	55.4	61.2	61.5	64.7	66.2	65.1
1998	59.7	49.3	48.2	36.7	36.7	36.7	28.4	31.3	33.5	35.3	32.7	28.1
1999	33.1	29.1	P27.3	P33.5								
Over 12-month span:												
1995	48.0	44.2	46.0	47.8	41.0	41.7	38.5	38.8	36.3	38.5	39.9	44.6
1996	43.5	47.5	45.3	45.3	50.4	49.6	50.4	48.6	51.1	55.0	54.3	50.7
1997	54.7	52.5	54.0	54.0	55.4	56.8	57.2	57.9	58.3	56.5	55.4	57.2
1998	54.0	49.3	48.0	40.6	35.6	33.8	30.9	32.0	26.6	26.6	25.5	P26.3
1999	P30.9											

[1] Based on seasonally adjusted data for 1-, 3-, and 6-month spans and unadjusted data for the 12-month span. Data are centered within the span.

P = preliminary.

NOTE: Figures are the percent of industries with employment increasing plus one-half of the industries with unchanged employment, where 50 percent indicates an equal balance between industries with increasing and decreasing employment.

CNPE

Job Quality Index: Second Quarter 1999

PRESS RELEASE
8:00 AM August 6, 1999

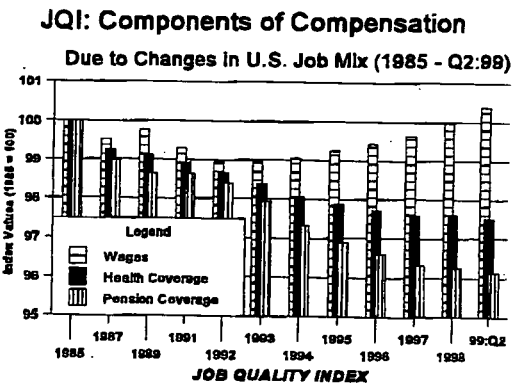
CONTACT: JUSTIN LEACH
202/682-1800

U.S. Job Quality Improves As High Tech Service Jobs Soar

Compensation Index Reaches New Highs As Growth In High-Wage Service Jobs Offset Losses in Manufacturing, Mining

WASHINGTON, D.C.– Last week's report of a 1.1% quarterly increase in the Employment Cost Index (ECI), which rattled financial markets, is not the only harbinger of above-trend wage and salary gains. The Center for National Policy's ***Job Quality Index (JQI)*** for the second quarter indicates that continued rapid growth in high-wage service sector employment is more than offsetting large job losses in manufacturing and mining, resulting in a significant improvement in average U.S. job quality. Today's monthly Employment report is being closely watched for signs that employment growth and wage gains are in line with productivity.

The *JQI*, which measures the impact of shifts in employment by industry and occupation on compensation, spurted to a new high during the second quarter following two quarter's of stagnation that resulted from the Asian financial crisis. The *JQI*'s wage component reached a record 100.4 in June, while health and pension benefit coverage has stabilized over the past year after 15 years of steady decline.



The loss of 132,000 manufacturing and mining jobs during 1999's second quarter was more than offset by 165,000 new jobs in the relatively high-paying financial, computer and data processing, health care, motion picture, engineering and management consulting industries. Nearly two in five new U.S. jobs created this year are located in those five high-wage service industries.

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CNP's *Job Quality Index (JQI)* tracks the average quality of U.S. jobs as the distribution of employment by occupation and industry changes from month to month. The Index, developed by Harvard economist and CNP Fellow James Medoff, shows how the nation's changing job mix impacts overall compensation and its primary components (wages, health and pension benefit coverage) since 1985.

"Years ago the loss of 500,000 manufacturing jobs over five quarters would have torpedoed U.S. job quality, since most new service jobs paid lower wages and benefits," Medoff said. "But that is no longer the case. Over the past two years in particular the pattern of job creation has shifted strongly toward well-compensated occupations in business and professional services.

"Unless the recent higher growth rates in labor productivity at least continue, the *JQI* and the ECI, taken together, are predicting an increase in unit labor costs that are likely to put upward pressure on prices," he added.

The ECI May Understate Overall Gains in Compensation

The very positive shift in the distribution of job and compensation gains among service industries since 1996 may not be fully reflected in the ECI. Because the ECI holds the "basket," or distribution, of jobs in the economy constant between Census surveys, it may be underestimating overall improvements in national compensation by not considering the rapidly improving mix of service-producing jobs since 1990. This is analogous to the issue surrounding the Consumer Price Index, which was recently adjusted to account for changes in the composition of consumer purchases.

This positive shift in the pattern of service sector job growth gained steam throughout 1998 and has boosted average job quality significantly since 1996, despite the loss of nearly 500,000 manufacturing jobs since March, 1998. Last year roughly 1.5 million of the 2.9 million new U.S. jobs were created in relatively high-paying service-producing sectors, including public sector jobs (up 355,000 or 1.8%).

High Wage Industries Are Growing Faster

During the second quarter, industries with some of the highest average levels of compensation added a disproportionate number of new jobs, while job growth in several low-wage service industries slowed. Computer services added 45,000 jobs, about 8% of the nation's total job growth of 584,000 during the second quarter. Nonsupervisory workers in computer and data processing services earn an average weekly wage of $870 – about double the $454 private sector average.

Other well-compensated industries with substantial job gains included management and public relations (up 30,000), construction (up 32,000), financial services (up 27,000), health care (up 28,000), education (up 31,000), motion pictures (up 26,000), engineering (up 9,000) and wholesale trade (up 35,000). While overall job quality was dragged down by a 125,000 surge in retail eating and drinking jobs, this was offset by a slowdown in temporary help jobs, which increased 31,000 compared to a 110,000 first quarter gain.

Large job losses in manufacturing and mining depress average U.S. job quality because workers in those sectors earn relatively high wages and generous fringe benefit packages. Average weekly wages for nonsupervisory workers was $570 in manufacturing and $730 in mining last month, considerably above the $450 average for all private sector workers, according to BLS data. Benefits are also higher in goods-producing industries, due in part to above-average levels of unionization. Manufacturing may be bouncing back, though, since the National Association of Purchasing Management's index, a leading indicator of manufacturing activity, rose in July for the sixth consecutive month.

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PREPARED STATEMENT OF REPRESENTATIVE PAUL RYAN

Mr. Chairman,

Today's presentation by the Bureau of Labor Statistics is expected to illustrate that July's general unemployment rate remains low, consistent with the strong employment growth experienced overall in the second-quarter. Also worthy of note are the recently released employment cost index and related productivity numbers. Over the last twelve months, employment costs have increased about 3.2 percent, which would seem to signal the specter of inflation. However, productivity has increased over this same time frame in manufacturing by 5.3 percent, business by 3.2 percent and non-farm business by 2.9 percent, keeping pace with rising employment costs, but keeping the real rate of compensation low.

I find these numbers interesting because they confirm an era of notable technological innovation and advance - not one of increasing inflation. Conducting monetary policy by placing an emphasis on employment statistics is obsolete. The economic theory behind the Humphrey-Hawkins (Full Employment and Balanced Budget) Act - currently the explicit rule under which the Fed is supposed to toil - is no longer relevant in today's economic climate of sustained growth and technological progress.

Full employment is easy to achieve, but full production is not. Recently, the United States has been fortunate to have both, although I would argue that they are not inevitably related. America cannot sustain high levels of production without full employment, but it can certainly have full employment without efficient, full production. I would undoubtedly argue that full production is the fuel behind economic growth and that full employment is the by-product.

Watching employment rates feeds into the notion of a Phillips' Curve, the inverse relationship between inflation and unemployment. Today, in general, even the Federal Reserve doesn't pay much heed to this relationship. Both inflation and employment have fallen together for several years now.

Today, the American labor force is producing more goods and services, in less time and at lower prices in any time in recent history due to technological innovation. The Fed has adjusted accordingly, and has done a remarkable job at maintaining economic growth by throwing

out-dated ideas out the window. Congress should codify the Fed's formula for price stability - specifically, inflation targets.

I look forward to the presentation on US labor statistics.

Thank you, Mr. Chairman.

AUG 30 1999

Honorable David Minge
House of Representatives
Washington, DC 20515

Dear Congressman Minge:

At the Joint Economic Committee hearings on August 6 you requested information on the distribution of hourly earnings cross-tabulated by certain demographic characteristics and by industry. In addition, you had questions related to recent improvements to the Consumer Price Index (CPI) and to price increases for older Americans.

In response to your question on the distribution of earnings, I have enclosed copies of three unpublished tabulations from our Current Population Survey (CPS) that present hourly earnings distributions by age, sex, race, and Hispanic origin; marital status; and industry. I also have included an unpublished CPS hourly earnings table that focuses on low-wage workers and contains some detail on their family characteristics. The data are all 1998 annual averages. Note that they pertain only to workers who are reported as being paid at an hourly rate; overall, such workers account for about three-fifths of wage and salary workers.

Regarding your CPI questions, I have enclosed a reprint of a Monthly Labor Review article that presents our efforts to estimate consumer price changes back to 1978 based on current BLS methods. The article provides evidence on the quantitative impact of recent CPI methodological improvements. I also have enclosed a paper that presents and explains our experimental price index for older Americans.

I hope this information is useful to you. Please let me know if you have any additional questions on these data, or have your staff contact Philip Rones, Assistant Commissioner for Current

AUG 30 1999

Employment Analysis, on 202--606-6378, or John Greenlees, Assistant Commissioner for Consumer Prices and Price Indexes, on 202--606-6950.

Sincerely yours,

KATHARINE G. ABRAHAM
Commissioner

Enclosures

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages

Total, both sexes

Numbers in thousands

Age	Total employed	Under $3.00	$3.00 to $3.99	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 or more	Under prevailing minimum wage	At prevailing minimum wage
Total, 16 years and over	71,440	707	211	490	8,671	8,552	7,769	7,193	5,603	32,243	2,834	1,593
Under 25 years	16,361	317	96	250	4,619	3,548	2,453	1,804	1,034	2,241	1,377	883
16 to 19 years	6,482	120	55	151	2,922	1,616	777	427	143	269	790	558
20 to 24 years	9,879	196	40	99	1,697	1,931	1,676	1,377	891	1,971	587	325
25 years and over	55,080	391	116	240	4,052	5,004	5,316	5,389	4,569	30,002	1,456	710
25 to 34 years	17,298	190	58	76	1,394	1,660	1,911	1,913	1,744	8,353	532	245
25 to 29 years	8,717	128	45	50	732	887	1,042	1,050	948	3,837	337	130
30 to 34 years	8,581	62	14	27	662	772	868	863	796	4,516	195	115
35 to 44 years	18,070	102	28	70	1,144	1,475	1,505	1,644	1,415	10,686	416	191
35 to 39 years	9,196	60	16	41	595	760	791	873	735	5,325	230	98
40 to 44 years	8,874	42	11	29	549	715	715	771	681	5,361	186	93
45 to 54 years	12,445	65	11	38	735	1,023	1,061	1,108	917	7,486	253	138
45 to 49 years	7,103	39	6	25	432	585	581	605	531	4,298	150	73
50 to 54 years	5,342	26	5	14	303	438	480	503	387	3,187	103	65
55 to 64 years	5,660	27	9	19	454	562	634	535	387	3,036	143	70
55 to 59 years	3,605	13	6	12	246	322	381	339	262	2,025	78	40
60 to 64 years	2,055	14	3	7	207	239	253	196	125	1,010	64	31
65 years and over	1,606	7	10	37	325	284	206	189	106	443	113	67
65 to 69 years	917	4	7	23	178	157	106	121	59	262	64	35
70 years and over	689	3	2	14	147	127	100	68	46	181	49	31
20 years and over	64,958	587	156	340	5,749	6,935	6,992	6,766	5,460	31,974	2,044	1,035
25 to 54 years	47,813	357	97	185	3,273	4,158	4,477	4,665	4,076	26,524	1,200	573
55 years and over	7,266	33	18	55	779	846	840	724	492	3,478	256	137

Source: Unpublished tabulations from the Current Population Survey, Bureau of Labor Statistics

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages-Continued

Total, both sexes

Age	Median	Standard error	Mean	Standard error
Total, 16 years and over....	$9.10	$0.03	$10.82	$0.02
Under 25 years.....	6.58	.05	7.25	.02
16 to 19 years.....	5.88	.03	6.20	.02
20 to 24 years.....	7.24	.06	7.94	.03
25 years and over.....	10.13	.03	11.88	.03
25 to 34 years.....	9.65	.09	10.80	.04
25 to 29 years.....	9.15	.07	10.24	.05
30 to 34 years.....	10.00	.07	11.36	.06
35 to 44 years.....	10.86	.08	12.48	.05
35 to 39 years.....	10.62	.17	12.24	.07
40 to 44 years.....	11.07	.12	12.73	.07
45 to 54 years.....	10.96	.10	12.75	.06
45 to 49 years.....	11.05	.14	12.83	.08
50 to 54 years.....	10.84	.16	12.64	.09
55 to 64 years.....	10.08	.10	12.03	.09
55 to 59 years.....	10.33	.23	12.41	.11
60 to 64 years.....	9.67	.38	11.37	.14
65 years and over.....	7.40	.27	9.61	.19
65 to 69 years.....	7.69	.31	9.91	.26
70 years and over.....	7.17	.15	9.21	.27
20 years and over.....	9.75	.04	11.28	.02
25 to 54 years.....	10.20	.04	11.94	.03
55 years and over.....	9.45	.23	11.50	.08

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages

Men

Age	Total employed	Under $3.00	$3.00 to $3.99	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 or more	Under prevailing minimum wage	At prevailing minimum wage
Total, 16 years and over	35,761	188	61	202	3,387	3,471	3,342	3,284	2,724	19,101	1,039	628
Under 25 years	8,411	70	34	109	2,088	1,705	1,290	1,049	614	1,451	536	400
16 to 19 years	3,219	30	22	63	1,350	801	426	264	88	175	328	257
20 to 24 years	5,192	40	12	47	739	904	864	784	526	1,275	208	142
25 years and over	27,349	118	27	93	1,299	1,766	2,052	2,235	2,109	17,650	503	228
25 to 34 years	9,114	59	20	25	486	686	910	883	891	5,154	182	99
25 to 29 years	4,644	38	17	17	277	392	502	486	496	2,419	119	61
30 to 34 years	4,469	21	3	7	209	294	408	397	395	2,735	63	38
35 to 44 years	8,943	29	3	23	323	450	524	675	647	6,270	140	48
35 to 39 years	4,634	16	0	18	168	251	282	363	346	3,189	71	26
40 to 44 years	4,309	12	2	5	154	199	242	313	301	3,081	69	22
45 to 54 years	5,839	25	0	12	204	325	314	385	361	4,212	84	34
45 to 49 years	3,369	17	0	9	119	194	181	219	222	2,409	49	21
50 to 54 years	2,470	8	-	4	85	130	133	167	139	1,803	35	14
55 to 64 years	2,688	4	1	5	148	181	208	210	159	1,773	37	19
55 to 59 years	1,702	2	1	4	68	86	120	137	104	1,181	20	7
60 to 64 years	986	3	1	0	80	95	88	73	55	592	17	12
65 years and over	765	1	3	28	138	125	96	82	52	241	60	28
65 to 69 years	441	-	1	19	74	69	47	55	28	148	31	17
70 years and over	324	1	1	9	64	56	49	27	24	93	29	12
20 years and over	32,541	158	40	139	2,038	2,670	2,916	3,020	2,636	18,925	711	371
25 to 54 years	23,896	113	23	60	1,013	1,460	1,748	1,944	1,899	15,636	406	181
55 years and over	3,453	5	4	32	286	305	304	292	211	2,014	97	47

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages-Continued

Men

Age	Median	Standard error	Mean	Standard error
Total, 16 years and over	$10.06	$0.04	$11.84	$0.03
Under 25 years	6.91	.05	7.63	.03
16 to 19 years	5.98	.04	6.40	.03
20 to 24 years	7.78	.06	8.39	.05
25 years and over	11.72	.10	13.14	.04
25 to 34 years	10.22	.10	11.60	.06
25 to 29 years	9.92	.08	10.94	.08
30 to 34 years	10.95	.14	12.30	.09
35 to 44 years	12.48	.22	13.82	.07
35 to 39 years	12.17	.15	13.49	.09
40 to 44 years	12.87	.18	14.18	.11
45 to 54 years	13.04	.19	14.44	.09
45 to 49 years	12.89	.28	14.38	.12
50 to 54 years	13.21	.37	14.51	.14
55 to 64 years	12.22	.35	13.95	.15
55 to 59 years	12.90	.32	14.48	.18
60 to 64 years	11.15	.57	13.02	.23
65 years and over	7.74	.34	10.62	.34
65 to 69 years	7.94	.24	11.24	.48
70 years and over	7.20	.21	9.77	.47
20 years and over	10.69	.09	12.38	.04
25 to 54 years	11.78	.08	13.13	.04
55 years and over	10.87	.27	13.21	.14

- Data not available.

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages

Women

Age	Total employed	Under $3.00	$3.00 to $3.99	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 or more	Under prevailing minimum wage	At prevailing minimum wage
Total, 16 years and over	35,680	519	150	288	5,284	5,081	4,427	3,909	2,879	13,143	1,794	965
Under 25 years	7,949	247	61	140	2,531	1,842	1,163	755	420	790	841	483
16 to 19 years	3,263	91	34	88	1,573	816	351	162	55	94	462	301
20 to 24 years	4,686	156	28	52	958	1,027	812	593	365	696	379	183
25 years and over	27,730	273	88	148	2,753	3,238	3,264	3,154	2,459	12,353	953	482
25 to 34 years	8,185	131	38	52	908	973	1,001	1,030	853	3,199	349	146
25 to 29 years	4,073	90	28	32	454	496	540	563	451	1,418	218	69
30 to 34 years	4,112	41	10	19	453	478	461	467	402	1,781	132	77
35 to 44 years	9,127	73	25	47	821	1,026	981	969	768	4,416	276	143
35 to 39 years	4,562	43	16	23	427	509	509	510	389	2,136	159	72
40 to 44 years	4,564	30	9	24	394	516	472	458	380	2,280	117	71
45 to 54 years	6,606	40	11	26	531	699	747	723	556	3,274	169	103
45 to 49 years	3,733	23	6	16	313	391	400	387	309	1,889	101	52
50 to 54 years	2,872	17	5	10	218	307	347	336	247	1,385	68	51
55 to 64 years	2,972	22	7	14	305	381	426	325	228	1,262	106	51
55 to 59 years	1,902	11	5	7	178	237	261	202	158	844	59	33
60 to 64 years	1,069	11	2	7	128	144	166	123	70	418	47	18
65 years and over	841	6	7	9	187	159	110	107	54	202	53	39
65 to 69 years	476	4	6	4	104	88	58	66	31	115	33	19
70 years and over	365	1	1	5	83	72	52	41	23	88	20	20
20 years and over	32,417	429	116	200	3,711	4,265	4,076	3,747	2,824	13,049	1,332	664
25 to 54 years	23,917	245	74	125	2,260	2,698	2,729	2,721	2,178	10,888	794	392
55 years and over	3,813	28	14	23	493	541	536	433	282	1,465	159	90

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages-Continued

Women

Age	Median	Standard error	Mean	Standard error
Total, 16 years and over	$8.23	$0.04	$9.80	$0.02
Under 25 years	6.24	.04	6.85	.02
16 to 19 years	5.78	.03	6.00	.02
20 to 24 years	6.93	.05	7.43	.04
25 years and over	9.13	.04	10.64	.03
25 to 34 years	8.80	.07	9.90	.05
25 to 29 years	8.45	.13	9.44	.06
30 to 34 years	9.07	.10	10.34	.07
35 to 44 years	9.66	.13	11.17	.06
35 to 39 years	9.42	.20	10.97	.08
40 to 44 years	9.82	.09	11.36	.08
45 to 54 years	9.78	.09	11.25	.06
45 to 49 years	9.86	.10	11.42	.09
50 to 54 years	9.58	.24	11.03	.10
55 to 64 years	8.85	.15	10.30	.08
55 to 59 years	9.09	.19	10.56	.10
60 to 64 years	8.28	.28	9.85	.13
65 years and over	7.21	.17	8.69	.16
65 to 69 years	7.31	.35	8.68	.19
70 years and over	7.13	.19	8.71	.27
20 years and over	8.75	.05	10.18	.03
25 to 54 years	9.22	.06	10.76	.03
55 years and over	8.31	.16	9.95	.07

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages

White, both sexes

Age	Total employed	Under $3.00	$3.00 to $3.99	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 or more	Under prevailing minimum wage	At prevailing minimum wage
Total, 16 years and over	58,512	639	190	368	6,960	6,790	6,154	5,786	4,504	27,120	2,290	1,269
Under 25 years	13,786	297	89	192	3,845	2,969	2,045	1,537	867	1,944	1,169	717
16 to 19 years	5,598	116	51	120	2,500	1,398	680	371	118	244	673	476
20 to 24 years	8,188	181	38	73	1,345	1,570	1,365	1,167	749	1,699	495	242
25 years and over	44,726	341	101	176	3,115	3,822	4,109	4,249	3,637	25,176	1,121	551
25 to 34 years	13,744	171	54	54	1,091	1,231	1,412	1,473	1,337	6,921	435	187
25 to 29 years	6,951	116	43	35	579	663	790	819	729	3,177	289	101
30 to 34 years	6,793	55	11	18	512	568	622	654	607	3,744	146	87
35 to 44 years	14,577	85	24	48	834	1,111	1,151	1,261	1,116	8,947	301	141
35 to 39 years	7,427	48	15	29	433	578	612	669	570	4,472	170	72
40 to 44 years	7,150	37	9	19	400	533	539	592	546	4,475	130	69
45 to 54 years	10,247	56	10	26	555	787	837	907	761	6,309	184	105
45 to 49 years	5,797	36	6	17	319	445	459	489	436	3,591	113	52
50 to 54 years	4,450	20	4	9	236	342	378	418	325	2,718	70	52
55 to 64 years	4,774	22	7	17	361	455	527	450	326	2,608	112	62
55 to 59 years	3,046	10	5	12	202	258	316	276	224	1,743	60	36
60 to 64 years	1,728	12	2	6	159	197	211	173	103	865	52	26
65 years and over	1,385	7	6	31	274	237	183	158	97	391	90	57
65 to 69 years	783	4	5	21	146	132	97	95	56	228	54	30
70 years and over	602	3	1	10	128	106	87	63	42	163	36	27
20 years and over	52,914	523	139	249	4,460	5,392	5,475	5,416	4,386	26,876	1,617	793
25 to 54 years	38,568	312	88	128	2,480	3,129	3,400	3,641	3,213	22,177	919	433
55 years and over	6,158	29	13	48	635	692	710	608	423	2,999	202	118

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages-Continued

White, both sexes

Age	Median	Standard error	Mean	Standard error
Total, 16 years and over	$9.22	$0.05	$10.97	$0.03
Under 25 years	6.60	.05	7.27	.02
16 to 19 years	5.88	.03	6.21	.02
20 to 24 years	7.34	.09	8.00	.03
25 years and over	10.30	.07	12.11	.03
25 to 34 years	9.83	.05	10.97	.05
25 to 29 years	9.31	.13	10.34	.06
30 to 34 years	10.18	.08	11.62	.07
35 to 44 years	11.13	.10	12.79	.05
35 to 39 years	10.93	.13	12.52	.08
40 to 44 years	11.47	.26	13.07	.08
45 to 54 years	11.15	.13	12.97	.07
45 to 49 years	11.25	.23	13.06	.09
50 to 54 years	11.04	.16	12.86	.10
55 to 64 years	10.16	.11	12.20	.10
55 to 59 years	10.53	.29	12.59	.12
60 to 64 years	9.78	.27	11.52	.16
65 years and over	7.51	.28	9.62	.20
65 to 69 years	7.72	.31	9.84	.26
70 years and over	7.24	.30	9.34	.30
20 years and over	9.86	.03	11.48	.03
25 to 54 years	10.53	.09	12.19	.03
55 years and over	9.63	.21	11.62	.09

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages

White men

Age	Total employed	Under $3.00	$3.00 to $3.99	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 or more	Under prevailing minimum wage	At prevailing minimum wage
Total, 16 years and over	29,700	167	54	147	2,766	2,788	2,694	2,601	2,173	16,310	827	498
Under 25 years	7,206	67	33	84	1,743	1,444	1,114	897	527	1,297	456	319
16 to 19 years	2,810	28	20	51	1,151	695	386	237	77	165	284	213
20 to 24 years	4,396	38	12	33	592	750	728	660	451	1,132	172	105
25 years and over	22,494	101	22	63	1,023	1,344	1,580	1,704	1,645	15,013	371	180
25 to 34 years	7,424	53	18	19	402	532	686	678	683	4,352	153	76
25 to 29 years	3,806	36	17	13	229	308	389	381	390	2,044	106	46
30 to 34 years	3,618	17	2	6	174	225	297	297	293	2,308	47	31
35 to 44 years	7,310	25	1	10	226	333	404	497	495	5,319	88	34
35 to 39 years	3,780	14	0	9	117	188	219	272	261	2,700	47	19
40 to 44 years	3,530	11	1	1	110	145	185	225	235	2,619	41	15
45 to 54 years	4,847	20	0	5	163	241	236	294	294	3,595	54	29
45 to 49 years	2,762	15	0	3	92	144	130	166	176	2,035	34	16
50 to 54 years	2,085	5	-	2	70	97	106	128	118	1,560	20	13
55 to 64 years	2,270	2	0	4	122	134	165	173	127	1,542	26	18
55 to 59 years	1,446	1	0	4	59	59	94	108	85	1,035	15	7
60 to 64 years	825	1	-	-	62	75	71	64	43	508	11	12
65 years and over	642	1	2	25	110	104	89	63	45	204	50	22
65 to 69 years	361	-	1	18	53	57	46	37	25	123	28	12
70 years and over	282	1	1	7	57	47	43	26	20	81	22	10
20 years and over	26,890	139	34	96	1,616	2,094	2,308	2,363	2,096	16,144	543	285
25 to 54 years	19,581	97	19	33	792	1,106	1,326	1,469	1,472	13,267	295	140
55 years and over	2,913	3	2	29	231	238	254	235	173	1,746	76	40

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages-Continued

White men

Age	Median	Standard error	Mean	Standard error
Total, 16 years and over....	$10.18	$0.05	$12.04	$0.04
Under 25 years.....	6.95	.05	7.68	.04
16 to 19 years.....	6.00	.04	6.44	.03
20 to 24 years.....	7.83	.07	8.48	.05
25 years and over.....	11.96	.06	13.44	.05
25 to 34 years.....	10.56	.19	11.78	.07
25 to 29 years.....	10.02	.09	11.02	.09
30 to 34 years.....	11.22	.24	12.57	.10
35 to 44 years.....	12.93	.14	14.20	.08
35 to 39 years.....	12.52	.31	13.79	.11
40 to 44 years.....	13.32	.35	14.63	.12
45 to 54 years.....	13.61	.32	14.80	.10
45 to 49 years.....	13.50	.49	14.77	.14
50 to 54 years.....	13.74	.39	14.84	.16
55 to 64 years.....	12.64	.41	14.31	.16
55 to 59 years.....	13.18	.42	14.85	.20
60 to 64 years.....	11.45	.96	13.35	.27
65 years and over.....	7.71	.37	10.62	.36
65 to 69 years.....	7.92	.30	11.17	.50
70 years and over.....	7.24	.42	9.91	.53
20 years and over.....	10.95	.07	12.63	.04
25 to 54 years.....	12.01	.06	13.43	.05
55 years and over.....	11.16	.38	13.49	.15

- Data not available.

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages

White women

Age	Total employed	Under $3.00	$3.00 to $3.99	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 or more	Under prevailing minimum wage	At prevailing minimum wage
Total, 16 years and over	28,812	472	135	222	4,194	4,002	3,460	3,185	2,331	10,811	1,463	770
Under 25 years	6,580	231	56	108	2,102	1,524	930	640	340	647	713	399
16 to 19 years	2,788	88	30	69	1,350	704	293	133	42	79	390	262
20 to 24 years	3,792	143	26	39	752	821	637	507	298	568	324	137
25 years and over	22,232	241	79	114	2,092	2,477	2,529	2,545	1,991	10,163	750	371
25 to 34 years	6,320	118	35	35	689	699	727	795	653	2,569	282	111
25 to 29 years	3,145	80	26	23	350	355	401	437	340	1,133	183	55
30 to 34 years	3,175	38	10	13	339	344	326	358	314	1,436	99	56
35 to 44 years	7,267	60	23	38	607	779	747	764	621	3,628	213	107
35 to 39 years	3,647	34	15	20	317	390	393	397	309	1,772	124	53
40 to 44 years	3,620	26	9	18	291	389	354	367	311	1,855	89	54
45 to 54 years	5,400	37	10	22	392	546	600	613	467	2,714	129	76
45 to 49 years	3,035	21	5	14	227	301	329	323	260	1,556	79	36
50 to 54 years	2,365	16	4	7	166	245	272	290	207	1,158	50	40
55 to 64 years	2,503	20	7	13	239	321	361	277	199	1,066	86	44
55 to 59 years	1,600	9	5	7	143	199	221	168	139	709	44	29
60 to 64 years	903	11	2	6	96	122	140	109	60	357	41	14
65 years and over	742	6	4	6	165	133	94	96	52	187	40	34
65 to 69 years	422	4	4	3	93	75	50	58	30	105	27	18
70 years and over	320	1	-	3	72	59	44	38	21	82	14	17
20 years and over	26,024	384	105	153	2,844	3,298	3,167	3,052	2,290	10,731	1,074	508
25 to 54 years	18,987	215	68	95	1,688	2,023	2,074	2,172	1,741	8,911	624	293
55 years and over	3,246	26	11	19	404	454	456	373	251	1,253	126	78

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages-Continued

White women

Age	Median	Standard error	Mean	Standard error
Total, 16 years and over....	$8.33	$0.06	$9.87	$0.03
Under 25 years.....	6.23	.04	6.83	.03
16 to 19 years.....	5.76	.04	5.98	.03
20 to 24 years.....	6.95	.06	7.45	.04
25 years and over.....	9.25	.07	10.77	.03
25 to 34 years.....	8.93	.08	10.03	.05
25 to 29 years.....	8.57	.15	9.51	.07
30 to 34 years.....	9.25	.16	10.54	.08
35 to 44 years.....	9.82	.07	11.37	.06
35 to 39 years.....	9.73	.17	11.20	.09
40 to 44 years.....	9.92	.10	11.55	.09
45 to 54 years.....	9.83	.08	11.33	.07
45 to 49 years.....	9.91	.10	11.50	.10
50 to 54 years.....	9.71	.20	11.10	.10
55 to 64 years.....	8.88	.16	10.30	.09
55 to 59 years.....	9.10	.19	10.55	.11
60 to 64 years.....	8.38	.37	9.85	.14
65 years and over.....	7.36	.32	8.77	.17
65 to 69 years.....	7.44	.42	8.71	.20
70 years and over.....	7.25	.37	8.84	.29
20 years and over.....	8.85	.04	10.29	.03
25 to 54 years.....	9.45	.09	10.91	.04
55 years and over.....	8.40	.19	9.95	.08

- Data not available.

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages

Black, both sexes

Age	Total employed	Under $3.00	$3.00 to $3.99	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 or more	Under prevailing minimum wage	At prevailing minimum wage
Total, 16 years and over	9,773	42	16	101	1,341	1,340	1,282	1,068	882	3,701	431	274
Under 25 years	1,943	13	5	48	621	436	310	192	123	195	171	145
16 to 19 years	681	2	4	26	345	157	76	40	19	12	102	72
20 to 24 years	1,262	11	1	22	276	278	234	152	104	183	69	73
25 years and over	7,830	29	12	54	720	905	972	876	759	3,506	260	129
25 to 34 years	2,713	10	4	22	226	339	427	332	333	1,021	75	45
25 to 29 years	1,339	7	2	14	114	178	217	180	176	451	40	23
30 to 34 years	1,374	4	2	8	112	160	209	152	158	569	34	21
35 to 44 years	2,641	12	3	17	241	283	283	304	246	1,251	90	43
35 to 39 years	1,352	8	1	10	127	138	146	163	138	620	47	21
40 to 44 years	1,289	4	2	6	115	145	137	140	109	632	44	21
45 to 54 years	1,639	4	-	9	139	168	167	154	125	872	53	24
45 to 49 years	995	2	-	7	86	102	92	89	78	537	29	14
50 to 54 years	645	2	-	2	53	66	75	65	46	335	24	10
55 to 64 years	674	2	1	1	74	79	79	65	46	327	24	8
55 to 59 years	423	1	0	-	30	46	52	49	31	214	14	3
60 to 64 years	251	1	1	1	44	33	27	17	15	113	10	5
65 years and over	162	-	4	5	39	35	16	20	8	34	18	9
65 to 69 years	91	-	2	1	26	17	5	17	4	20	8	5
70 years and over	71	-	2	4	14	19	11	3	5	14	10	4
20 years and over	9,092	40	13	76	995	1,183	1,206	1,028	863	3,688	329	202
25 to 54 years	6,994	27	7	47	606	790	877	790	704	3,144	218	112
55 years and over	837	2	5	6	113	114	95	85	54	362	41	17

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages-Continued

Black, both sexes

Age	Median	Standard error	Mean	Standard error
Total, 16 years and over....	$8.39	$0.14	$9.88	$0.05
Under 25 years.....	6.32	.14	6.97	.05
16 to 19 years.....	5.76	.09	6.02	.04
20 to 24 years.....	6.92	.10	7.47	.07
25 years and over.....	9.14	.08	10.60	.06
25 to 34 years.....	8.77	.13	9.82	.09
25 to 29 years.....	8.46	.29	9.56	.12
30 to 34 years.....	8.96	.15	10.07	.12
35 to 44 years.....	9.45	.29	10.81	.10
35 to 39 years.....	9.28	.28	10.69	.14
40 to 44 years.....	9.74	.37	10.94	.14
45 to 54 years.....	9.99	.16	11.44	.14
45 to 49 years.....	10.12	.24	11.53	.18
50 to 54 years.....	9.87	.20	11.30	.23
55 to 64 years.....	9.65	.55	11.19	.22
55 to 59 years.....	9.83	.33	11.43	.27
60 to 64 years.....	9.06	.80	10.78	.35
65 years and over.....	6.78	.43	9.38	.74
65 to 69 years.....	6.96	.86	10.28	1.21
70 years and over.....	6.64	.69	8.23	.65
20 years and over.....	8.80	.08	10.17	.05
25 to 54 years.....	9.16	.08	10.57	.06
55 years and over.....	8.85	.37	10.84	.23

- Data not available.

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages

Black men

Age	Total employed	Under $3.00	$3.00 to $3.99	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 or more	Under prevailing minimum wage	At prevailing minimum wage
Total, 16 years and over	4,492	11	5	44	480	498	517	513	438	1,986	167	106
Under 25 years	875	1	1	20	274	187	128	110	59	95	63	71
16 to 19 years	305	-	1	9	162	73	29	20	7	3	36	38
20 to 24 years	570	1	-	11	113	113	99	90	52	91	27	33
25 years and over	3,618	10	4	24	206	311	389	403	379	1,892	104	36
25 to 34 years	1,251	4	1	5	55	116	195	147	170	558	23	16
25 to 29 years	618	2	-	4	33	66	94	80	88	250	12	12
30 to 34 years	633	2	1	1	22	50	101	67	82	308	11	4
35 to 44 years	1,222	3	2	10	77	89	94	146	124	677	44	11
35 to 39 years	633	2	-	8	40	48	49	72	70	343	22	6
40 to 44 years	589	1	2	2	36	41	45	74	54	334	22	5
45 to 54 years	742	2	-	6	33	56	63	70	53	459	24	3
45 to 49 years	464	2	-	5	20	31	43	40	37	287	13	2
50 to 54 years	278	1	-	1	13	24	20	30	16	172	11	1
55 to 64 years	316	1	1	0	20	34	30	28	25	176	7	1
55 to 59 years	194	-	0	-	5	21	21	21	16	109	3	0
60 to 64 years	122	1	1	0	15	13	9	7	9	67	4	1
65 years and over	87	-	1	2	21	16	6	12	6	23	7	5
65 to 69 years	52	-	-	-	16	8	1	12	2	13	3	4
70 years and over	35	-	1	2	4	8	5	0	4	10	4	1
20 years and over	4,188	11	4	35	318	424	487	493	431	1,983	130	69
25 to 54 years	3,214	9	3	22	165	261	352	363	348	1,693	90	29
55 years and over	403	1	2	3	41	50	36	40	31	199	13	7

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages-Continued

Black men

Age	Median	Standard error	Mean	Standard error
Total, 16 years and over	$9.09	$0.10	$10.60	$0.08
Under 25 years	6.47	.20	7.13	.09
16 to 19 years	5.71	.10	6.00	.06
20 to 24 years	7.15	.18	7.73	.12
25 years and over	9.96	.11	11.44	.09
25 to 34 years	9.21	.19	10.54	.13
25 to 29 years	9.00	.18	10.21	.18
30 to 34 years	9.74	.37	10.87	.20
35 to 44 years	10.17	.19	11.67	.15
35 to 39 years	10.10	.29	11.62	.20
40 to 44 years	10.23	.48	11.74	.21
45 to 54 years	10.92	.36	12.38	.21
45 to 49 years	10.95	.39	12.24	.24
50 to 54 years	10.84	.81	12.62	.39
55 to 64 years	10.36	.66	12.09	.31
55 to 59 years	10.28	.78	12.32	.40
60 to 64 years	10.46	.95	11.71	.48
65 years and over	7.12	.87	10.67	1.27
65 to 69 years	7.82	.48	11.85	2.03
70 years and over	6.96	.67	8.90	.81
20 years and over	9.45	.22	10.93	.08
25 to 54 years	9.98	.11	11.40	.09
55 years and over	9.70	.63	11.78	.37

- Data not available.

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages

Black women

Age	Total employed	Under $3.00	$3.00 to $3.99	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 or more	Under prevailing minimum wage	At prevailing minimum wage
Total, 16 years and over	5,281	31	11	57	861	842	766	555	443	1,714	264	167
Under 25 years	1,068	12	4	28	347	249	182	82	63	100	108	75
16 to 19 years	376	2	3	17	184	84	47	20	12	9	66	34
20 to 24 years	692	10	1	12	163	165	136	62	52	91	43	40
25 years and over	4,213	19	7	29	514	593	583	473	380	1,614	156	93
25 to 34 years	1,462	7	3	16	171	223	232	185	163	463	52	29
25 to 29 years	721	5	2	10	81	112	123	100	87	201	29	12
30 to 34 years	741	2	1	7	90	111	109	85	76	262	23	17
35 to 44 years	1,420	9	1	6	165	195	189	158	122	575	46	32
35 to 39 years	719	5	1	2	86	90	98	92	67	277	25	16
40 to 44 years	701	4	-	4	78	104	91	66	55	298	22	16
45 to 54 years	898	2	-	3	106	113	104	84	72	414	29	21
45 to 49 years	531	1	-	2	66	71	50	50	41	251	16	12
50 to 54 years	367	1	-	1	40	42	54	35	30	163	13	9
55 to 64 years	358	1	0	1	54	45	48	37	21	151	17	7
55 to 59 years	229	1	-	-	25	25	31	27	15	105	11	3
60 to 64 years	129	-	0	1	28	20	18	10	5	46	6	4
65 years and over	75	-	3	3	19	19	10	8	2	12	11	4
65 to 69 years	39	-	2	1	9	9	4	5	1	8	6	1
70 years and over	36	-	1	2	10	10	6	3	1	4	6	3
20 years and over	4,905	29	8	41	677	759	719	535	432	1,705	198	133
25 to 54 years	3,779	17	4	25	441	530	525	428	357	1,451	128	82
55 years and over	434	1	3	4	73	64	58	45	23	163	28	10

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages-Continued

Black women

Age	Median	Standard error	Mean	Standard error
Total, 16 years and over....	$7.90	$0.08	$9.27	$0.06
Under 25 years.....	6.22	.09	6.83	.06
16 to 19 years.....	5.81	.10	6.04	.06
20 to 24 years.....	6.77	.11	7.26	.08
25 years and over.....	8.48	.18	9.89	.07
25 to 34 years.....	8.12	.12	9.20	.10
25 to 29 years.....	8.01	.16	9.01	.14
30 to 34 years.....	8.25	.29	9.39	.13
35 to 44 years.....	8.74	.26	10.07	.11
35 to 39 years.....	8.60	.43	9.88	.17
40 to 44 years.....	8.83	.30	10.27	.15
45 to 54 years.....	9.18	.27	10.66	.17
45 to 49 years.....	9.32	.66	10.91	.23
50 to 54 years.....	9.05	.35	10.29	.23
55 to 64 years.....	8.49	.78	10.40	.26
55 to 59 years.....	9.27	.80	10.68	.32
60 to 64 years.....	7.55	.68	9.90	.44
65 years and over.....	6.55	.49	7.90	.53
65 to 69 years.....	6.77	.61	8.17	.61
70 years and over.....	6.30	.74	7.60	.88
20 years and over.....	8.10	.08	9.52	.06
25 to 54 years.....	8.56	.19	9.88	.07
55 years and over.....	7.99	.26	9.97	.24

- Data not available.

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages

Hispanic origin both sexes

Age	Total employed	Under $3.00	$3.00 to $3.99	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 or more	Under prevailing minimum wage	At prevailing minimum wage
Total, 16 years and over	9,065	57	17	72	1,562	1,471	1,192	998	754	2,942	393	276
Under 25 years	2,247	21	7	35	634	510	387	240	157	257	165	125
16 to 19 years	720	11	2	13	324	177	90	50	13	39	77	66
20 to 24 years	1,527	10	6	21	310	333	297	189	144	218	88	59
25 years and over	6,818	37	9	37	928	961	805	759	597	2,685	228	151
25 to 34 years	2,723	14	9	21	378	371	346	355	273	956	99	61
25 to 29 years	1,369	8	8	12	184	188	178	191	147	453	58	34
30 to 34 years	1,354	6	1	9	195	183	168	163	127	503	42	27
35 to 44 years	2,288	11	-	9	286	299	259	233	195	995	76	31
35 to 39 years	1,239	6	-	7	157	159	145	134	94	537	45	16
40 to 44 years	1,048	5	-	2	129	140	114	99	101	458	31	14
45 to 54 years	1,229	8	-	2	183	201	115	121	91	508	38	41
45 to 49 years	741	6	-	-	98	131	66	67	62	311	19	22
50 to 54 years	488	2	-	2	86	70	49	53	29	197	19	19
55 to 64 years	495	2	0	4	60	75	72	42	31	208	11	13
55 to 59 years	336	-	-	2	36	46	43	29	25	154	5	9
60 to 64 years	158	2	0	1	24	29	29	13	7	53	5	5
65 years and over	83	1	-	2	20	15	12	8	6	19	4	5
65 to 69 years	50	-	-	1	12	10	6	7	2	13	2	4
70 years and over	33	1	-	1	8	5	6	1	4	6	2	1
20 years and over	8,345	46	15	59	1,238	1,294	1,102	948	740	2,903	316	210
25 to 54 years	6,240	33	9	32	848	871	721	709	559	2,459	213	133
55 years and over	578	3	0	6	80	90	84	50	37	226	15	18

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages-Continued

Hispanic origin both sexes

Age	Median	Standard error	Mean	Standard error
Total, 16 years and over....	$7.92	$0.08	$9.35	$0.06
Under 25 years.....	6.61	.15	7.16	.06
16 to 19 years.....	5.95	.08	6.32	.07
20 to 24 years.....	7.01	.11	7.56	.07
25 years and over.....	8.61	.19	10.07	.08
25 to 34 years.....	8.26	.21	9.41	.10
25 to 29 years.....	8.17	.16	9.20	.15
30 to 34 years.....	8.45	.39	9.62	.15
35 to 44 years.....	8.99	.22	10.57	.14
35 to 39 years.....	8.90	.32	10.53	.20
40 to 44 years.....	9.08	.29	10.62	.21
45 to 54 years.....	8.74	.39	10.57	.23
45 to 49 years.....	8.85	.36	10.80	.31
50 to 54 years.....	8.39	.86	10.22	.31
55 to 64 years.....	8.62	.79	10.41	.31
55 to 59 years.....	9.15	.64	10.62	.35
60 to 64 years.....	7.65	.58	9.97	.61
65 years and over.....	6.99	.49	8.19	.43
65 to 69 years.....	6.98	.81	8.16	.51
70 years and over.....	7.01	.59	8.24	.77
20 years and over.....	8.12	.08	9.61	.07
25 to 54 years.....	8.64	.19	10.06	.08
55 years and over.....	8.22	.47	10.09	.27

- Data not available.

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages

Hispanic origin men

Age	Total employed	Under $3.00	$3.00 to $3.99	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 or more	Under prevailing minimum wage	At prevailing minimum wage
Total, 16 years and over	5,414	23	9	38	749	787	698	622	477	2,012	199	126
Under 25 years	1,340	6	3	22	341	298	238	151	109	171	90	65
16 to 19 years	403	2	2	7	165	99	56	34	10	28	42	30
20 to 24 years	936	4	2	14	176	199	182	117	99	143	49	34
25 years and over	4,075	16	6	16	408	489	460	471	368	1,841	109	61
25 to 34 years	1,723	4	6	10	188	195	238	226	177	680	53	34
25 to 29 years	887	2	6	6	94	109	126	119	96	329	32	21
30 to 34 years	836	3	-	4	94	86	111	106	81	350	21	13
35 to 44 years	1,344	6	-	3	103	146	131	151	123	681	34	9
35 to 39 years	735	3	-	3	52	83	81	87	59	366	16	5
40 to 44 years	609	3	-	-	51	63	49	64	63	315	18	5
45 to 54 years	677	5	-	1	75	102	49	65	47	333	17	13
45 to 49 years	425	4	-	-	43	66	32	37	34	209	9	8
50 to 54 years	252	1	-	1	33	36	17	28	13	124	8	5
55 to 64 years	278	-	-	1	34	38	33	23	17	132	3	4
55 to 59 years	178	-	-	1	18	19	20	16	11	93	2	2
60 to 64 years	100	-	-	-	16	19	14	7	6	38	0	2
65 years and over	53	1	-	1	7	7	10	6	5	16	3	1
65 to 69 years	29	-	-	0	5	4	3	5	1	9	1	1
70 years and over	24	1	-	1	2	3	6	1	3	6	2	-
20 years and over	5,011	21	7	31	584	688	642	588	467	1,984	158	95
25 to 54 years	3,744	15	6	14	366	443	417	442	347	1,693	104	56
55 years and over	331	1	-	2	41	46	43	29	21	147	5	5

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages-Continued

Hispanic origin men

Age	Median	Standard error	Mean	Standard error
Total, 16 years and over....	$8.24	$0.16	$9.89	$0.09
Under 25 years.....	6.81	.12	7.32	.08
16 to 19 years.....	6.03	.11	6.50	.10
20 to 24 years.....	7.10	.14	7.68	.10
25 years and over.....	9.16	.15	10.73	.11
25 to 34 years.....	8.78	.24	9.85	.15
25 to 29 years.....	8.52	.50	9.60	.21
30 to 34 years.....	8.95	.29	10.12	.20
35 to 44 years.....	9.85	.21	11.39	.19
35 to 39 years.....	9.79	.33	11.26	.24
40 to 44 years.....	9.92	.31	11.55	.30
45 to 54 years.....	9.60	.86	11.53	.32
45 to 49 years.....	9.68	.83	11.80	.46
50 to 54 years.....	9.38	1.96	11.08	.39
55 to 64 years.....	9.40	1.08	11.39	.48
55 to 59 years.....	9.97	.81	11.62	.57
60 to 64 years.....	8.07	.68	11.00	.85
65 years and over.....	7.89	.77	9.01	.59
65 to 69 years.....	8.10	.79	8.94	.71
70 years and over.....	7.48	1.30	9.09	.96
20 years and over.....	8.69	.20	10.16	.09
25 to 54 years.....	9.17	.16	10.71	.11
55 years and over.....	9.05	.84	11.01	.41

- Data not available.

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages

Hispanic origin women

Age	Total employed	Under $3.00	$3.00 to $3.99	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 or more	Under prevailing minimum wage	At prevailing minimum wage
Total, 16 years and over	3,651	35	8	34	813	684	494	377	277	929	194	150
Under 25 years	907	15	4	13	292	212	149	89	48	85	75	60
16 to 19 years	317	9	0	6	159	78	34	17	3	11	35	36
20 to 24 years	591	6	4	7	133	134	115	72	45	75	40	24
25 years and over	2,743	20	3	21	521	472	345	288	229	844	119	90
25 to 34 years	1,000	10	3	11	190	176	108	129	97	276	47	27
25 to 29 years	482	6	2	5	90	80	52	72	51	124	26	13
30 to 34 years	518	3	1	6	101	96	56	57	46	152	21	14
35 to 44 years	944	5	-	6	183	153	129	82	72	314	42	21
35 to 39 years	504	3	-	4	106	75	64	47	34	171	29	12
40 to 44 years	440	2	-	2	78	77	65	36	38	142	13	10
45 to 54 years	552	4	-	1	108	99	67	56	43	175	21	28
45 to 49 years	317	3	-	-	55	65	34	30	28	102	10	14
50 to 54 years	236	1	-	1	53	34	33	25	16	74	11	14
55 to 64 years	217	2	0	3	26	37	39	19	15	76	8	9
55 to 59 years	158	-	-	1	18	27	24	13	14	61	3	6
60 to 64 years	59	2	0	1	8	10	15	6	1	15	5	3
65 years and over	30	-	-	1	13	8	3	2	1	3	1	4
65 to 69 years	21	-	-	1	7	6	3	2	0	3	1	3
70 years and over	9	-	-	-	6	2	-	-	1	-	-	1
20 years and over	3,334	26	8	28	654	606	460	360	274	919	159	114
25 to 54 years	2,496	18	3	18	481	428	304	267	212	765	110	77
55 years and over	247	2	0	3	39	44	41	21	16	79	9	13

Table A-7. Hourly earnings of employed wage and salary workers paid hourly rates by age, sex, race, and Hispanic origin, 1998 annual averages-Continued

Hispanic origin women

Age	Median	Standard error	Mean	Standard error
Total, 16 years and over....	$7.22	$0.11	$8.54	$0.08
Under 25 years.....	6.29	.18	6.92	.07
16 to 19 years.....	5.84	.11	6.08	.09
20 to 24 years.....	6.87	.15	7.36	.10
25 years and over.....	7.80	.14	9.07	.09
25 to 34 years.....	7.81	.19	8.64	.11
25 to 29 years.....	7.83	.24	8.46	.15
30 to 34 years.....	7.78	.32	8.82	.16
35 to 44 years.....	7.83	.24	9.40	.18
35 to 39 years.....	7.87	.29	9.47	.29
40 to 44 years.....	7.78	.42	9.32	.22
45 to 54 years.....	7.80	.34	9.39	.26
45 to 49 years.....	7.86	.53	9.45	.33
50 to 54 years.....	7.74	.44	9.30	.41
55 to 64 years.....	7.89	.50	9.15	.28
55 to 59 years.....	8.32	1.13	9.50	.30
60 to 64 years.....	7.29	.44	8.23	.60
65 years and over.....	5.86	.45	6.76	.42
65 to 69 years.....	6.07	.49	7.12	.55
70 years and over.....	5.58	.29	5.90	.36
20 years and over.....	7.52	.16	8.77	.08
25 to 54 years.....	7.81	.14	9.10	.10
55 years and over.....	7.62	.40	8.86	.25

- Data not available.

Table A-10. Hourly earnings of employed wage and salary workers paid hourly rates by marital status, age, and sex, 1998 annual averages

Total, both sexes

Numbers in thousands

Marital status and age	Total employed	Under $3.00	$3.00 to $3.99	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 or more	Under prevailing minimum wage	At prevailing minimum wage
Total, 16 years and over	71,440	707	211	490	8,671	8,552	7,769	7,193	5,603	32,243	2,834	1,593
Never married												
16 years and over	24,174	413	126	285	5,142	4,152	3,237	2,588	1,734	6,496	1,662	952
16 to 24 years	14,023	289	92	232	4,233	3,107	2,085	1,475	796	1,714	1,273	797
25 years and over	10,151	124	34	53	909	1,045	1,152	1,113	938	4,782	389	155
25 to 54 years	9,816	120	34	48	867	1,013	1,113	1,085	916	4,620	369	146
Married, spouse present												
16 years and over	35,319	188	57	133	2,336	3,022	3,238	3,378	2,879	20,089	744	430
16 to 24 years	1,860	16	3	12	285	336	285	268	207	448	70	68
25 years and over	33,459	172	54	121	2,051	2,687	2,953	3,109	2,672	19,641	674	362
25 to 54 years	28,730	158	45	91	1,611	2,177	2,420	2,651	2,364	17,213	535	292
Other marital status												
16 years and over	11,947	106	28	72	1,193	1,377	1,294	1,227	990	5,659	428	211
16 to 24 years	478	12	1	6	101	105	82	60	31	79	34	18
25 years and over	11,469	94	27	67	1,092	1,272	1,211	1,167	959	5,580	394	193
25 to 54 years	9,268	79	19	46	795	969	944	929	796	4,692	296	135
Separated and divorced												
16 years and over	10,557	96	24	59	973	1,152	1,114	1,069	882	5,186	365	160
16 to 24 years	467	12	1	6	98	103	77	60	31	79	33	17
25 years and over	10,090	85	22	53	875	1,050	1,037	1,009	851	5,108	332	142
25 to 54 years	8,704	73	19	45	729	899	875	859	746	4,459	279	123
Separated												
16 years and over	2,949	26	8	26	372	395	369	326	240	1,187	139	57
16 to 24 years	288	4	1	5	60	65	50	37	14	50	20	12
25 years and over	2,662	22	7	22	312	330	319	289	225	1,136	120	45
25 to 54 years	2,398	22	6	18	278	289	281	262	203	1,038	108	40
Divorced												
16 years and over	7,608	70	16	33	601	757	745	743	643	4,000	226	103
16 to 24 years	179	8	-	1	38	38	27	23	17	28	14	5
25 years and over	7,429	63	16	32	563	720	718	720	626	3,971	212	98
25 to 54 years	6,306	52	12	28	450	610	594	596	543	3,421	171	83
Widowed												
16 years and over	1,390	10	5	13	220	225	180	158	108	472	63	51
16 to 24 years	11	-	-	-	3	2	5	-	-	-	1	1
25 years and over	1,379	10	5	13	217	222	174	158	108	472	62	50
25 to 54 years	564	5	-	1	66	70	69	70	50	232	17	12

Source: Unpublished tabulations from the Current Population Survey, Bureau of Labor Statistics

Table A-10. Hourly earnings of e..oyed wage and salary workers paid hourly rates by marital status, age, and sex, 1998 annual averages-Continued

Total, both sexes

Marital status and age	Median	Standard error	Mean	Standard error
Total, 16 years and over...	$9.10	$0.03	$10.82	$0.02
Never married				
16 years and over.....	7.28	.05	8.70	.03
16 to 24 years.....	6.40	.05	7.09	.02
25 years and over.....	9.41	.15	10.93	.06
25 to 54 years.....	9.41	.15	10.91	.06
Married, spouse present				
16 years and over.....	10.40	.09	12.21	.03
16 to 24 years.....	7.81	.13	8.35	.06
25 years and over.....	10.75	.08	12.43	.04
25 to 54 years.....	10.88	.06	12.50	.04
Other marital status				
16 years and over.....	9.44	.15	10.99	.05
16 to 24 years.....	6.94	.16	7.47	.11
25 years and over.....	9.67	.13	11.14	.06
25 to 54 years.....	9.85	.07	11.31	.06
Separated and divorced				
16 years and over.....	9.74	.11	11.18	.06
16 to 24 years.....	6.95	.17	7.49	.11
25 years and over.....	9.86	.07	11.35	.06
25 to 54 years.....	9.90	.07	11.38	.06
Separated				
16 years and over.....	8.63	.22	10.27	.11
16 to 24 years.....	6.94	.21	7.50	.14
25 years and over.....	8.91	.15	10.57	.11
25 to 54 years.....	8.96	.15	10.67	.12
Divorced				
16 years and over.....	10.00	.08	11.53	.07
16 to 24 years.....	6.97	.29	7.48	.18
25 years and over.....	10.07	.08	11.63	.07
25 to 54 years.....	10.12	.09	11.65	.08
Widowed				
16 years and over.....	8.01	.16	9.57	.14
16 to 24 years.....	6.68	1.08	6.33	.23
25 years and over.....	8.04	.16	9.59	.14
25 to 54 years.....	8.87	.31	10.28	.22

- Data not available.

Table .. .0. Hourly earnings of employed wage and salary worke.. paid hourly rates by marital status, age, and sex, 1998 a. .al averages

Men

Marital status and age	Total employed	Under $3.00	$3.00 to $3.99	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 or more	Under prevailing minimum wage	At prevailing minimum wage
Total, 16 years and over...	35,761	188	61	202	3,387	3,471	3,342	3,284	2,724	19,101	1,039	628
Never married												
16 years and over.....	13,033	126	50	126	2,373	2,058	1,758	1,473	999	4,070	689	443
16 to 24 years.....	7,345	68	32	102	1,977	1,541	1,130	882	488	1,125	507	373
25 years and over.....	5,688	58	18	24	396	517	629	591	511	2,945	182	70
25 to 54 years.....	5,538	56	18	21	379	502	614	580	499	2,867	175	66
Married, spouse present												
16 years and over.....	18,103	43	7	52	730	1,021	1,211	1,389	1,366	12,283	229	142
16 to 24 years.....	863	1	2	5	84	121	126	131	114	281	18	24
25 years and over.....	17,240	42	6	47	646	900	1,085	1,259	1,253	12,002	211	118
25 to 54 years.....	14,585	38	4	26	439	675	859	1,042	1,101	10,399	144	84
Other marital status												
16 years and over.....	4,624	19	4	25	284	392	373	422	358	2,748	121	43
16 to 24 years.....	203	1	0	3	27	43	35	36	12	45	10	2
25 years and over.....	4,421	18	3	22	257	349	338	385	346	2,702	110	41
25 to 54 years.....	3,774	18	1	13	195	282	275	321	298	2,370	88	30
Separated and divorced												
16 years and over.....	4,397	19	3	21	263	361	349	400	339	2,642	111	36
16 to 24 years.....	202	1	0	3	27	42	35	36	12	45	10	2
25 years and over.....	4,196	18	3	18	236	319	314	364	327	2,597	101	34
25 to 54 years.....	3,671	18	1	12	190	273	265	310	290	2,311	86	30
Separated												
16 years and over.....	1,316	5	1	8	116	158	123	154	104	646	50	14
16 to 24 years.....	135	-	0	3	20	27	22	25	8	28	8	2
25 years and over.....	1,181	5	1	5	96	132	101	129	95	617	42	12
25 to 54 years.....	1,054	5	1	3	82	112	84	117	84	565	36	10
Divorced												
16 years and over.....	3,082	14	2	12	147	203	226	246	235	1,997	61	22
16 to 24 years.....	67	1	-	-	7	16	12	11	4	17	2	-
25 years and over.....	3,015	13	2	12	141	187	213	235	231	1,980	58	22
25 to 54 years.....	2,617	13	1	9	108	161	181	193	206	1,746	49	20
Widowed												
16 years and over.....	226	0	1	4	21	31	24	22	19	105	10	7
16 to 24 years.....	1	-	-	-	-	1	-	-	-	-	-	-
25 years and over.....	225	0	1	4	21	30	24	22	19	105	10	7
25 to 54 years.....	102	0	-	0	4	10	11	11	8	59	2	-

Table A-10. Hourly earnings of employed wage and salary workers paid hourly rates by marital status, age, and sex, 1998 annual averages-Continued

Men

Marital status and age	Median	Standard error	Mean	Standard error
Total, 16 years and over...	$10.06	$0.04	$11.84	$0.03
Never married				
16 years and over.....	7.80	.05	9.19	.04
16 to 24 years.....	6.77	.05	7.45	.03
25 years and over.....	9.91	.08	11.43	.08
25 to 54 years.....	9.91	.08	11.41	.08
Married, spouse present				
16 years and over.....	12.08	.07	13.61	.05
16 to 24 years.....	8.47	.29	9.06	.10
25 years and over.....	12.29	.13	13.83	.05
25 to 54 years.....	12.52	.18	13.89	.05
Other marital status				
16 years and over.....	10.82	.18	12.42	.10
16 to 24 years.....	7.34	.80	7.96	.16
25 years and over.....	11.02	.16	12.62	.10
25 to 54 years.....	11.14	.16	12.71	.11
Separated and divorced				
16 years and over.....	10.88	.16	12.49	.10
16 to 24 years.....	7.38	.88	7.97	.16
25 years and over.....	11.09	.16	12.70	.10
25 to 54 years.....	11.14	.16	12.73	.11
Separated				
16 years and over.....	9.70	.35	11.33	.17
16 to 24 years.....	7.34	.95	7.82	.18
25 years and over.....	9.96	.21	11.73	.18
25 to 54 years.....	10.05	.22	11.90	.20
Divorced				
16 years and over.....	11.52	.42	12.98	.12
16 to 24 years.....	7.46	1.68	8.25	.31
25 years and over.....	11.72	.32	13.08	.12
25 to 54 years.....	11.75	.29	13.06	.13
Widowed				
16 years and over.....	9.35	.84	11.14	.36
16 to 24 years.....	5.99	.45	6.00	.00
25 years and over.....	9.39	.88	11.17	.37
25 to 54 years.....	10.84	2.15	12.14	.51

- Data not available.

Table . Hourly earnings of employed wage and salary worke aid hourly rates by marital status, age, and sex, 1998 . .1
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Women

Marital status and age	Total employed	Under $3.00	$3.00 to $3.99	$4.00 to $4.99	$5.00 to $5.99	$6.00 to $6.99	$7.00 to $7.99	$8.00 to $8.99	$9.00 to $9.99	$10.00 or more	Under prevailing minimum wage	At prevailing minimum wage
Total, 16 years and over...	35,680	519	150	288	5,284	5,081	4,427	3,909	2,879	13,143	1,794	965
Never married												
16 years and over.....	11,141	287	76	160	2,769	2,095	1,479	1,115	734	2,426	973	509
16 to 24 years.....	6,678	220	59	130	2,256	1,566	956	593	307	589	766	424
25 years and over.....	4,463	67	16	29	514	528	523	522	427	1,836	207	86
25 to 54 years.....	4,278	64	16	27	488	510	499	505	417	1,752	194	80
Married, spouse present												
16 years and over.....	17,216	145	49	81	1,606	2,001	2,027	1,989	1,513	7,806	515	288
16 to 24 years.....	997	15	1	8	201	214	159	138	94	167	52	44
25 years and over.....	16,220	130	48	74	1,405	1,787	1,868	1,851	1,419	7,639	463	244
25 to 54 years.....	14,145	120	41	64	1,172	1,501	1,561	1,609	1,263	6,814	392	208
Other marital status												
16 years and over.....	7,323	87	25	48	909	985	921	805	632	2,911	307	168
16 to 24 years.....	275	11	1	3	74	62	48	24	19	33	24	16
25 years and over.....	7,048	76	24	45	835	923	873	781	613	2,878	283	152
25 to 54 years.....	5,494	60	17	34	600	687	669	608	498	2,322	208	104
Separated and divorced												
16 years and over.....	6,160	77	21	39	710	791	765	669	543	2,544	254	124
16 to 24 years.....	265	11	1	3	71	61	42	24	19	33	23	15
25 years and over.....	5,895	66	20	36	639	731	723	645	524	2,511	231	109
25 to 54 years.....	5,033	55	17	33	538	626	610	549	456	2,148	194	93
Separated												
16 years and over.....	1,634	21	7	18	256	237	246	172	136	541	89	43
16 to 24 years.....	153	4	1	2	40	39	27	12	6	22	11	10
25 years and over.....	1,481	17	6	16	216	198	218	160	130	519	78	33
25 to 54 years.....	1,344	17	6	14	196	177	197	145	119	473	72	30
Divorced												
16 years and over.....	4,526	56	14	21	454	554	519	497	407	2,003	165	81
16 to 24 years.....	112	7	-	1	31	22	15	12	13	12	11	5
25 years and over.....	4,414	49	14	20	423	533	505	485	394	1,991	154	76
25 to 54 years.....	3,689	38	12	19	342	449	413	404	337	1,675	122	63
Widowed												
16 years and over.....	1,163	10	4	9	199	194	156	136	89	367	53	44
16 to 24 years.....	10	-	-	-	3	1	5	-	-	-	1	1
25 years and over.....	1,153	10	4	9	196	192	150	136	89	367	52	43
25 to 54 years.....	462	5	-	1	62	60	58	60	42	174	14	12

Table A-10. Hourly earnings of employed wage and salary workers paid hourly rates by marital status, age, and sex, 1998 annual averages-Continued

Women

Marital status and age	Median	Standard error	Mean	Standard error
Total, 16 years and over...	$8.23	$0.04	$9.80	$0.02
Never married				
16 years and over.....	6.92	.04	8.14	.04
16 to 24 years.....	6.15	.03	6.70	.03
25 years and over.....	8.89	.10	10.28	.07
25 to 54 years.....	8.88	.10	10.26	.07
Married, spouse present				
16 years and over.....	9.19	.06	10.75	.04
16 to 24 years.....	7.10	.11	7.73	.07
25 years and over.....	9.44	.11	10.93	.04
25 to 54 years.....	9.62	.10	11.06	.04
Other marital status				
16 years and over.....	8.70	.11	10.10	.06
16 to 24 years.....	6.66	.24	7.11	.13
25 years and over.....	8.81	.08	10.21	.06
25 to 54 years.....	8.96	.09	10.35	.06
Separated and divorced				
16 years and over.....	8.86	.09	10.25	.06
16 to 24 years.....	6.65	.25	7.13	.13
25 years and over.....	8.98	.09	10.39	.06
25 to 54 years.....	9.00	.09	10.40	.07
Separated				
16 years and over.....	7.97	.13	9.43	.11
16 to 24 years.....	6.63	.33	7.22	.19
25 years and over.....	8.13	.13	9.65	.12
25 to 54 years.....	8.15	.14	9.69	.13
Divorced				
16 years and over.....	9.15	.10	10.55	.07
16 to 24 years.....	6.69	.38	7.02	.19
25 years and over.....	9.22	.13	10.64	.07
25 to 54 years.....	9.27	.16	10.65	.08
Widowed				
16 years and over.....	7.87	.15	9.26	.13
16 to 24 years.....	6.78	.31	6.37	.22
25 years and over.....	7.90	.15	9.29	.14
25 to 54 years.....	8.50	.47	9.87	.22

- Data not available.

Table A-25. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages

Total both sexes

Numbers in thousands

Class of worker, industry, sex, race, and Hispanic origin	Total employed	Under $3.00	$3.00 to $3.49	$3.50 to $3.99	$4.00 to $4.49	$4.50 to $4.99	$5.00 to $5.49	$5.50 to $5.99	$6.00 to $6.99	$7.00 to $7.99
Total	71,440	707	158	53	256	234	5,191	3,481	8,552	7,769
Private sector	62,796	682	155	51	242	223	4,806	3,250	7,879	7,041
Goods-producing industries	19,179	31	4	1	34	40	595	461	1,472	1,843
Agriculture	1,133	6	-	-	9	20	146	127	214	194
Agricultural services	550	1	-	-	3	8	46	46	88	89
Other agriculture	583	5	-	-	6	12	101	81	126	105
Mining	354	1	-	-	-	-	6	4	13	27
Construction	4,400	9	1	-	5	4	70	42	242	341
Manufacturing	13,293	14	3	1	20	17	372	287	1,002	1,280
Durable goods	8,154	11	-	-	12	5	145	131	516	720
Lumber and wood products except furniture	571	1	-	-	1	1	16	23	56	74
Furniture and fixtures	488	0	-	-	1	-	18	7	43	70
Stone, clay, glass, and concrete products	438	1	-	-	1	-	10	7	28	36
Metal industries	1,540	3	-	-	3	2	17	27	96	117
Primary metals	551	2	-	-	-	1	3	8	21	28
Fabricated metals	977	1	-	-	3	2	15	19	71	87
Not specified metals	12	-	-	-	-	-	-	-	4	2
Machinery and computing equipment	1,527	1	-	-	3	1	18	19	65	127
Electrical machinery, equipment, and supplies	1,186	1	-	-	2	-	21	18	78	105
Transportation equipment	1,560	0	-	-	1	1	13	9	64	94
Motor vehicles and equipment	940	0	-	-	1	1	10	6	33	62
Other transportation equipment	620	-	-	-	0	-	3	3	30	32
Aircraft and parts	316	-	-	-	-	-	3	3	15	14
Other transportation equipment	305	-	-	-	0	-	-	-	15	18
Professional and photographic equipment, watches	437	4	-	-	1	-	6	5	30	35
Toys, amusement, and sporting goods	92	0	-	-	-	0	5	3	18	16
Miscellaneous manufacturing industries	315	-	-	-	1	0	22	13	38	44
Nondurable goods	5,139	3	3	1	7	11	226	156	487	560
Food and kindred products	1,187	2	2	-	0	1	52	34	122	168
Tobacco manufactures	36	-	-	-	-	-	-	-	2	2
Textile mill products	423	-	-	-	-	-	15	13	45	48
Apparel and other finished textile products	542	1	-	-	2	7	83	54	92	90
Paper and allied products	490	-	-	-	2	1	8	3	22	31
Printing, publishing, and allied industries	935	0	-	1	1	1	42	22	83	85
Chemicals and allied products	672	1	-	-	-	-	9	17	45	43
Petroleum and coal products	87	-	-	-	1	-	3	-	4	3
Rubber and misc. plastic products	699	-	1	-	1	0	12	10	55	78
Leather and leather products	67	-	-	-	-	-	2	3	17	10
Service-producing industries	43,617	652	151	51	208	183	4,212	2,789	6,407	5,198

Source: Unpublished tabulations from the Current Population Survey, Bureau of Labor Statistics

Table A-[illegible]. Hourly earnings of employed wage and salary workers p[illegible] hourly rates by class of worker, detailed industry, s[illegible] race, and Hispanic origin, 1998 annual averages-Continued

Total both sexes

Class of worker, industry, sex, race, and Hispanic origin	Total employed	Under $3.00	$3.00 to $3.49	$3.50 to $3.99	$4.00 to $4.49	$4.50 to $4.99	$5.00 to $5.49	$5.50 to $5.99	$6.00 to $6.99	$7.00 to $7.99
Private sector										
Transportation, communication, and other public utilities	4,112	10	1	1	1	9	94	61	224	333
Transportation	2,576	6	1	-	1	7	73	48	174	240
Communication and public utilities	1,536	4	-	1	-	2	21	13	50	93
Communications	899	2	-	1	-	2	15	7	37	65
Utilities and sanitary services	637	2	-	-	-	-	6	6	13	28
Wholesale and retail trade	17,469	516	115	40	132	115	2,700	1,739	3,483	2,187
Wholesale trade	2,200	7	1	-	6	2	90	79	237	253
Retail trade	15,268	510	114	40	126	113	2,610	1,659	3,246	1,934
Finance, insurance, and real estate	3,021	6	-	1	7	6	74	53	274	354
Banking and other finance	1,473	2	-	-	2	3	24	16	118	187
Insurance and real estate	1,548	5	-	1	6	4	49	37	155	166
Services	19,014	119	36	9	67	53	1,345	936	2,427	2,324
Private households	488	23	7	1	15	1	93	35	69	52
Miscellaneous services	18,527	96	29	8	53	52	1,251	901	2,358	2,272
Business, automobile, and repair services	4,021	11	0	1	9	9	245	164	525	578
Business services	3,016	9	0	1	7	5	175	120	416	463
Automobile and repair services	1,005	2	-	-	3	3	71	44	109	114
Personal services, except private households	1,815	21	19	2	16	12	226	181	379	311
Entertainment and recreational services	1,302	21	5	2	11	10	209	132	292	151
Professional and related services	11,369	44	5	4	16	21	569	424	1,157	1,229
Hospitals	3,377	7	-	-	1	1	46	42	175	243
Health services, except hospitals	3,824	13	1	-	2	8	183	157	469	473
Educational services	1,041	4	-	1	3	3	112	72	139	128
Social services	1,331	16	3	2	6	3	163	112	239	207
Other professional services	1,795	4	1	1	3	6	65	41	136	179
Forestry and fisheries	21	-	-	0	-	-	2	0	5	3
Private sector nonagricultural goods and services	61,664	677	155	51	233	204	4,660	3,123	7,665	6,847
Public sector	8,644	25	4	2	14	11	384	231	673	728
Federal government	1,898	6	-	1	2	1	33	19	70	90
Public administration	794	2	-	-	1	-	8	6	18	35
U.S. Postal service	686	3	-	-	1	-	5	4	14	21
Other	418	0	-	1	-	1	19	9	38	33

Table A-25. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages-Continued

Total both sexes

Class of worker, industry, sex, race, and Hispanic origin	Total employed	Under $3.00	$3.00 to $3.49	$3.50 to $3.99	$4.00 to $4.49	$4.50 to $4.99	$5.00 to $5.49	$5.50 to $5.99	$6.00 to $6.99	$7.00 to $7.99
State government	2,107	7	0	-	2	3	153	75	206	184
Public administration	754	2	0	-	-	-	15	8	34	38
Other	1,353	5	-	-	2	3	138	68	172	145
Local government	4,639	13	3	1	10	7	198	136	397	455
Public administration	1,356	1	-	0	2	3	27	17	69	83
Educational services	1,817	5	3	1	2	3	106	59	196	229
Other	1,466	7	1	-	7	1	65	60	131	144
Total public administration	2,904	5	0	0	2	3	50	31	121	156

Table ..25. Hourly earnings of employed wage and salary worker.. ,aid hourly rates by class of worker, detailed industry, ex, race, and Hispanic origin, 1998 annual averages-Continued

Total both sexes

Class of worker, industry, sex, race, and Hispanic origin	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $11.99	$12.00 to $14.99	$15.00 to $19.99	$20.00 or more	Under prevailing minimum wage
Total	7,193	5,603	9,718	8,676	8,108	5,742	2,834
Private sector	6,524	4,989	8,463	7,283	6,576	4,631	2,671
Goods-producing industries	1,931	1,806	3,135	3,096	2,856	1,874	320
Agriculture	127	81	111	53	35	9	75
Agricultural services	72	52	78	36	25	5	27
Other agriculture	55	29	33	17	10	4	48
Mining	24	29	50	68	85	44	5
Construction	430	345	749	700	764	695	57
Manufacturing	1,351	1,351	2,224	2,275	1,971	1,125	183
Durable goods	792	790	1,399	1,509	1,328	794	78
Lumber and wood products except furniture	74	74	107	79	44	20	11
Furniture and fixtures	67	75	96	66	30	14	5
Stone, clay, glass, and concrete products	52	46	74	97	67	20	3
Metal industries	141	138	292	328	276	98	14
Primary metals	35	37	105	143	128	41	5
Fabricated metals	106	99	187	184	147	57	9
Not specified metals	-	2	1	1	1	-	-
Machinery and computing equipment	141	137	282	294	307	134	12
Electrical machinery, equipment, and supplies	120	111	179	250	180	120	9
Transportation equipment	108	124	231	279	310	326	6
Motor vehicles and equipment	77	77	153	148	177	194	6
Other transportation equipment	31	47	77	131	133	132	0
Aircraft and parts	16	19	32	58	70	85	-
Other transportation equipment	15	28	45	73	63	47	0
Professional and photographic equipment, watches	42	31	85	75	74	50	6
Toys, amusement, and sporting goods	13	11	12	7	6	1	1
Miscellaneous manufacturing industries	34	43	43	32	34	10	11
Nondurable goods	558	561	825	766	643	331	105
Food and kindred products	138	147	185	190	112	34	16
Tobacco manufactures	5	2	7	3	1	13	-
Textile mill products	73	75	84	41	21	8	7
Apparel and other finished textile products	62	50	45	25	20	9	45
Paper and allied products	37	46	88	99	105	47	8
Printing, publishing, and allied industries	100	101	139	166	119	74	16
Chemicals and allied products	45	50	111	110	149	92	5
Petroleum and coal products	4	4	6	21	23	20	3
Rubber and misc. plastic products	91	79	148	101	91	31	6
Leather and leather products	4	6	13	8	3	1	1

Table A-25. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages-Continued

Total both sexes

Class of worker, industry, sex, race, and Hispanic origin	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $11.99	$12.00 to $14.99	$15.00 to $19.99	$20.00 or more	Under prevailing minimum wage
Private sector							
Service-producing industries	4,592	3,183	5,328	4,187	3,719	2,757	2,351
Transportation, communication, and other public utilities	402	343	610	608	803	613	48
Transportation	286	246	418	382	437	256	36
Communication and public utilities	116	97	191	226	365	357	12
Communications	91	72	134	124	209	142	8
Utilities and sanitary services	25	25	58	103	156	215	4
Wholesale and retail trade	1,647	1,115	1,564	1,124	712	280	1,594
Wholesale trade	283	218	380	364	219	63	38
Retail trade	1,364	898	1,184	761	493	217	1,557
Finance, insurance, and real estate	439	336	627	443	261	141	36
Banking and other finance	234	186	316	207	115	62	10
Insurance and real estate	205	150	311	236	145	79	26
Services	2,105	1,388	2,528	2,011	1,943	1,723	673
Private households	57	19	65	30	11	8	103
Miscellaneous services	2,047	1,369	2,462	1,982	1,932	1,716	569
Business, automobile, and repair services	569	322	565	416	342	263	115
Business services	446	240	401	278	241	214	83
Automobile and repair services	123	82	164	139	102	49	31
Personal services, except private households	216	104	151	85	52	39	124
Entertainment and recreational services	125	59	118	58	56	54	96
Professional and related services	1,136	883	1,624	1,420	1,479	1,358	233
Hospitals	256	234	489	482	694	707	21
Health services, except hospitals	445	367	568	459	390	289	62
Educational services	116	70	123	97	91	81	47
Social services	160	98	127	84	59	53	61
Other professional services	159	114	316	298	244	228	43
Forestry and fisheries	2	0	4	1	2	1	1
Private sector nonagricultural goods and services	6,397	4,908	8,352	7,230	6,540	4,622	2,596
Public sector	669	614	1,255	1,392	1,532	1,111	163
Federal government	83	105	245	372	569	304	18

Table A-25. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages-Continued

Total both sexes

Class of worker, industry, sex, race, and Hispanic origin	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $11.99	$12.00 to $14.99	$15.00 to $19.99	$20.00 or more	Under prevailing minimum wage
Public administration	32	42	101	159	182	208	5
U.S. Postal service	23	32	89	159	304	32	7
Other	28	30	56	54	83	63	6
State government	150	152	304	313	292	265	55
Public administration	43	63	136	147	134	133	9
Other	108	89	167	165	158	132	46
Local government	435	357	706	708	670	542	90
Public administration	113	106	189	266	267	213	14
Educational services	215	147	327	215	154	156	44
Other	106	105	190	227	250	173	32
Total public administration	188	211	426	573	583	554	28

Table A-25. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages-Continued

Total both sexes

Class of worker, industry, sex, race, and Hispanic origin	At prevailing minimum wage	Median	Standard error	Mean	Standard error
Total	1,593	$9.10	$0.03	$10.82	$0.02
Private sector	1,471	8.90	.03	10.55	.02
Goods-producing industries	177	10.36	.11	11.91	.04
Agriculture	43	6.95	.11	7.83	.11
Agricultural services	12	7.71	.36	8.43	.14
Other agriculture	32	6.91	.32	7.26	.18
Mining	1	12.42	.95	13.55	.35
Construction	17	11.56	.39	13.19	.09
Manufacturing	116	10.44	.14	11.80	.05
Durable goods	35	10.98	.11	12.27	.06
Lumber and wood products except furniture	4	9.20	.22	10.07	.15
Furniture and fixtures	5	9.14	.17	10.02	.16
Stone, clay, glass, and concrete products	3	10.76	.58	11.50	.20
Metal industries	3	11.12	.21	12.03	.12
Primary metals	-	12.51	.60	12.94	.21
Fabricated metals	3	10.50	.49	11.54	.14
Not specified metals	-	8.74	14.71	9.37	1.06
Machinery and computing equipment	3	11.57	.32	12.53	.12
Electrical machinery, equipment, and supplies	3	11.07	.41	12.36	.16
Transportation equipment	6	13.07	.33	14.39	.16
Motor vehicles and equipment	3	12.56	.88	13.98	.19
Other transportation equipment	2	13.74	.55	15.01	.27
Aircraft and parts	2	14.48	1.54	15.86	.38
Other transportation equipment	-	12.86	.64	14.13	.38
Professional and photographic equipment, watches	1	11.15	.34	13.07	.39
Toys, amusement, and sporting goods	2	8.17	.58	8.95	.31
Miscellaneous manufacturing industries	7	8.91	.32	9.82	.22
Nondurable goods	81	9.83	.09	11.04	.07
Food and kindred products	20	9.33	.26	10.28	.12
Tobacco manufactures	-	11.12	6.11	16.09	1.71
Textile mill products	3	9.03	.20	9.75	.24
Apparel and other finished textile products	34	7.10	.22	7.95	.13
Paper and allied products	1	11.95	.38	12.82	.21
Printing, publishing, and allied industries	14	10.04	.22	11.49	.17
Chemicals and allied products	2	12.01	.32	13.16	.20
Petroleum and coal products	1	14.53	1.61	14.91	.57
Rubber and misc. plastic products	5	9.98	.20	11.04	.17
Leather and leather products	-	8.48	2.65	9.25	.42

Table A-25. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages-Continued

Total both sexes

Class of worker, industry, sex, race, and Hispanic origin	At prevailing minimum wage	Median	Standard error	Mean	Standard error
Private sector					
Service-producing industries	1,294	$8.12	$0.03	$9.95	$0.03
Transportation, communication, and other public utilities	36	11.72	.27	13.46	.12
Transportation	25	10.52	.39	12.63	.16
Communication and public utilities	11	13.89	.41	14.84	.16
Communications	10	12.12	.37	13.49	.19
Utilities and sanitary services	2	16.26	.99	16.76	.27
Wholesale and retail trade	807	6.80	.04	7.92	.03
Wholesale trade	30	9.33	.27	10.25	.09
Retail trade	777	6.52	.05	7.59	.03
Finance, insurance, and real estate	24	9.75	.16	10.69	.09
Banking and other finance	6	9.63	.30	10.64	.13
Insurance and real estate	18	9.80	.13	10.74	.12
Services	427	8.87	.07	10.93	.05
Private households	17	6.78	.30	7.54	.17
Miscellaneous services	410	8.93	.07	11.02	.05
Business, automobile, and repair services	75	8.55	.17	10.55	.11
Business services	51	8.36	.18	10.56	.13
Automobile and repair services	24	9.04	.23	10.52	.20
Personal services, except private households	82	6.92	.09	7.89	.09
Entertainment and recreational services	64	6.72	.15	8.33	.14
Professional and related services	188	9.93	.07	11.99	.06
Hospitals	16	12.89	.28	14.41	.11
Health services, except hospitals	62	9.14	.11	10.98	.10
Educational services	36	8.13	.18	10.54	.23
Social services	56	7.31	.20	8.77	.14
Other professional services	19	10.68	.38	12.83	.19
Forestry and fisheries	0	8.90	1.47	10.07	1.07
Private sector nonagricultural goods and services	1,428	8.95	.03	10.60	.02
Public sector	122	11.16	.15	12.81	.07
Federal government	10	14.06	.25	14.82	.14

Table A-25. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages-Continued

Total both sexes

Class of worker, industry, sex, race, and Hispanic origin	At prevailing minimum wage	Median	Standard error	Mean	Standard error
Public administration	2	$14.60	$0.76	$16.21	$0.25
U.S. Postal service	2	14.78	.42	14.27	.15
Other	6	11.21	1.13	13.06	.30
State government	48	10.32	.34	12.23	.14
Public administration	2	12.19	.37	14.21	.25
Other	45	9.17	.36	11.12	.17
Local government	64	10.44	.24	12.26	.09
Public administration	8	12.39	.48	13.87	.17
Educational services	31	9.38	.37	11.07	.14
Other	26	10.73	.40	12.23	.15
Total public administration	12	12.97	.20	14.60	.13

- Data not available.

Table A .. Hourly earnings of employed wage and salary workers p : hourly rates by class of worker, detailed industry, s race, and Hispanic origin, 1998 annual averages

Men

Class of worker, industry, sex, race, and Hispanic origin	Total employed	Under $3.00	$3.00 to $3.49	$3.50 to $3.99	$4.00 to $4.49	$4.50 to $4.99	$5.00 to $5.49	$5.50 to $5.99	$6.00 to $6.99	$7.00 to $7.99
Total	35,761	188	49	13	112	90	2,064	1,323	3,471	3,342
Private sector	31,838	177	48	13	108	86	1,932	1,247	3,264	3,105
Goods-producing industries	14,123	20	3	-	23	24	314	246	886	1,160
Agriculture	861	4	-	-	6	14	108	94	167	156
Agricultural services	389	1	-	-	2	4	28	27	71	68
Other agriculture	472	3	-	-	4	10	80	67	96	88
Mining	318	1	-	-	-	-	5	4	10	22
Construction	4,100	8	1	-	5	4	65	37	224	305
Manufacturing	8,844	7	1	-	11	6	137	112	484	677
Durable goods	5,779	5	-	-	9	3	70	61	289	423
Lumber and wood products except furniture	457	1	-	-	1	-	14	14	45	57
Furniture and fixtures	327	-	-	-	1	-	8	4	25	38
Stone, clay, glass, and concrete products	347	1	-	-	1	-	7	4	19	23
Metal industries	1,199	2	-	-	2	2	8	17	59	78
Primary metals	469	1	-	-	-	1	1	5	11	20
Fabricated metals	721	1	-	-	2	2	7	12	45	56
Not specified metals	9	-	-	-	-	-	-	-	3	2
Machinery and computing equipment	1,171	-	-	-	3	-	6	13	42	82
Electrical machinery, equipment, and supplies	642	1	-	-	1	-	10	4	26	34
Transportation equipment	1,188	-	-	-	-	1	3	1	40	63
Motor vehicles and equipment	707	-	-	-	-	1	2	1	20	43
Other transportation equipment	481	-	-	-	-	-	1	-	20	21
Aircraft and parts	240	-	-	-	-	-	1	-	9	8
Other transportation equipment	241	-	-	-	-	-	-	-	11	13
Professional and photographic equipment, watches	223	-	-	-	1	-	-	1	10	16
Toys, amusement, and sporting goods	41	0	-	-	-	0	3	1	9	5
Miscellaneous manufacturing industries	184	-	-	-	-	-	10	3	15	26
Nondurable goods	3,065	2	1	-	2	2	67	51	195	254
Food and kindred products	761	2	1	-	0	1	22	21	53	90
Tobacco manufactures	23	-	-	-	-	-	-	-	-	2
Textile mill products	228	-	-	-	-	-	0	2	20	22
Apparel and other finished textile products	148	-	-	-	1	1	15	7	22	22
Paper and allied products	358	-	-	-	-	-	4	1	12	17
Printing, publishing, and allied industries	522	0	-	-	1	1	13	9	31	35
Chemicals and allied products	448	1	-	-	-	-	3	6	18	20
Petroleum and coal products	74	-	-	-	1	-	3	-	1	3
Rubber and misc. plastic products	467	-	1	-	-	0	7	5	26	40
Leather and leather products	37	-	-	-	-	-	-	-	12	3
Service-producing industries	17,715	157	45	13	85	62	1,618	1,001	2,377	1,945

Table A-25. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages-Continued

Men

Class of worker, industry, sex, race, and Hispanic origin	Total employed	Under $3.00	$3.00 to $3.49	$3.50 to $3.99	$4.00 to $4.49	$4.50 to $4.99	$5.00 to $5.49	$5.50 to $5.99	$6.00 to $6.99	$7.00 to $7.99
Private sector										
Transportation, communication, and other public utilities	2,859	7	1	-	0	4	59	42	127	195
Transportation	1,869	5	1	-	0	4	48	36	108	149
Communication and public utilities	989	2	-	-	-	-	11	6	19	45
Communications	492	-	-	-	-	-	6	2	12	29
Utilities and sanitary services	497	2	-	-	-	-	5	4	7	16
Wholesale and retail trade	8,054	109	37	11	56	41	1,109	679	1,445	960
Wholesale trade	1,432	3	1	-	5	1	49	50	134	157
Retail trade	6,622	106	36	11	52	40	1,061	630	1,312	803
Finance, insurance, and real estate	792	1	-	-	4	2	27	13	62	75
Banking and other finance	289	-	-	-	-	2	8	1	17	30
Insurance and real estate	503	1	-	-	4	1	19	12	45	45
Services	6,011	40	8	1	25	15	423	266	743	716
Private households	49	1	-	-	3	0	6	4	7	2
Miscellaneous services	5,962	39	8	1	22	14	417	262	736	714
Business, automobile, and repair services	2,390	6	-	1	5	5	153	83	291	308
Business services	1,540	4	-	1	2	3	98	46	196	216
Automobile and repair services	851	2	-	-	3	3	57	37	94	92
Personal services, except private households	630	14	6	-	6	1	55	43	109	99
Entertainment and recreational services	653	6	1	0	4	3	100	57	152	75
Professional and related services	2,271	13	1	-	6	5	107	78	181	230
Hospitals	641	3	-	-	-	-	7	7	31	59
Health services, except hospitals	407	1	-	-	0	3	18	18	58	48
Educational services	352	3	-	-	2	1	37	24	38	36
Social services	229	4	1	-	2	-	27	11	20	43
Other professional services	642	1	-	-	2	1	19	18	34	44
Forestry and fisheries	18	-	-	0	-	-	2	0	4	2
Private sector nonagricultural goods and services	30,977	174	48	13	102	72	1,824	1,153	3,097	2,949
Public sector	3,922	11	1	-	4	3	132	76	207	237
Federal government	1,003	3	-	-	1	-	15	3	18	28
Public administration	390	1	-	-	-	-	6	1	4	9
U.S. Postal service	426	2	-	-	1	-	4	0	7	10
Other	186	0	-	-	-	-	4	2	7	9

Table A-20. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages-Continued

Men

Class of worker, industry, sex, race, and Hispanic origin	Total employed	Under $3.00	$3.00 to $3.49	$3.50 to $3.99	$4.00 to $4.49	$4.50 to $4.99	$5.00 to $5.49	$5.50 to $5.99	$6.00 to $6.99	$7.00 to $7.99
State government	880	2	0	-	-	1	52	32	71	60
Public administration	350	-	0	-	-	-	6	1	10	8
Other	529	2	-	-	-	1	46	31	62	52
Local government	2,040	5	1	-	4	3	65	40	118	149
Public administration	824	1	-	-	-	2	14	7	36	37
Educational services	412	-	1	-	2	-	21	11	35	39
Other	803	4	-	-	2	0	29	23	47	73
Total public administration	1,565	2	0	-	-	2	27	9	50	54

Table A-25. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages-Continued

Men

Class of worker, industry, sex, race, and Hispanic origin	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $11.99	$12.00 to $14.99	$15.00 to $19.99	$20.00 or more	Under prevailing minimum wage
Total	3,284	2,724	4,938	5,089	5,275	3,798	1,039
Private sector	3,061	2,495	4,444	4,393	4,369	3,096	984
Goods-producing industries	1,274	1,205	2,285	2,478	2,499	1,705	187
Agriculture	100	64	78	37	27	7	51
Agricultural services	51	41	49	22	21	3	16
Other agriculture	48	23	29	15	6	3	35
Mining	23	25	46	61	81	41	3
Construction	378	308	678	667	737	683	52
Manufacturing	774	808	1,484	1,714	1,654	974	81
Durable goods	476	508	944	1,163	1,135	693	46
Lumber and wood products except furniture	55	54	89	66	41	20	10
Furniture and fixtures	40	52	67	51	28	13	1
Stone, clay, glass, and concrete products	35	35	59	85	62	20	3
Metal industries	96	95	215	280	252	93	9
Primary metals	28	33	86	127	118	39	3
Fabricated metals	68	62	127	152	132	55	6
Not specified metals	-	1	1	1	1	-	-
Machinery and computing equipment	94	97	205	237	269	124	7
Electrical machinery, equipment, and supplies	48	55	86	152	132	93	6
Transportation equipment	69	80	158	220	269	283	3
Motor vehicles and equipment	46	46	104	118	152	174	3
Other transportation equipment	23	34	55	102	116	109	-
Aircraft and parts	12	15	20	45	61	69	-
Other transportation equipment	11	19	34	57	55	40	-
Professional and photographic equipment, watches	15	10	37	43	54	36	1
Toys, amusement, and sporting goods	6	3	5	6	3	1	1
Miscellaneous manufacturing industries	18	26	29	23	25	9	5
Nondurable goods	298	300	540	551	519	281	34
Food and kindred products	88	96	129	139	92	29	10
Tobacco manufactures	3	1	3	2	1	12	-
Textile mill products	34	36	55	33	18	7	-
Apparel and other finished textile products	21	13	22	11	9	4	10
Paper and allied products	17	31	57	83	90	46	3
Printing, publishing, and allied industries	49	43	82	106	93	60	5
Chemicals and allied products	28	30	79	79	110	76	2
Petroleum and coal products	2	2	4	18	21	19	3
Rubber and misc. plastic products	54	45	101	77	82	28	2
Leather and leather products	3	3	8	5	3	1	-

Table 25. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages-Continued

Men

Class of worker, industry, sex, race, and Hispanic origin	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $11.99	$12.00 to $14.99	$15.00 to $19.99	$20.00 or more	Under prevailing minimum wage
Private sector							
Service-producing industries	1,787	1,290	2,159	1,915	1,870	1,391	797
Transportation, communication, and other public utilities	230	212	410	448	612	512	30
Transportation	170	161	312	303	366	207	27
Communication and public utilities	60	51	98	145	246	306	3
Communications	41	33	64	68	126	111	-
Utilities and sanitary services	19	18	34	78	120	195	3
Wholesale and retail trade	790	593	824	704	505	189	536
Wholesale trade	171	144	245	253	168	54	24
Retail trade	619	449	580	451	337	135	512
Finance, insurance, and real estate	104	79	142	116	89	78	12
Banking and other finance	32	37	50	49	32	32	2
Insurance and real estate	72	42	92	67	58	46	10
Services	663	407	782	646	664	612	218
Private households	11	2	7	3	2	-	7
Miscellaneous services	651	405	775	643	661	612	211
Business, automobile, and repair services	302	178	339	276	245	198	69
Business services	206	110	199	151	154	155	41
Automobile and repair services	95	68	139	125	92	44	28
Personal services, except private households	81	46	69	41	35	25	44
Entertainment and recreational services	65	31	65	28	35	30	40
Professional and related services	202	149	299	297	344	357	57
Hospitals	60	43	86	91	139	115	4
Health services, except hospitals	38	34	51	48	43	47	10
Educational services	37	20	44	32	45	34	15
Social services	28	24	27	13	16	13	14
Other professional services	40	29	91	112	101	148	13
Forestry and fisheries	2	0	3	1	2	1	1
Private sector nonagricultural goods and services	2,961	2,431	4,366	4,356	4,342	3,090	933
Public sector	223	228	494	696	906	702	55
Federal government	33	42	106	191	355	207	8

Table A-25. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages-Continued

Men

Class of worker, industry, sex, race, and Hispanic origin	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $11.99	$12.00 to $14.99	$15.00 to $19.99	$20.00 or more	Under prevailing minimum wage
Public administration	10	14	37	68	97	142	2
U.S. Postal service	15	18	41	96	209	23	4
Other	8	10	28	27	49	42	1
State government	48	54	121	144	140	153	20
Public administration	18	21	59	72	67	87	4
Other	30	33	62	72	72	66	17
Local government	142	132	267	362	412	343	27
Public administration	52	53	94	153	194	182	7
Educational services	37	30	69	62	55	51	6
Other	53	49	104	147	163	110	14
Total public administration	81	88	190	293	358	411	13

Table A-25. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages-Continued

Men

Class of worker, industry, sex, race, and Hispanic origin	At prevailing minimum wage	Median	Standard error	Mean	Standard error
Total	628	$10.06	$0.04	$11.84	$0.03
Private sector	586	9.88	.04	11.53	.04
Goods-producing industries	89	11.25	.14	12.65	.05
Agriculture	34	6.95	.12	7.79	.13
Agricultural services	7	7.68	.45	8.38	.15
Other agriculture	27	6.37	.41	7.31	.21
Mining	1	12.74	.83	13.76	.37
Construction	15	11.85	.13	13.39	.09
Manufacturing	38	11.72	.15	12.75	.06
Durable goods	15	11.96	.11	13.03	.07
Lumber and wood products except furniture	2	9.47	.59	10.33	.18
Furniture and fixtures	1	9.66	.49	10.62	.21
Stone, clay, glass, and concrete products	2	11.37	1.17	12.02	.24
Metal industries	2	11.96	.21	12.63	.14
Primary metals	-	12.96	.41	13.36	.23
Fabricated metals	2	11.18	.40	12.18	.18
Not specified metals	-	7.68	1.57	9.93	1.34
Machinery and computing equipment	0	12.13	.24	13.11	.14
Electrical machinery, equipment, and supplies	2	12.82	.34	13.81	.24
Transportation equipment	-	14.03	.40	15.09	.18
Motor vehicles and equipment	-	13.84	.58	14.82	.22
Other transportation equipment	-	14.25	.66	15.49	.29
Aircraft and parts	-	15.36	1.48	16.51	.43
Other transportation equipment	-	13.38	.81	14.48	.38
Professional and photographic equipment, watches	-	13.14	.68	14.80	.55
Toys, amusement, and sporting goods	1	8.36	1.37	9.43	.53
Miscellaneous manufacturing industries	4	9.75	.40	10.70	.31
Nondurable goods	24	11.05	.17	12.21	.09
Food and kindred products	7	9.95	.22	10.96	.17
Tobacco manufactures	-	19.80	.84	18.74	2.44
Textile mill products	0	9.82	.39	10.52	.22
Apparel and other finished textile products	3	8.05	.45	8.96	.28
Paper and allied products	1	13.11	.59	13.80	.24
Printing, publishing, and allied industries	6	11.78	.45	12.83	.25
Chemicals and allied products	1	13.21	.94	14.06	.24
Petroleum and coal products	1	15.06	.77	15.58	.63
Rubber and misc. plastic products	3	10.68	.51	11.75	.19
Leather and leather products	-	9.04	.89	9.65	.60

Table A-25. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages-Continued

Men

Class of worker, industry, sex, race, and Hispanic origin	At prevailing minimum wage	Median	Standard error	Mean	Standard error
Private sector					
Service-producing industries	498	$8.64	$0.10	$10.63	$0.05
Transportation, communication, and other public utilities	22	12.40	.40	14.19	.15
Transportation	15	11.22	.33	13.17	.20
Communication and public utilities	7	15.40	.82	16.13	.21
Communications	5	13.99	.94	14.70	.25
Utilities and sanitary services	2	17.12	.53	17.54	.31
Wholesale and retail trade	333	7.23	.09	8.63	.05
Wholesale trade	18	9.80	.17	10.69	.12
Retail trade	315	6.87	.07	8.18	.05
Finance, insurance, and real estate	9	9.99	.20	11.92	.24
Banking and other finance	3	10.12	.28	12.52	.44
Insurance and real estate	6	9.90	.28	11.57	.28
Services	133	8.99	.12	11.46	.10
Private households	2	7.79	.29	7.80	.39
Miscellaneous services	131	9.01	.12	11.49	.10
Business, automobile, and repair services	49	8.97	.16	11.14	.15
Business services	31	8.82	.24	11.41	.20
Automobile and repair services	18	9.19	.37	10.65	.22
Personal services, except private households	16	7.57	.43	8.83	.18
Entertainment and recreational services	29	6.87	.20	8.72	.21
Professional and related services	37	10.48	.45	13.41	.19
Hospitals	3	12.48	.99	14.37	.32
Health services, except hospitals	6	9.22	.56	12.13	.44
Educational services	10	8.75	.75	11.22	.40
Social services	13	8.07	.46	9.93	.48
Other professional services	6	12.47	.71	15.69	.42
Forestry and fisheries	0	9.06	1.36	10.31	1.16
Private sector nonagricultural goods and services	552	9.96	.04	11.63	.04
Public sector	42	13.06	.19	14.37	.11
Federal government	3	15.39	.73	16.25	.20

Table A-25. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages-Continued

Men

Class of worker, industry, sex, race, and Hispanic origin	At prevailing minimum wage	Median	Standard error	Mean	Standard error
Public administration	2	$16.33	$1.07	$18.36	$0.40
U.S. Postal service	2	15.08	.26	14.66	.19
Other	-	14.77	.98	15.45	.49
State government	13	11.74	.97	13.50	.25
Public administration	1	13.89	.49	15.86	.42
Other	12	9.88	.28	11.94	.30
Local government	25	12.31	.34	13.82	.14
Public administration	4	14.02	.44	15.25	.24
Educational services	9	10.67	.70	12.45	.33
Other	13	11.99	.34	13.06	.20
Total public administration	6	14.69	.45	16.16	.19

- Data not available.

Table A-25. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages

Women

Class of worker, industry, sex, race, and Hispanic origin	Total employed	Under $3.00	$3.00 to $3.49	$3.50 to $3.99	$4.00 to $4.49	$4.50 to $4.99	$5.00 to $5.49	$5.50 to $5.99	$6.00 to $6.99	$7.00 to $7.99
Total	35,680	519	110	40	144	144	3,126	2,158	5,081	4,427
Private sector	30,958	505	107	38	134	137	2,874	2,003	4,615	3,936
Goods-producing industries	5,056	10	1	1	12	16	281	215	586	683
Agriculture	272	2	-	-	3	5	38	33	47	39
Agricultural services	161	-	-	-	1	4	18	19	17	22
Other agriculture	111	2	-	-	2	1	21	14	30	17
Mining	36	-	-	-	-	-	2	-	3	5
Construction	299	2	-	-	-	-	6	6	18	36
Manufacturing	4,449	7	1	1	8	11	235	176	518	603
Durable goods	2,375	6	-	-	3	2	75	70	227	297
Lumber and wood products except furniture	114	-	-	-	-	1	3	9	11	17
Furniture and fixtures	160	0	-	-	-	-	9	3	18	33
Stone, clay, glass, and concrete products	91	-	-	-	-	-	2	3	8	13
Metal industries	341	1	-	-	1	-	9	10	37	39
Primary metals	82	1	-	-	-	-	2	2	10	8
Fabricated metals	256	-	-	-	1	-	7	7	26	31
Not specified metals	3	-	-	-	-	-	-	-	1	-
Machinery and computing equipment	356	1	-	-	-	1	11	6	24	45
Electrical machinery, equipment, and supplies	544	-	-	-	1	-	11	15	52	71
Transportation equipment	373	0	-	-	1	-	10	6	24	31
Motor vehicles and equipment	233	0	-	-	1	-	8	5	13	19
Other transportation equipment	140	-	-	-	0	-	2	3	11	11
Aircraft and parts	76	-	-	-	-	-	2	3	7	6
Other transportation equipment	64	-	-	-	0	-	-	-	4	5
Professional and photographic equipment, watches	214	4	-	-	-	-	6	4	20	19
Toys, amusement, and sporting goods	51	-	-	-	-	-	2	3	9	11
Miscellaneous manufacturing industries	131	-	-	-	1	0	12	10	23	19
Nondurable goods	2,074	1	1	1	5	9	160	106	291	305
Food and kindred products	427	-	1	-	-	0	30	13	69	79
Tobacco manufactures	13	-	-	-	-	-	-	-	2	-
Textile mill products	195	-	-	-	-	-	15	10	24	26
Apparel and other finished textile products	394	1	-	-	2	6	68	47	70	68
Paper and allied products	132	-	-	-	2	1	3	2	9	14
Printing, publishing, and allied industries	413	-	-	1	0	1	30	13	52	50
Chemicals and allied products	224	0	-	-	-	-	6	12	27	23
Petroleum and coal products	14	-	-	-	-	-	-	-	3	-
Rubber and misc. plastic products	232	-	-	-	1	-	5	5	29	38
Leather and leather products	31	-	-	-	-	-	2	3	6	6
Service-producing industries	25,902	495	106	38	123	121	2,594	1,788	4,029	3,253

Table A-28. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages-Continued

Women

Class of worker, industry, sex, race, and Hispanic origin	Total employed	Under $3.00	$3.00 to $3.49	$3.50 to $3.99	$4.00 to $4.49	$4.50 to $4.99	$5.00 to $5.49	$5.50 to $5.99	$6.00 to $6.99	$7.00 to $7.99
Private sector										
Transportation, communication, and other public utilities	1,254	3	-	1	1	5	35	19	97	139
Transportation	707	1	-	-	1	3	25	12	66	91
Communication and public utilities	546	2	-	1	-	2	10	7	31	48
Communications	407	2	-	1	-	2	9	5	25	35
Utilities and sanitary services	139	-	-	-	-	-	1	2	6	12
Wholesale and retail trade	9,415	407	78	28	76	73	1,591	1,059	2,037	1,228
Wholesale trade	768	4	-	-	1	1	42	30	103	96
Retail trade	8,647	403	78	28	75	73	1,549	1,030	1,934	1,131
Finance, insurance, and real estate	2,229	5	-	1	4	4	47	40	212	279
Banking and other finance	1,184	2	-	-	2	1	16	15	102	158
Insurance and real estate	1,045	4	-	1	2	3	30	25	110	121
Services	13,004	79	28	8	43	38	922	670	1,683	1,608
Private households	439	22	7	1	12	1	87	31	62	50
Miscellaneous services	12,565	57	21	7	31	37	835	639	1,622	1,557
Business, automobile, and repair services	1,630	5	0	-	4	3	92	81	234	270
Business services	1,476	4	0	-	4	2	78	74	220	247
Automobile and repair services	154	0	-	-	-	1	14	7	15	22
Personal services, except private households	1,185	6	13	2	10	11	171	138	270	212
Entertainment and recreational services	649	15	3	1	7	7	110	74	140	76
Professional and related services	9,098	31	4	4	10	16	462	346	976	999
Hospitals	2,736	4	-	-	1	1	39	34	144	183
Health services, except hospitals	3,417	12	1	-	2	5	165	139	411	425
Educational services	689	1	-	1	1	2	75	48	101	91
Social services	1,103	11	2	2	5	3	136	101	218	164
Other professional services	1,153	2	1	1	1	4	46	23	102	135
Forestry and fisheries	3	-	-	-	-	-	-	-	1	1
Private sector nonagricultural goods and services	30,686	503	107	38	131	132	2,836	1,969	4,568	3,897
Public sector	4,722	15	3	2	10	7	252	155	465	491
Federal government	895	2	-	1	1	1	18	16	52	61
Public administration	404	1	-	-	1	-	2	5	14	26
U.S. Postal service	260	1	-	-	-	-	1	4	6	11
Other	231	-	-	1	-	1	15	8	31	24

Table A-25. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages-Continued

Women

Class of worker, industry, sex, race, and Hispanic origin	Total employed	Under $3.00	$3.00 to $3.49	$3.50 to $3.99	$4.00 to $4.49	$4.50 to $4.99	$5.00 to $5.49	$5.50 to $5.99	$6.00 to $6.99	$7.00 to $7.99
State government	1,227	4	-	-	2	2	101	43	135	123
Public administration	404	2	-	-	-	-	9	6	24	30
Other	823	2	-	-	2	2	92	37	110	93
Local government	2,599	8	3	1	7	5	133	96	279	306
Public administration	532	0	-	0	2	0	12	10	33	45
Educational services	1,405	5	2	1	0	3	85	48	162	190
Other	663	3	1	-	5	1	36	37	85	71
Total public administration	1,339	3	-	0	2	0	23	22	71	102

Table ..-25. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages-Continued

Women

Class of worker, industry, sex, race, and Hispanic origin	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $11.99	$12.00 to $14.99	$15.00 to $19.99	$20.00 or more	Under prevailing minimum wage
Total	3,909	2,879	4,780	3,587	2,832	1,944	1,794
Private sector	3,463	2,493	4,019	2,891	2,207	1,535	1,687
Goods-producing industries	657	601	850	618	357	169	133
Agriculture	27	16	33	16	8	2	24
Agricultural services	20	11	29	14	5	2	11
Other agriculture	7	6	5	2	4	1	13
Mining	2	4	5	8	4	4	1
Construction	51	37	71	33	27	12	5
Manufacturing	577	543	741	561	317	151	103
Durable goods	316	283	455	346	192	101	32
Lumber and wood products except furniture	19	20	18	13	3	1	1
Furniture and fixtures	26	22	30	15	2	1	3
Stone, clay, glass, and concrete products	17	10	20	12	4	1	1
Metal industries	45	43	78	48	25	5	5
Primary metals	7	4	18	16	10	2	1
Fabricated metals	38	37	59	32	15	3	4
Not specified metals	-	1	0	-	-	-	-
Machinery and computing equipment	47	40	77	57	38	10	5
Electrical machinery, equipment, and supplies	72	57	93	98	48	27	3
Transportation equipment	39	44	72	60	41	42	3
Motor vehicles and equipment	31	31	49	31	24	20	2
Other transportation equipment	8	13	23	29	17	22	0
Aircraft and parts	4	4	12	13	9	16	-
Other transportation equipment	4	9	11	16	8	6	0
Professional and photographic equipment, watches	27	21	47	32	20	14	5
Toys, amusement, and sporting goods	7	8	7	2	3	-	-
Miscellaneous manufacturing industries	16	17	14	9	9	1	6
Nondurable goods	261	261	285	214	125	50	71
Food and kindred products	50	51	55	52	20	6	6
Tobacco manufactures	3	1	4	2	1	1	-
Textile mill products	39	39	28	9	3	1	7
Apparel and other finished textile products	41	36	23	14	12	5	35
Paper and allied products	20	15	31	17	15	1	5
Printing, publishing, and allied industries	51	58	57	60	26	14	11
Chemicals and allied products	17	20	32	31	39	17	3
Petroleum and coal products	2	1	1	4	2	1	-
Rubber and misc. plastic products	36	35	47	24	9	3	3
Leather and leather products	1	3	6	4	-	1	1

Table A-25. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages-Continued

Women

Class of worker, industry, sex, race, and Hispanic origin	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $11.99	$12.00 to $14.99	$15.00 to $19.99	$20.00 or more	Under prevailing minimum wage
Private sector							
Service-producing industries	2,806	1,893	3,170	2,273	1,849	1,366	1,554
Transportation, communication, and other public utilities	172	132	200	160	191	100	18
Transportation	116	86	107	79	71	49	9
Communication and public utilities	55	46	93	81	120	51	9
Communications	50	39	69	56	83	31	8
Utilities and sanitary services	6	7	23	25	36	20	1
Wholesale and retail trade	857	522	740	420	207	91	1,058
Wholesale trade	112	74	135	110	51	9	14
Retail trade	745	448	605	310	156	82	1,044
Finance, insurance, and real estate	335	257	485	327	172	63	24
Banking and other finance	201	150	266	158	84	30	7
Insurance and real estate	133	108	219	169	88	33	16
Services	1,442	981	1,745	1,365	1,280	1,111	454
Private households	46	17	58	27	9	8	96
Miscellaneous services	1,396	964	1,687	1,338	1,270	1,103	358
Business, automobile, and repair services	267	145	226	141	97	65	46
Business services	240	131	202	127	87	60	42
Automobile and repair services	28	14	25	14	10	5	3
Personal services, except private households	135	58	82	44	17	14	80
Entertainment and recreational services	60	28	53	30	22	24	56
Professional and related services	933	734	1,325	1,123	1,136	1,000	177
Hospitals	197	191	403	391	555	592	17
Health services, except hospitals	407	333	517	411	347	242	52
Educational services	79	50	80	65	47	47	32
Social services	132	74	100	70	44	40	47
Other professional services	118	86	225	187	143	79	30
Forestry and fisheries	-	-	1	0	-	0	-
Private sector nonagricultural goods and services	3,436	2,477	3,986	2,878	2,198	1,533	1,663
Public sector	446	386	760	696	626	409	108
Federal government	50	62	139	181	214	96	10

Table 25. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages-Continued

Women

Class of worker, industry, sex, race, and Hispanic origin	$8.00 to $8.99	$9.00 to $9.99	$10.00 to $11.99	$12.00 to $14.99	$15.00 to $19.99	$20.00 or more	Under prevailing minimum wage
Public administration	22	28	63	91	85	66	3
U.S. Postal service	8	14	48	63	95	10	2
Other	20	20	28	28	34	21	5
State government	102	98	182	169	153	112	34
Public administration	24	42	77	76	67	46	5
Other	78	56	105	93	86	66	29
Local government	293	226	439	346	259	200	63
Public administration	61	53	95	113	73	32	7
Educational services	178	117	258	153	99	105	37
Other	54	55	86	79	87	63	19
Total public administration	108	123	236	280	225	144	15

Table A-25. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages-Continued

Women

Class of worker, industry, sex, race, and Hispanic origin	At prevailing minimum wage	Median	Standard error	Mean	Standard error
Total	965	$8.23	$0.04	$9.80	$0.02
Private sector	885	8.07	.03	9.54	.03
Goods-producing industries	88	8.94	.07	9.84	.05
Agriculture	9	6.95	.23	7.95	.20
Agricultural services	4	7.77	.52	8.56	.29
Other agriculture	5	6.21	.16	7.05	.22
Mining	0	10.95	1.35	11.70	.72
Construction	1	9.63	.60	10.37	.19
Manufacturing	77	8.98	.08	9.91	.06
Durable goods	20	9.45	.18	10.42	.08
Lumber and wood products except furniture	2	8.84	.28	9.02	.21
Furniture and fixtures	3	8.37	.83	8.78	.16
Stone, clay, glass, and concrete products	1	8.99	.43	9.51	.25
Metal industries	1	9.52	.34	9.92	.15
Primary metals	-	10.12	.40	10.57	.36
Fabricated metals	1	9.37	.31	9.73	.16
Not specified metals	-	8.78	.55	7.71	.77
Machinery, and computing equipment	3	9.86	.25	10.61	.19
Electrical machinery, equipment, and supplies	0	9.74	.31	10.65	.16
Transportation equipment	6	10.52	.55	12.16	.28
Motor vehicles and equipment	3	10.07	.34	11.45	.28
Other transportation equipment	2	11.52	1.56	13.35	.58
Aircraft and parts	2	11.93	2.89	13.81	.69
Other transportation equipment	-	11.14	1.10	12.60	.96
Professional and photographic equipment, watches	1	10.01	.30	11.26	.45
Toys, amusement, and sporting goods	1	7.94	1.09	8.57	.32
Miscellaneous manufacturing industries	2	7.77	.48	8.57	.24
Nondurable goods	57	8.43	.18	9.31	.08
Food and kindred products	13	8.24	.33	9.05	.13
Tobacco manufactures	-	10.08	.93	11.50	1.24
Textile mill products	3	8.42	.36	8.85	.39
Apparel and other finished textile products	31	6.82	.19	7.58	.13
Paper and allied products	-	9.85	.33	10.17	.25
Printing, publishing, and allied industries	8	8.98	.22	9.80	.17
Chemicals and allied products	1	10.00	.37	11.37	.29
Petroleum and coal products	-	10.98	1.09	11.30	.89
Rubber and misc. plastic products	1	8.89	.27	9.61	.26
Leather and leather products	-	7.57	.56	8.76	.50

Table A-25. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages-Continued

Women

Class of worker, industry, sex, race, and Hispanic origin	At prevailing minimum wage	Median	Standard error	Mean	Standard error
Private sector					
Service-producing industries	797	$7.92	$0.04	$9.48	$0.03
Transportation, communication, and other public utilities	14	9.92	.15	11.77	.15
Transportation	9	9.12	.18	11.19	.21
Communication and public utilities	5	11.00	.42	12.52	.20
Communications	5	10.44	.77	12.03	.23
Utilities and sanitary services	-	13.07	.46	13.97	.40
Wholesale and retail trade	474	6.45	.05	7.32	.03
Wholesale trade	13	8.75	.27	9.43	.10
Retail trade	462	6.28	.05	7.13	.03
Finance, insurance, and real estate	15	9.54	.26	10.25	.07
Banking and other finance	3	9.35	.31	10.18	.10
Insurance and real estate	12	9.76	.22	10.34	.11
Services	294	8.82	.07	10.68	.05
Private households	15	6.75	.41	7.51	.16
Miscellaneous services	278	8.89	.07	10.79	.05
Business, automobile, and repair services	26	8.13	.09	9.68	.13
Business services	20	8.12	.10	9.67	.13
Automobile and repair services	6	8.26	.52	9.79	.47
Personal services, except private households	67	6.69	.13	7.39	.08
Entertainment and recreational services	35	6.54	.21	7.94	.16
Professional and related services	151	9.83	.07	11.64	.06
Hospitals	13	12.95	.26	14.42	.11
Health services, except hospitals	56	9.13	.11	10.84	.09
Educational services	26	7.99	.19	10.20	.25
Social services	43	7.17	.13	8.52	.12
Other professional services	13	10.04	.12	11.24	.13
Forestry and fisheries	-	7.49	.79	8.68	1.99
Private sector nonagricultural goods and services	876	8.08	.03	9.55	.03
Public sector	80	10.03	.08	11.52	.07
Federal government	7	12.28	.47	13.21	.15

Table A-25. Hourly earnings of employed wage and salary workers paid hourly rates by class of worker, detailed industry, sex, race, and Hispanic origin, 1998 annual averages-Continued

Women

Class of worker, industry, sex, race, and Hispanic origin	At prevailing minimum wage	Median	Standard error	Mean	Standard error
Public administration	0	$12.95	$0.46	$14.13	$0.25
U.S. Postal service	-	13.59	.86	13.63	.22
Other	6	9.53	.84	11.14	.30
State government	34	9.88	.18	11.31	.14
Public administration	2	11.33	.79	12.78	.25
Other	33	8.78	.42	10.60	.17
Local government	39	9.62	.26	11.03	.10
Public administration	4	10.59	.49	11.74	.18
Educational services	22	9.05	.19	10.67	.14
Other	13	9.49	.63	11.23	.19
Total public administration	6	11.59	.46	12.77	.13

- Data not available.

Table A-32. Distribution of wage and salary workers paid hourly rates, by selected characteristics, annual averages 1998

(Numbers in thousands)

Characteristic	Total paid hourly rates	Less than $4.25	$4.25	$4.26 to $5.14	$4.75	$5.00	$5.15	$5.16 to $5.64	$5.65 to $6.14	$6.15 to $6.64	$6.65 to $7.14	$7.15 or more
SEX AND AGE												
Total, 16 years and over	71,440	1,037	88	1,709	106	1,396	1,593	3,987	5,866	3,410	4,833	48,916
16 to 24 years	16,361	468	44	865	60	702	883	2,255	2,682	1,360	1,714	6,090
16 to 19 years	6,482	205	27	557	40	452	558	1,451	1,397	574	599	1,112
20 to 24 years	9,879	263	17	308	20	249	325	804	1,285	785	1,114	4,978
25 years and over	55,080	569	44	844	46	694	710	1,731	3,183	2,051	3,119	42,829
25 to 54 years	47,813	489	36	675	39	548	573	1,384	2,634	1,732	2,605	37,686
25 to 34 years	17,298	267	19	245	21	206	245	603	1,130	664	1,103	13,023
35 to 44 years	18,070	140	13	263	13	208	191	470	924	624	909	14,537
45 to 54 years	12,445	82	5	166	5	134	138	311	580	444	593	10,126
55 years and over	7,266	80	8	169	7	146	137	348	549	319	514	5,143
55 to 64 years	5,660	44	4	95	3	88	70	204	359	212	361	4,311
65 years and over	1,606	36	4	73	4	58	67	144	191	107	153	831
Men, 16 years and over	35,761	303	31	705	45	560	628	1,557	2,466	1,315	2,094	26,661
16 to 24 years	8,411	126	15	395	27	319	400	1,012	1,326	616	896	3,628
16 to 19 years	3,219	60	12	256	14	212	257	668	702	266	327	671
20 to 24 years	5,192	67	3	139	13	107	142	343	624	350	569	2,955
25 years and over	27,349	177	16	310	18	261	228	545	1,140	699	1,198	23,035
Women, 16 years and over	35,680	734	57	1,003	61	815	965	2,430	3,400	2,095	2,738	22,257
16 to 24 years	7,949	342	29	470	33	382	483	1,243	1,356	744	818	2,463
16 to 19 years	3,263	146	15	301	26	240	301	783	695	308	273	441
20 to 24 years	4,686	196	14	169	7	142	183	461	661	436	545	2,022
25 years and over	27,730	392	28	533	28	433	482	1,186	2,043	1,351	1,921	19,794
RACE AND HISPANIC ORIGIN												
White												
Total, 16 years and over	58,512	932	59	1,300	84	1,068	1,269	3,224	4,665	2,737	3,800	40,527
Men	29,700	266	21	540	35	451	498	1,280	2,007	1,065	1,675	22,348
Women	28,812	665	38	760	49	617	770	1,944	2,658	1,671	2,125	18,179
Black												
Total, 16 years and over	9,773	68	28	334	18	268	274	592	881	530	617	6,248
Men	4,492	20	10	136	8	107	106	215	319	186	330	3,170
Women	5,281	48	18	198	10	162	167	377	562	344	488	3,079
Hispanic origin												
Total, 16 years and over	9,065	92	12	290	28	247	276	602	1,195	570	779	5,250

See footnotes at end of table.

Table A-32. Distribution of wage and salary workers paid hourly rates, by selected characteristics, annual averages 1998

(Numbers in thousands) — Continued

Characteristic	Total paid hourly rates	Less than $4.25	$4.25	$4.26 to $5.14	$4.75	$5.00	$5.15	$5.16 to $5.64	$5.65 to $6.14	$6.15 to $6.64	$6.65 to $7.14	$7.15 or more
Hispanic origin												
Men	5,414	41	4	155	15	129	126	283	633	300	445	3,429
Women	3,651	51	8	135	11	118	150	319	562	270	334	1,822
FULL- AND PART-TIME STATUS AND SEX												
Full-time workers												
Total, 16 years and over	54,093	420	39	738	53	587	596	1,536	3,105	2,167	3,384	42,108
Men	30,315	160	12	343	26	278	249	628	1,460	927	1,633	24,903
Women	23,778	260	27	396	26	309	347	909	1,644	1,241	1,751	17,205
Part-time workers												
Total, 16 years and over	17,198	613	49	966	51	807	993	2,439	2,755	1,238	1,439	6,707
Men	5,367	141	19	360	17	302	376	927	1,002	385	458	1,698
Women	11,831	472	30	605	34	504	617	1,512	1,753	852	981	5,009
FAMILY RELATIONSHIP												
Husbands	17,634	68	4	151	11	121	133	284	629	386	644	15,334
Wives	16,887	209	16	276	12	223	280	655	1,188	644	1,156	12,261
Women who maintain families	5,167	99	6	142	9	114	132	336	535	313	437	3,187
Men who maintain families	1,833	11	–	38	3	31	28	52	113	73	115	1,402
Other persons in families:												
Men	8,443	119	17	365	20	308	359	947	1,202	548	830	4,056
Women	7,054	240	26	420	33	337	391	1,066	1,125	567	676	2,543
All other men [1]	7,851	105	10	151	10	121	108	273	522	308	505	5,868
All other women [1]	6,552	188	8	165	7	142	162	373	551	372	468	4,267

[1] The majority of these persons are living alone or with a non-relative.

– Data not available.

NOTE: Data exclude the incorporated self employed. Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" group are not presented and Hispanics are included in both the white and black population groups. Also note that the distinction between full and part-time workers is based on hours usually worked. These data will not sum to totals because full or part-time status on the principal job is not identifiable for a small number of multiple jobholders.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, unpublished tabulations from the Current Population Survey, 1998.

Experimental Consumer Price Index for Americans 62 Years of Age and Older, 1993-97

Introduction

The Consumer Price Index (CPI) measures the average change in prices over time for consumer goods and services for two population groups: the CPI for All Urban Consumers (CPI-U) and the CPI for Urban Wage Earners and Clerical Workers (CPI-W). The CPI-U represents the spending habits of about 87 percent of the population of the United States, and the CPI-W, a subset of the CPI-U population, represents about 32 percent.

The CPI also calculates an experimental price index (CPI-E) for Americans 62 years of age or older. BLS plans to update these CPI-E data every other year in the *CPI Detailed Report*.[1] This article reviews price changes from December 1992 through December 1997 in the experimental CPI-E. It also reiterates the methods, sources of data, and limitations of the experimental index described in earlier articles.[2] Over the 5-year period from December 1992 through December 1997, the experimental CPI-E rose 14.6 percent. This compares to increases of 13.7 and 13.2 percent for the CPI-U and CPI-W, respectively.

Methodology, sources of data, and limitations

Although this study indicates a higher overall inflation rate for older Americans—compared to the two official CPI population groups—any conclusion should be used cautiously due to limitations inherent in the methodology.

Expenditure weights. For each CPI population group, these area/item strata are weighted according to their importance in the spending patterns of the respective population. The definition of the population of older Americans used for the experimental price index is all urban noninstitutionalized consumer units that meet one of the following three conditions:

- Unattached individuals who were at least 62 years of age
- Members of families whose reference person (as defined in the Consumer Expenditure Survey) or spouse is at least 62 years of age
- Members of groups of unrelated individuals living together who pool their resources to meet living expenses, and whose reference person is at least 62 years of age.

In the 1982-84 Consumer Expenditure Survey (used as the source of expenditure weights in the CPI over this period), 19 percent of the total sample of urban and rural consumer units (3,135 out of 16,500) met the above definition for older Americans. Expenditure weights used in the experimental price index (CPI-E) have a higher sampling error than those used for the larger CPI populations. This is because the number of consumer units used for determining weights in the experimental index was relatively small.

For each population group, the base expenditure weight of any component represents the actual expenditure on that

Table 1. CPI relative importance data of selected expenditure groups, December 1997.

Expenditure group	Population		
	CPI-U	CPI-W	CPI-E
All items	100.00	100.00	100.00
Food and beverages	17.47	19.43	15.09
Food at home	9.96	11.31	9.73
Food away from home	5.92	6.43	4.25
Alcoholic beverages	1.58	1.70	1.11
Housing	41.47	39.04	47.04
Shelter	28.64	26.31	34.24
Rent	5.81	6.69	4.17
Owners' equivalent rent	19.88	17.54	25.77
Apparel and upkeep	5.29	5.31	3.76
Transportation	16.62	18.60	13.64
Medical care	7.43	6.33	12.17
Medical care commodities	1.28	1.05	2.57
Medical care services	6.15	5.28	9.59
Health insurance	.32	.22	.98
Entertainment	4.34	4.01	3.28
Other goods and services	7.39	7.29	5.02
College tuition	1.69	1.25	.62
Tobacco/ smoking products	1.69	2.24	1.33

[1] The Experimental Price Index for the Elderly (CPI-E) is updated monthly. Data is available by calling (202) 606-7000.

[2] A May 1994 *Monthly Labor Review* article by Nathan Amble and Kenneth J. Stewart, "Experimental Price Index for Elderly Consumers," provides estimates of the series for all items and major CPI expenditure components from December 1982 through December 1993.

NOTE: This article will be updated biannually in the *CPI Detailed Report*. The text and tables for this article were updated by Kenneth J. Stewart, Peter Haro, and Sharon Gibson.

component in the base period. The "relative importance" of any component is its base expenditure weight updated for changes in relative prices expressed as a percent of the total updated expenditures for the population. The relative importance data for each of the three population groups for December 1997 are shown in table 1.

Areas and outlets priced. The CPI-E is a weighted average of price changes for the same set of strata, and collected from the same sample of urban areas, used in calculating the CPI-U and CPI-W. Because strata are defined by metropolitan area, as well as item category, the CPI-E reflects the general geographic distribution of the elderly population.

Retail outlets are selected for the CPI based on data reported in a separate survey representing all urban households. The experimental index also uses this same retail outlet sample. Outlets thus selected may not be representative of the places of purchase (for example, type of store or distribution within metropolitan areas) of the older populations.

Items priced. One major limitation of the CPI-E is that the items priced within selected outlets are determined with probabilities proportionate to total (not elderly) expenditures. As a result, specific items selected for pricing in each outlet may not be representative of the older population.

Prices collected. A final source of uncertainty about the appropriateness of using the CPI-U prices for the CPI-E concerns the availability of discount prices for older Americans. For example, senior-citizen discount rates are used in the CPI in proportion to their use by the urban population as a whole. To the extent that senior-citizen discounts take the form of a fixed percentage discount from the regular price, this may not be a problem. If, however, the discount is not expressed as a percentage of the price, or if that percentage is periodically adjusted, the scarcity of collected senior-citizen discount prices in the current CPI could lead to error in the experimental index.

Because of the above limitations, conclusions drawn from these analyses should be treated as tentative.

Relative behavior of price indexes

Tables 2 and 3 show the behavior of the CPI-U, CPI-W, and CPI-E for selected expenditure categories for the period December 1992 through December 1997. Over this 5-year period, the reweighted experimental price index for older Americans (CPI-E) rose 14.6 percent. This compares with increases of 13.7 percent for the CPI-U and 13.2 percent for the CPI-W. The relative importance data for the CPI-E and the CPI-U and CPI-W populations show that older Americans devote a substantially larger share of their total budgets to medical care. (See table 2.) In addition, for each population group, medical care prices rose significantly more rapidly than the overall (all items) index during this 5-year period. For this reason, the medical care component accounts for a large portion of the difference between the higher rate of increase measured for the CPI-E, relative to the two official population groups.

Price change for each major expenditure group varied by population because the distribution of expenditures on the products and services within the major groups varied among the three index populations. For example, within housing, the weight for owner-occupied shelter is higher for the elderly than for the CPI-U and CPI-W populations. This is be-

Table 2. Percent changes for CPI population groups, 1993 - 1997, for all items and major expenditure groups. (Changes are December to December.)

Year	Population	All items	Food and beverages	Housing	Apparel and upkeep	Transportation	Medical care	Entertainment	Other goods and services
1993	CPI-U	2.7	2.7	2.7	0.9	2.4	5.4	2.8	2.7
1993	CPI-W	2.5	2.7	2.6	.7	2.0	5.2	2.7	1.6
1993	CPI-E	3.1	3.0	2.8	1.5	2.6	5.7	3.2	2.2
1994	CPI-U	2.7	2.7	2.2	-1.6	3.8	4.9	2.3	4.2
1994	CPI-W	2.7	2.6	2.1	-1.5	4.5	4.9	2.1	4.2
1994	CPI-E	2.7	3.2	2.2	-2.2	2.8	5.4	2.6	4.0
1995	CPI-U	2.5	2.1	3.0	.2	1.5	3.9	3.3	4.3
1995	CPI-W	2.5	2.2	2.8	.2	1.6	4.0	3.1	4.1
1995	CPI-E	2.8	2.0	3.2	.1	1.4	3.8	3.7	4.2
1996	CPI-U	3.3	4.2	2.9	-.2	4.4	3.0	2.9	3.6
1996	CPI-W	3.3	4.2	2.9	-.2	4.2	3.1	3.0	3.4
1996	CPI-E	3.4	4.4	3.1	-.7	5.1	2.7	2.2	3.4
1997	CPI-U	1.7	1.6	2.4	1.0	-1.4	2.8	1.4	5.2
1997	CPI-W	1.5	1.5	2.3	.8	-1.7	2.8	1.3	5.4
1997	CPI-E	1.8	1.5	2.5	1.5	-1.1	2.7	1.0	5.1

Table 3. Percent changes in the CPI-U, CPI-W, and CPI-E by major expenditure group, December 1992 - December 1997.

Expenditure group	Population		
	CPI-U	CPI-W	CPI-E
All items	13.7	13.2	14.6
Food and beverages	14.1	13.9	15.0
Food at home	15.8	15.5	16.7
Food away from home	12.3	12.3	12.3
Alcoholic beverages	10.7	10.4	10.6
Housing	13.9	13.4	14.6
Shelter	16.8	16.4	17.0
Rent	13.8	13.9	13.4
Owners' equivalent rent	17.0	17.0	17.0
Apparel and upkeep	.2	-.1	.2
Transportation	11.0	11.1	11.2
Medical care[1]	21.8	21.7	22.1
Medical care commodities	13.4	13.0	14.2
Medical care services	23.6	23.6	24.4
Entertainment	13.4	12.8	13.2
Other goods and services	21.7	20.1	20.3
College tuition and fees	33.7	34.5	31.7
Tobacco/ smoking products	9.7	9.6	10.7

[1] Health insurance indexes are not published; thus, no price change is presented.

cause a higher proportion of elderly own homes than those in the other population groups. The weight for rent, on the other hand, is smaller for the CPI-E population.

Although, as noted above, the medical care component accounts for a significant amount of the difference in overall trends between the CPI-E and the other indexes in table 3, this is not true every year. Table 2 shows, for example, that medical care components increased approximately the same as the overall indexes during 1996. Therefore, medical care did not explain the slightly higher rate of growth of the CPI-E than of the CPI-U or CPI-W. (During 1996 and 1997, major contributors to this difference included energy, shelter, and used car prices.)

The CPI and its relationship to Social Security benefits

Adjustments to Social Security benefits are currently based on the percent change in the CPI-W, measured from the average of the third quarter of one year to the third quarter of the succeeding year.

While the population covered for this study includes persons 62 years of age and older, it is important to note that it differs in many ways from the population receiving Social Security benefits.

First, many Social Security beneficiaries are younger than 62 years of age. They receive benefits because they are surviving spouses or minor children of covered workers or because of disability. Spending patterns of this younger group are excluded in the weights for the experimental index for older Americans. Second, a substantial number of persons 62 years of age and older do not receive Social Security benefits, especially those 62-64 years of age. Although these older consumers are included in the CPI-E, they would be excluded from an index specifically defined to reflect the experience of Social Security recipients.

In short, an index designed specifically to measure price change for Social Security beneficiaries (i.e., one that excludes older people not receiving benefits, but includes younger persons receiving survival or disability benefits) might show price movements that differ significantly from those of the experimental index in this study.

Conclusions

This report summarizes the change in the prices for the period December 1992 through December 1997 of three population groups: the CPI-U, the CPI-W, and the CPI-E (the experimental price index for Americans 62 years of age or older). During this period, the CPI-E increased at a slightly higher rate than either of the two official populations.

The CPI-E, reweighted to incorporate the spending patterns of older consumers, behaved more like the CPI-U than the CPI-W. This was expected because the CPI-U includes the expenditures of all urban consumers, including those 62 years of age and over. The CPI-W, however, is limited to the spending patterns of wage-earner and clerical families and, therefore, specifically excludes the experience of families whose primary source of income is from retirement pensions.

Finally, the medical care component of the CPI has a substantially larger relative weight in the experimental population compared to the CPI-U or CPI-W. As a result, the medical care component tends to have a larger effect on the elderly population than it does on the other two indexes. However, other differences, such as the greater weight of homeownership in the CPI-E, also play an important role.

Finally, the experimental price index has limitations as an estimate of the inflation rate experienced by older Americans. Because of the limitations inherent in the methodology, conclusions drawn from these data should be made with caution.

MONTHLY LABOR
REVIEW

U.S. Department of Labor — Bureau of Labor Statistics

CPI research series using current methods, 1978–98

Inflation would have been lower from 1978 to the present if the current methods of calculating the CPI had been in place

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Consumer Price Index research series using current methods, 1978–98

BLS research indicates that the measured rate of inflation would have been lower since 1978 if methods currently used in calculating the Consumer Price Index for All Urban Consumers had been in place from that year to the present

Kenneth J. Stewart and Stephen B. Reed

The Consumer Price Index (CPI) is the most widely used measure of inflation in the United States and affects nearly all Americans. Annual cost-of-living adjustments (COLAs) for Social Security recipients and Federal and military retirees are tied to changes in the CPI, which also is used to determine the annual escalation of Federal income tax brackets, as well as personal exemption and standard deduction amounts. In addition, the CPI is used in the calculation of many key economic indicators that require real- or constant-dollar measures, including estimates of income, earnings, productivity, output, and poverty.

The Bureau of Labor Statistics has made numerous improvements to the CPI over the past quarter-century. While these improvements make the present and future CPI more accurate, *historical* price index series are not adjusted to reflect the improvements.[1] Many researchers, however, would like a historical series that was measured consistently over the entire period. Accordingly, this article presents an estimate of the CPI-U from 1978 to 1998 that incorporates most of the improvements made over that time span into the entire series. The new measure, called the *CPI research series using current methods* (CPI-U-RS), attempts to answer the question, "What would have been the measured rate of inflation from 1978 forward had the methods currently used in calculating the CPI-U been in use since 1978?"[2]

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The CPI-U-RS was constructed by adjusting national CPI-U index series for methodological improvements, usually at the level of the item stratum, such as new vehicles or residential rent.[3] That is, the adjustments were made, not to the aggregate all-items CPI-U directly, but rather to its component indexes. These adjusted series were then aggregated by using the official CPI-U base-period expenditure weights to form the all-items CPI-U-RS and other high-level aggregates.[4] In this regard, it is important to note that the component indexes were adjusted directly; individual prices were not used to recompute those indexes. For example, as explained later, adjustments were made to the historical values of the CPI-U television index to reflect the estimated impact on that index of hedonic regression-based quality adjustment, had that method been employed prior to its implementation in January 1999. No attempt was made, however, to recompute the television index by applying hedonic regression analysis to the individual television prices collected for the CPI during the 1978–98 period. Such an effort would not have been feasible, in part because the early price data are no longer available.

It is also important to recognize that the CPI-U-RS provides an annual inflation series that adjusts only for specified changes in BLS methodology. No attempt has been made to incorporate research results, such as those on the value of safer, but perhaps less comfortable, air travel, for which there is no corresponding method-

ological change in the CPI-U. Nevertheless, the CPI-U-RS is expected to be of use to forecasters and other researchers in analyzing the trends and other movements in consumer inflation over the last two decades. Indeed, the measure should help answer the question of the degree to which the measured rate of inflation has been affected by improvements BLS has made.[5]

Over the 21-year period of the study (December 1977 to December 1998), the CPI-U-RS increased 141.2 percent, compared with 163.9 percent for the CPI-U. The figures represent an average annual increase of 4.28 percent for the CPI-U-RS and 4.73 percent for the CPI-U; the average annualized difference between the two measures is thus 0.45 percent. (See chart 1.)

Methodological improvements

A number of significant methodological improvements have been made to the CPI since 1978. The CPI-U-RS differs from the CPI-U in that the CPI-U-RS is adjusted to incorporate estimates of what the measured rate of inflation would have been had those improvements to the CPI-U been made earlier. This section focuses on those methodological improvements that affect the CPI-U-RS and how the adjustments were derived.

Improvements made to the CPI from 1978 to 1998 and reflected in the CPI-U-RS. Exhibit 1 lists all the improvements made to the CPI since 1978 for which estimates of historical effects were made and included in the CPI-U-RS.

1. Use of rental equivalence to measure changes in homeowner costs. In 1983, a major improvement was introduced when the homeownership component of the CPI-U was changed from the cost of the purchase of a home to a flow-of-services approach. Rental equivalence is incorporated into the CPI-U-RS from 1978 to 1982 by first replacing the old weight for homeowner cost in December 1977 (which was based on home purchases, contracted mortgage interest, and so on) by a weight based on the rental equivalence concept. The price change for the new rental equivalence category is then imputed from 1978 to 1982 by changes in the CPI residential rent index. This technique for incorporating rental equivalence into the CPI-U-RS corresponds to how the Bureau created the CPI-U-X1, an experimental consumer price index that employed the rental equivalence treatment from 1967 to 1982.[6] Thus, the difference between the CPI-U and CPI-U-X1 is also reflected in the CPI-U-RS.

Chart 1. Consumer Price Index for All Urban Consumers (CPI–U) and Consumer Price Index research series using current methods (CPI–U–RS), 1977–98

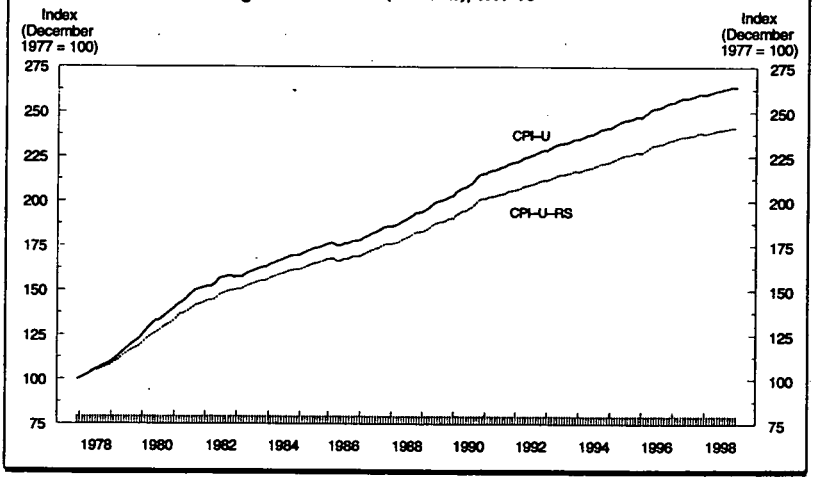


Exhibit 1. Improvements to the Consumer Price Index for All Urban Consumers (CPI-U) since 1978 and their effect on the CPI research series using current methods (CPI-U-RS)[1]

Change	Description	Year implemented in CPI-U	CPI-U-RS incorporates estimate of change from—
Use of rental equivalence to measure changes in homeowner costs	Changed homeowners' component from cost of purchase to value of rental services	1983	1978–82
Quality adjustment of used-car prices	Adjusted prices of used cars for differences in quality after changeovers to new models	1987	1978–86
Quality adjustment of sampled housing units to reflect aging of the units	Adjusted rental values in CPI sample to reflect aging	1988	1978–87
Quality adjustment of apparel prices	Used regression models to adjust apparel prices for changes in quality when new clothing lines are introduced	1991	1978–90
Treating shifts between brand-name and generic drugs as price changes	Introduced new procedures that allow generic drugs to be priced when a brand-name drug loses its patent	1995	1978–94
Change in shelter formula to eliminate composite estimator	Replaced composite estimator with a 6-month chain estimator. Underreporting of 1-month rent changes had resulted in missing price changes in residential rent and homeowners' equivalent rent	1995	1978–94
Change in shelter formula to improve rental equivalence estimator	Modified imputation of homeowners' implicit rent to eliminate upward-drift property of previous estimator	1995	1987–94
Elimination of functional form bias for CPI food-at-home categories	Introduced seasoning procedures to eliminate upward bias derived by setting base-period prices of newly initiated items	1995	1978–94
Elimination of functional form bias for other CPI commodity and service categories	Extended food-at-home seasoning procedures to remainder of commodities and services. Base-period prices were left unchanged in most noncomparable substitutions	1996	1978–96
Quality adjustment of personal-computer prices	Used regression models to adjust personal-computer prices for changes in quality	1998	1987–97
Elimination of automobile finance charges	Deemed out of scope of definition of CPI	1998	1978–97
Quality adjustment of television prices	Used regression models to adjust television prices for changes in quality	1999	1978–98
Accounting for consumer substitution within CPI item categories	Introduced a geometric-mean formula that assumes a modest degree of consumer substitution within most CPI item categories	1999	1978–98
Treating mandated pollution control measures as price increases	Adjustments are no longer made to changes in pollution control regulations, which are now viewed as price changes and not quality changes	1999	1978–98

[1] This exhibit generally follows Exhibit 1 in John S. Greenlees and Charles C. Mason, "Overview of the 1998 revision of the Consumer Price Index," *Monthly Labor Review*, December 1996, pp. 3–9.

2. Quality adjustment of used-car prices. In 1967, the Bureau began to adjust new-car prices for changes in the quality of the cars. In 1987, the Bureau began adjusting the used-car index for similar changes by applying, to each model in the used-car sample, the percentage of quality adjustment employed when the model was new. A more aggregate version of this same procedure is used to adjust the used-car index of the CPI-U-RS downward from 1978 to 1986, by first estimating the general distribution of model years within the used-car sample in each of those years and then estimating the effect of the quality adjustments applied to new cars of the same model years.[7]

3. Quality adjustment of sampled housing units to reflect aging. In 1988, quality adjustments reflecting the aging of the housing stock sample began. The CPI-U-RS incorporates an estimate of the effect of this change by adjusting the residential rent and owners' equivalent rent indexes upward by about 0.3 percent per year from 1978 to 1987.[8] This figure represents the average of the adjustment factors used in the CPI from 1988 to 1999.[9]

4. Quality adjustment of apparel prices. In 1991, the Bureau initiated the use of hedonic models to estimate changes in quality for apparel commodities. Using a BLS study that estimated the effect of this improvement over the last 6 months of 1991, the Bureau adjusted all of the CPI-U-RS apparel commodity indexes from 1978 to 1990 upward by approximately 0.4 percent per year.[10]

5. Treating shifts between brand-name and generic drugs as price changes. In 1995, a new procedure was introduced that allows a generic drug to be priced when the corresponding brand-name drug loses its patent protection. (The procedure also allows the price of the generic drug to be directly compared with that of the brand-name one.) On the basis of a review of the CPI prescription drug sample from 1993 to 1997, it is estimated that this change reduced the prescription drug index during that period by an average of 0.4 percent per year. Accordingly, the CPI-U-RS prescription drug index is also adjusted downward by varying amounts from 1978 to 1994, depending on the number of generic drugs entering the market each year during that period (relative to the number entering the market from 1993 to 1997).[11]

6. Changes in shelter formulas in 1995. Two changes implemented in January 1995 affected shelter components of the CPI. The first was the elimination of the composite estimation approach that used a weighted average of 1- and 6-month changes in rent to estimate monthly price changes for individual housing units in the CPI rent sample. Evidence indicated that, because some respondents misreported 1-month rent changes, the composite estimator underestimated price changes; therefore, it was replaced by a 6-month chain estimator in January 1995. This methodological improvement affected both the residential rent and owners' equivalent rent indexes.

The second shelter-related change made in January 1995 affected only the owners' equivalent rent index. The Bureau modified the formula for calculating that index to eliminate an upward-drift tendency the former method had between 1987 and 1995.

The CPI-U-RS is adjusted for these two improvements in the shelter component from 1991 to 1995 by using an experimental Laspeyres consumer price index (called the CPI-U-XL) in place of the CPI-U for both residential rent and owners' equivalent rent.[12] The CPI-U-XL, published for years beginning in 1991, employs the post-1994 estimation formulas for both shelter indexes. Substituting the CPI-U-XL for the CPI-U had the effect of adjusting the residential rent index upward by an average of about 0.1 percent per year during the 1991–95 period. This average effect was also applied to the residential rent index from 1978 to 1990. The average downward adjustment of the owners' equivalent rent index from 1991 to 1995 was 0.6 percent per year, and the effect was used to adjust the owners' equivalent rent component of the CPI-U-RS from 1987 to 1990. From 1978 to 1986, when the owners' equivalent rent index was subject only to the downward bias resulting from the use of composite estimation, it was adjusted *upward* by about 0.1 percent a year for the CPI-U-RS.[13]

7. Quality adjustment of personal-computer prices. In 1998, hedonic regression models were first used to adjust personal-computer prices for changes in quality. Estimates based on an analysis of 1998 data indicate that this change has had the effect of lowering the personal-computer index by about 6.5 percent per year. The CPI-U-RS uses this figure to adjust the personal-computer component downward during the period 1987–97.[14]

8. Elimination of automobile finance charges. Automobile finance charges were dropped from the CPI in 1998 on the basis that they did not reflect a cost of current consumption. The CPI-U-RS eliminates the automobile finance charges index from 1978 to 1997.[15]

9. Quality adjustment of television prices. Hedonic techniques were used to adjust the television component of the CPI for changes in quality for the first time in 1999. Based on BLS research indicating that the television index would have been approximately 0.1 percent lower per year with the quality adjustments applied from August 1993 to August 1997, the CPI-U-RS estimates the effect of this improvement on the index from 1977 to 1998 by adjusting the index down by that

amount from 1978 to 1998.[16]

10. Eliminating functional form bias and accounting for consumer substitution within CPI item categories. The CPI-U-RS uses estimates derived from the experimental CPI using geometric means (CPI-U-XG) to account for both functional form bias and consumer substitution within item categories.

In 1995 and 1996, improvements were made to the CPI to eliminate functional form bias, an upward bias in measured price changes occurring during the period immediately following the introduction of new item samples into the CPI.[17] The new seasoning procedures eliminated the bias for the food-at-home categories in 1995 and for the other CPI categories in mid-1996.[18]

While the elimination of functional form bias improved the CPI as a measure of price change for a fixed market basket of goods and services, the estimator was still considered an upper bound to a cost-of-living index because it did not account for consumer substitution—the fact that consumers can, and do, respond to changes in the relative prices of different items. Since January 1999, a geometric-mean formula has been used to calculate most basic indexes in order to address consumer substitution within CPI item categories.[19]

The Bureau began publishing the CPI-U-XG in 1997; as with the CPI-U-XL, historical indexes are available only for the years 1991–98. Indexes calculated with the use of geometric means not only address consumer substitution within item categories; they also are free of functional form bias. Therefore, the CPI-U-RS uses estimates derived from the CPI-U-XG to adjust for both functional form bias and consumer substitution within CPI item categories. Specifically, for those CPI-U categories that now use a geometric-mean formula, the CPI-U-RS substitutes price changes from the CPI-U-XG for the period 1991–98. For food-at-home categories, average differences between the CPI-U and CPI-U-XG over the 1991–94 period were used to extrapolate estimates for 1978 to 1990. For other categories that now use the geometric-mean formula, average differences between the same two indexes from January 1991 through May 1996 were used to extrapolate estimates for 1978 to 1990. For those item categories in the CPI-U that continue to use the Laspeyres formula, the CPI-U-RS accounts for the functional form bias present in the CPI-U from 1978 to 1996 by using internal estimates of the bias.[20]

11. Treating mandated pollution control measures as price increases. In 1999, the Bureau reversed its policy regarding the treatment of pollution control measures designed to improve the environment. From 1967 to 1998, federally mandated improvements in emissions were treated as improvements in quality; starting in 1999, they began to be treated as price increases instead.[21] The CPI-U-RS is adjusted upward by removing the environmental quality adjustments made to the motor vehicle and gasoline indexes from 1978 to 1998.

Improvements made to the CPI from 1978 to 1998 and not incorporated into the CPI-U-RS. Several improvements were made to the CPI since 1978, for which no adjustments to the CPI-U-RS were made. Adjustments to the CPI-U-RS were not made if the impact of the improvement on the rate of growth of the index could not be estimated or was believed to be negligible. Improvements of this nature include the updating of CPI expenditure weights and area samples accompanying the CPI revisions of 1978, 1987, and 1998;[22] improvements to CPI imputation methods in 1984, 1989, and 1992;[23] improvements in the treatment of seasonal items in 1987;[24] an improved treatment of discount airline fares in 1991;[25] improved sample augmentation procedures in 1992;[26] increased sample sizes for hotels and motels in 1992;[27] improvements in the methods for pricing hospital services in 1997;[28] a change from area- to item-based sample rotation procedures in 1999;[29] revisions to the shelter sample and estimators in 1999;[30] and changes to the treatment of utility rebates in 1999.[31]

Limitations of the CPI-U-RS. The CPI-U-RS is limited chiefly in two ways. First, the magnitude of each adjustment made to the CPI-U-RS has a degree of uncertainty surrounding it. Second, some improvements to the CPI-U, for which no adjustments were made to the CPI-U-RS, may nevertheless have affected the rate of inflation, as measured by the CPI-U.

Most adjustments to the CPI-U-RS were based on BLS research that estimated the impact of methodological changes to the CPI over a relatively short period of time, and the effect of a given methodological change (outside the period of study) is assumed to be constant over time. For example, while the price changes for the CPI-U-XG were used to adjust most CPI item categories from 1991 to 1998, the CPI-U-RS was adjusted downward from 1978 to 1990 by the *average* differences between the CPI-U and CPI-U-XG from 1991 to the mid-1990s. Similarly, apparel indexes for the CPI-U-RS from 1978 to 1990 are adjusted on the basis of studies of the effect of the improvement during the last 6 months of 1991. While there is typically a great degree of confidence about the *direction* of the adjustment made to the CPI-U-RS, extrapolations of this type could call into question the *size* of the adjustments.

Similarly, as noted above, a dozen or so methodological improvements have been made to the CPI for which *no* estimate was made for the CPI-U-RS. Other organizations, such as the Congressional Budget Office and the Council of Economic Advisers, have estimated the impact of some of these improvements on the projected rate of inflation for budget forecasts. For example, in 1997, the CPI procedures for pricing hospital services were changed, improving the ability of the

index to reflect changes in the scope and types of payors and treatments. The Congressional Budget Office and the Council of Economic Advisers have estimated that those methodological improvements in the measurement of prices of hospital services will have a modest downward impact on the *future* measured rate of inflation. While it is probable that the measured rate of inflation for hospital services would have been lower had this change been implemented in the CPI earlier, it would be extremely difficult to quantify the effect of the change *retroactively*. CPI data would be of little value for such an exercise, because the 1997 improvements primarily affected the nature of the data collected, not the computational methods applied to those data. Quantification of the effects of improvement would have to be based on knowledge and analysis of past trends in, for example, managed care plans' market penetration, the effectiveness of third-party cost control efforts, cost shifting to privately paying patients, and shifts between inpatient and outpatient treatment for various medical conditions. Now, controversy surrounds some of these trends and their impacts, and a definitive examination of each is beyond the scope of this article. In general, however, the adjustments for inflation that are incorporated into the CPI-U-RS are those for which the Bureau has special expertise or data. The assessment of the impact of other adjustments, such as those for the 1997 improvements in hospital services, is left to other interested parties.

The treatment of expenditure weight updates also is worthy of explanation here. The Bureau does not view the weight updates of 1987 and 1998 as methodological changes; periodic updates have long been a feature of the CPI. Moreover, it is not clear that weighting individual CPI series using the current 1993–95 base period would yield, for example, an improved aggregate measure for the year 1980. Therefore, the CPI-U-RS is not adjusted for the 1987 and 1998 updates. In December 1998, the Bureau announced that, beginning in 2002, expenditure weight updates would occur every 2 years rather than approximately once every decade. No attempt has been made in this article, however, to incorporate the estimated historical impact of biennial updates between 1978 and 1987 and between 1987 and 1998. Such an analysis would face significant hurdles regarding the availability of data and commitment of resources.[12]

Results

Over the 21-year period of the study (December 1977 to December 1998), the CPI-U-RS increased 141.2 percent, compared with 163.9 percent for the CPI-U over the same period; the annualized difference between the two measures is approximately 0.45 percent. Table 1 gives the December-to-December percent changes for 1978 through 1998 for the CPI-U and CPI-U-RS for the all-items index and for major CPI groups.

Analysis of results: changes over time. The difference between the all-items indexes of the CPI-U and CPI-U-RS changed markedly over time. From 1978 to 1982, driven largely by the use of rental equivalence in the CPI-U-RS, that index increased about 1 percent per year more slowly, on average, than the CPI-U, although substantial variations occurred from year to year. The differences between the two measures became much smaller after rental equivalence was introduced into the CPI-U in 1983, shrinking to around 0.1 percent per year from 1983 to 1986. The relatively small differences during that period were due in large part to upward adjustments made to the CPI-U-RS housing categories to reflect composite estimation and aging bias. These adjustments partially offset the downward adjustment used to estimate the effect the geometric-mean formula would have had. Since 1986, the difference between the CPI-U and CPI-U-RS at the all-items level has typically remained around 0.3 percent per year to 0.4 percent per year. (See chart 2.)

Analysis of results: quantitative impact of selected adjustments. A large proportion of the difference between the CPI-U and CPI-U-RS can be explained by the rental equivalence adjustment applied from 1978 to 1982 and by the group of adjustments made to reflect changes over time to all CPI formulas.

Rental equivalence was first incorporated into the CPI-U in 1983, and its incorporation into the CPI-U-RS from 1978 to 1982 largely explains the sizable difference between the CPI-U and CPI-U-RS during that period. Indeed, as table 2 shows, when the rental equivalence adjustment alone is applied to the CPI-U from 1978 to 1982, the resulting index increases at a rate similar to that for the CPI-U-RS.

In subsequent years (1983–98), most of the difference between the CPI-U and CPI-U-RS was driven by adjustments that can be described as changes to CPI formulas. Among these changes were the elimination of the composite estimator used to measure the cost of shelter before 1995, the improved estimator for rental equivalence in 1995, the elimination of functional form bias for commodity and service categories in 1995 and 1996, and the implementation of the geometric-mean formula in 1999 to account for consumer substitution within CPI item categories. The importance of the changes from 1983 to 1998 can be seen in table 2.

Over the 21-year period, the remaining adjustments made to the CPI-U-RS were relatively small and largely offsetting. Still, these adjustments had the net effect of making the CPI-U-RS *higher* than it otherwise would have been for most years covered by the study.

Analysis of results: effect on major groups

1. Food and beverages. The difference between the CPI-U and CPI-U-RS for the food-and-beverages group is driven by

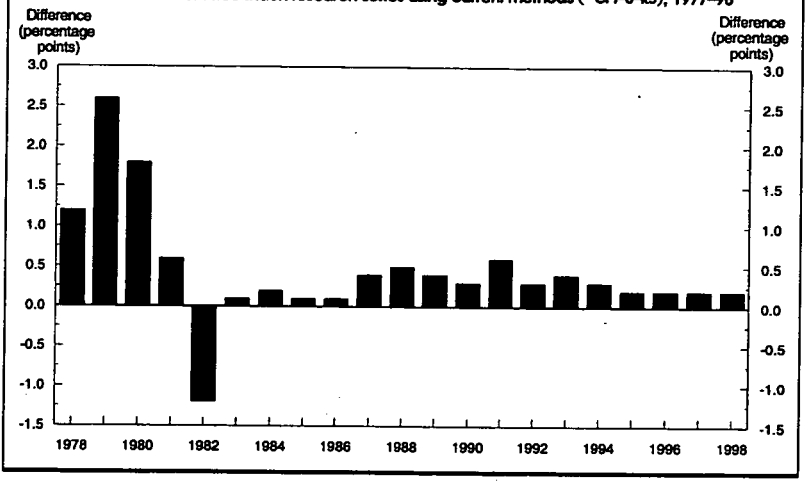
Table 1. CPI for All Urban Consumers (CPI-U) and CPI research series using current methods (CPI-U-RS), all items and major groups, percent changes, December to December, 1978–98

Year	Index	All items	Food and beverages	Housing	Apparel	Transportation	Medical care	Entertainment	Other goods and services	Recreation	Education and Communication
1978	CPI-U	9.0	11.6	10.0	3.1	7.7	8.8	5.7	6.4	–	–
	CPI-U-RS	7.8	11.0	7.4	2.1	7.5	8.6	5.2	6.2	–	–
1979	CPI-U	13.3	10.0	15.2	5.5	18.3	10.1	6.9	7.8	–	–
	CPI-U-RS	10.7	9.5	9.5	4.5	18.5	9.7	6.3	7.5	–	–
1980	CPI-U	12.5	10.1	13.7	6.9	14.6	9.9	9.7	10.1	–	–
	CPI-U-RS	10.7	9.5	9.9	5.8	15.6	10.0	9.0	9.9	–	–
1981	CPI-U	8.9	4.3	10.2	3.5	10.9	12.5	7.3	9.8	–	–
	CPI-U-RS	8.3	3.8	9.8	2.7	10.5	12.2	6.6	9.8	–	–
1982	CPI-U	3.8	3.2	3.8	1.8	1.8	11.0	5.8	12.1	–	–
	CPI-U-RS	5.0	2.7	6.7	.8	2.0	10.8	5.1	11.9	–	–
1983	CPI-U	3.8	2.7	3.5	2.9	3.9	6.4	4.0	7.9	–	–
	CPI-U-RS	3.7	2.1	3.6	1.9	4.2	6.2	3.2	7.7	–	–
1984	CPI-U	3.9	3.8	4.3	2.0	3.1	6.1	4.3	6.0	–	–
	CPI-U-RS	3.7	3.2	4.4	1.0	2.7	5.9	3.7	5.9	–	–
1985	CPI-U	3.8	2.8	4.3	2.8	2.8	6.0	3.1	6.3	–	–
	CPI-U-RS	3.7	2.3	4.4	1.9	2.8	6.5	2.6	6.0	–	–
1986	CPI-U	1.1	3.7	1.7	.8	–5.9	7.7	3.4	5.5	–	–
	CPI-U-RS	1.0	3.3	2.0	.1	–6.2	7.5	2.7	5.3	–	–
1987	CPI-U	4.4	3.5	3.7	4.8	6.1	5.9	4.0	6.1	–	–
	CPI-U-RS	4.0	3.0	3.4	3.8	5.9	5.5	3.4	5.9	–	–
1988	CPI-U	4.4	5.1	4.0	4.7	3.0	6.9	4.8	7.0	–	–
	CPI-U-RS	3.9	4.5	3.6	3.6	2.5	6.6	3.9	6.7	–	–
1989	CPI-U	4.6	5.5	3.9	1.0	4.9	6.5	5.1	6.2	–	–
	CPI-U-RS	4.2	5.0	3.5	–.1	3.7	6.2	4.5	7.9	–	–
1990	CPI-U	6.1	5.3	4.8	5.1	10.4	8.8	4.3	7.6	–	–
	CPI-U-RS	5.8	4.6	4.0	4.1	10.8	9.3	3.8	7.4	–	–
1991	CPI-U	3.1	2.5	3.4	3.4	–1.5	7.9	3.9	6.0	–	–
	CPI-U-RS	2.5	2.0	2.6	2.1	–1.5	7.7	3.4	7.8	–	–
1992	CPI-U	2.9	1.6	2.8	1.4	3.0	6.6	2.8	6.5	–	–
	CPI-U-RS	2.6	1.2	2.1	–.1	3.2	6.5	2.3	6.3	–	–
1993	CPI-U	2.7	2.7	2.7	.9	2.4	5.4	2.8	2.7	–	–
	CPI-U-RS	2.3	2.1	2.4	–.7	2.4	5.1	2.4	2.3	–	–
1994	CPI-U	2.7	2.7	2.3	–1.8	3.8	4.9	2.3	4.2	–	–
	CPI-U-RS	2.4	2.1	1.9	–2.4	4.4	4.8	1.4	3.9	–	–
1995	CPI-U	2.5	2.1	3.0	.1	1.8	3.9	3.3	4.3	–	–
	CPI-U-RS	2.3	1.9	2.8	–1.3	1.3	3.7	2.7	4.2	–	–
1996	CPI-U	3.3	4.2	2.9	–.2	4.4	3.0	2.9	3.6	–	–
	CPI-U-RS	3.1	3.8	2.8	–1.0	4.7	2.9	2.0	3.5	–	–
1997	CPI-U	1.7	1.8	2.4	1.0	–1.4	2.8	1.4	5.2	–	–
	CPI-U-RS	1.5	1.5	2.2	.0	–1.5	2.7	.8	5.1	–	–
1998	CPI-U	1.6	2.3	2.3	–.7	–1.7	3.4	–	6.6	1.2	.7
	CPI-U-RS	1.4	1.9	2.3	–2.4	–1.7	3.2	–	6.2	.7	3
Dec. 1977–Dec. 1998	CPI-U	163.9	142.5	172.6	62.0	136.5	316.3	[1]134.3	301.9	...	...
	CPI-U-RS	141.2	119.6	143.2	29.1	137.7	298.9	[1]107.9	282.5	...	...
Average annual difference, Dec. 1977–Dec. 1998		.45	.49	.57	1.10	–.03	.20	.62	.25	...	...

[1] Entertainment was dropped as a major group in December 1997; number represents percent change from December 1977 through December 1997.

Note: Dash indicates not a major group that year. From 1978 to 1998, there were seven major groups in the CPI. In 1998, entertainment was dropped as a major group, and two major groups were added: recreation, and education and communication.

Chart 2. Yearly differences between the Consumer Price Index for All Urban Consumers (CPI-U) and the Consumer Price Index research series using current methods (CPI-U-RS), 1977–98



the geometric-mean adjustments made to the CPI-U-RS; the group was not affected by the other adjustments. The difference between the CPI-U and CPI-U-RS was consistently between 0.5 percent per year and 0.6 percent per year between 1978 and 1994. After 1994, when the food-at-home components of the CPI-U were improved in order to eliminate the functional form bias previously present in them, the average difference between the two measures fell to 0.2 percent per year.

2. Housing. The difference between the CPI-U and the CPI-U-RS in the housing group varies significantly by period. From 1977 to 1982, the difference is explained chiefly by the incorporation into the CPI-U-RS of an estimate for rental equivalence, a method not implemented in the CPI-U until 1983. While the average annual difference between the CPI-U and CPI-U-RS housing measures was 1.9 percent from 1978 to 1982, annual differences were as high as 5.7 percent (in 1979) and as low as –3.1 percent (in 1982).

From 1983 to 1986, the housing group index of the CPI-U-RS was actually rising faster than that of the CPI-U, due to adjustments made to the CPI-U-RS to reflect the elimination of composite estimation and the quality adjustment of shelter units to reflect aging. The annual average difference between the CPI-U and CPI-U-RS from 1983 to 1986 is –0.15 percent per year. For the remaining years (1987–98), the difference between the CPI-U and CPI-U-RS housing measures was consistently positive, but fairly small, averaging between 0.3 percent per year and 0.4 percent per year.

3. Apparel. From 1978 to 1990, the annual difference between the CPI-U and CPI-U-RS apparel indexes was consistently around 1.0 percent. This substantial gap reflects the large downward adjustment to the CPI-U-RS because of the geometric-mean formula, which has a substantial impact on the apparel category. The effect is partially offset by an upward adjustment of about 0.4 percent per year to reflect an estimate of the retroactive influence of hedonic-based quality adjustments implemented in the CPI-U apparel indexes in 1991. After 1991, with only the geometric-mean adjustment affecting the apparel category of the CPI-U-RS, the average annual difference between the CPI-U and CPI-U-RS apparel indexes was 1.4 percent.

4. Transportation. The annual average difference between the CPI-U and CPI-U-RS transportation components between 1978 and 1998 was near zero, reflecting several changes that roughly offset each other. Specifically, while downward adjustments were made to the CPI-U-RS to incorporate the effects of changes in the quality of used cars and the effects of

the geometric-mean formula, net upward adjustments resulted from the deletion from the CPI-U-RS of the index for automobile finance charges and from an upward adjustment based on the backing out of a prior adjustment for changes in quality for mandated pollution controls made to the CPI-U over the period. While annual changes in the CPI-U and CPI-U-RS transportation measures were usually within one-half percent of each other, the CPI-U-RS transportation measure was a full percentage point *higher* than that of the CPI-U in 1980, a year in which the CPI-U-RS reflected a large upward adjustment to remove the aforesaid previous downward adjustment in the measurement of pollution-related changes in the quality of 1981-model automobiles.

5. Medical care. The average annual difference between the CPI-U and CPI-U-RS for the medical care component was 0.2 percent per year. This relatively small difference primarily reflects the fact that, while a downward adjustment to the CPI-U-RS for medical care commodities was made to reflect the use of geometric means, the geometric-mean formula is not utilized for most medical care services in the calculation of the CPI-U.

6. Entertainment. The annual difference between the CPI-U and CPI-U-RS for the major group of entertainment averaged 0.6 percent from 1978 to 1997, reflecting the downward adjustment made to the CPI-U-RS from the estimate of the likely effect of the geometric-mean formula.

7. Other goods and services. The annual average difference between the CPI-U and CPI-U-RS for the other-goods-and-services component between 1978 and 1998 was 0.25 percent, again reflecting the downward adjustment made to the CPI-U-RS from the estimate of the effect of the geometric-mean formula.

BECAUSE THE CPI-U DOES NOT INCORPORATE methodological changes retroactively, the Bureau of Labor Statistics developed the CPI-U-RS for researchers who are interested in using current and consistent methods of estimating consumer inflation over the 1978–98 period. The CPI-U-RS provides a somewhat different picture of inflation from 1978 to 1998 by including an estimate of most improvements made over time to the CPI back to 1978. Users of CPI data can thus gain a new perspective on inflation and on the performance of the U.S. economy between the years 1978 and 1998.

Table 2. Estimated effect on annual inflation rate of specific methodological changes, selected periods

Index or type of effect	Average annual rate			
	1978–82	1983–86	1987–97	1998
CPI-U	9.48	3.15	3.50	1.61
Effect of incorporating an estimate of rental equivalence from 1978 to 1982	–.86	...	...	...
Effect of incorporating changes made to CPI formulas	–.28	–.26	–.41	–.23
Effect of all other changes	+.14	+.13	+.06	+.00
CPI-U-RS	8.46	3.02	3.15	1.38

Researchers need to be aware of the limitations of the CPI-U-RS, including the fact that adjustments made to the measure from 1978 forward typically reflect extrapolations of estimates made over later, and much shorter, periods. In addition, the CPI-U-RS is not adjusted for many improvements made to the CPI over the past 21 years, such as the January 1997 change to improve the pricing of hospital services. Nonetheless, for some purposes, the CPI-U-RS can serve as a valuable proxy for what the CPI-U would have been had current (1999) methods been in place from 1978 onward.

It is important to note that the CPI-U-RS is subject to revision. When an improvement is made to the CPI and an effect of that change can be estimated, the CPI-U-RS (unlike the CPI-U) will be revised so that earlier years incorporate that improvement. In addition, if a better method of adjusting the CPI-U-RS for past improvements is found, the CPI-U-RS will be revised to reflect the new technique.

The CPI-U-RS will be updated periodically in the *CPI Detailed Report*. To assist users, all-item indexes for the CPI-U-RS are available on request.[33] In addition, all-item indexes are available for users who would like to link the CPI-U-RS to the CPI-U-X1 for periods prior to 1978.[34] □

Notes

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[1] Historical CPI indexes are occasionally revised when data-collection or data-processing errors are discovered. Methodological improvements, however, do not result in revisions to the data.

[2] Researchers outside the Bureau have attempted to estimate what the CPI would have been had improvements to it been in place earlier. (See, for example, Dean Baker, *Getting Prices Right: A Methodologically Consistent Consumer Price Index, 1953–94* (Washington, DC, Economic Policy Institute, 1996); and Richard Bavier, *Updating the poverty thresholds with expenditure data*, poverty measurement working paper (Bureau of the Census, 1998).) Others, such as the Congressional Budget Office and Council of Economic Advisers, have estimated the effect of recent improvements to the CPI on the projected (future) rate of inflation. General estimates of bias in the CPI relative to

a cost-of-living index have also been made by many groups and individuals, including the Advisory Commission to Study the Consumer Price Index (widely known as the Boskin Commission), the Congressional Budget Office, and the Federal Reserve Board.

[3] Because of limitations of available data, adjustments for periods prior to the 1987 revision of the CPI often had to be made at a slightly higher level of aggregation, roughly corresponding to the level of a CPI expenditure class.

[4] As noted subsequently, CPI expenditure weight updates were not treated as methodological improvements in the construction of the CPI-U-RS.

[5] The development of such a broader historical research series was one recommendation of the Boskin Commission.

[6] The CPI-UI-X1 has been used widely as an alternative measure of historical consumer inflation. For a more detailed discussion of rental equivalence, see Robert Gillingham and Walter Lane, "Changing the treatment of shelter costs for homeowners in the CPI," *Monthly Labor Review*, June 1982, pp. 9–14; and "Changing the homeownership component of the Consumer Price Index to rental equivalence," *Consumer Price Index Detailed Report* (Bureau of Labor Statistics, January 1983), pp. 1–7.

[7] For more details on the adjustment of used-car prices for changes in the quality of the cars, see Jeffrey H. Kellar, "New methodology reduces importance of used cars in the revised CPI" *Monthly Labor Review*, December 1988, pp. 34–36.

[8] Specifically, the monthly price relatives of the rent and owners' equivalent rent indexes were multiplied by $1.003^{1/12}$. The result of this adjustment is that the 12-month change in the item category within the CPI-U-RS is 0.3 percent higher than the 12-month change in the CPI-U. Other adjustments set forth in this article can be similarly interpreted.

[9] For a description of adjustments to reflect the aging of the rental stock, see Walter F. Lane, William C. Randolph, and Stephen A. Berenson, "Adjusting the CPI shelter index to compensate for effect of depreciation," *Monthly Labor Review*, October 1988, pp. 34–37.

[10] For a more detailed description of the improved method used for adjusting apparel prices for changes in quality, see Paul R. Liegey, Jr., "Apparel price indexes: effects of hedonic adjustment," *Monthly Labor Review*, May 1994, pp. 38–45.

[11] For more details, see "Improvements to CPI procedures: prescription drugs," *Consumer Price Index Detailed Report* (Bureau of Labor Statistics, October 1994), p. 4.

[12] The CPI-U-XL was calculated from 1991 to 1997 in order to give researchers an opportunity to compare differences between a Laspeyres type of index and an experimental CPI that used geometric means (CPI-U-XG), holding constant other changes in CPI methods during that period.

[13] For more information on the 1995 shelter changes, see Paul A. Armknecht, Brent R. Moulton, and Kenneth J. Stewart, *Improvements to the food-at-home, shelter and prescription drug indexes in the U.S. Consumer Price Index*, working paper 263 (Bureau of Labor Statistics, February 1995); and "Improvements in estimating the shelter indexes in the CPI," *Consumer Price Index Detailed Report*, October 1994, pp. 5–6.

[14] See "Using a hedonic model in the CPI to adjust personal computer prices for changes in quality," *Consumer Price Index Detailed Report*, June 1997, p. 18. From 1987 to 1997, personal computers were included in the CPI item category called "information-processing equipment" (IPE). The adjustments made to the CPI-U-RS reflect an estimate each year of the number of personal-computer prices in the IPE sample during that time.

[15] See Walter Lane, "Changing the item structure of the Consumer Price Index," *Monthly Labor Review*, December 1996, pp. 18–25.

[16] See Brent R. Moulton, Timothy J. LaFleur, and Karin E. Moses, *Research on Improved Quality Adjustment in the CPI: The Case of Televisions*, paper presented at the Fourth Meeting of the International Working Group on Price Indices, Washington, DC, Apr. 22–24, 1999.

[17] See, for example, Marshall Reinsdorf, *Price dispersion, seller substitution, and the U.S. CPI*, working paper 252 (Bureau of Labor Statistics, March 1994).

[18] A brief description of the improved procedures for the food-at-home categories of the CPI can be found in "Improving CPI sample rotation procedures," *Consumer Price Index Detailed Report* (Bureau of Labor Statistics, October 1994), pp. 7–8. A discussion of the extension of this methodology to other commodities and services can be found in "Extending the improvement in CPI sample rotation procedures," *Consumer Price Index Detailed Report* (Bureau of Labor Statistics, June 1996), pp. 9–10. A change to eliminate a similar functional form bias resulting from certain item substitutions can be found in "Improving CPI item substitution procedures," *Consumer Price Index Detailed Report* (Bureau of Labor Statistics, July 1996), pp. 8–9.

[19] The geometric-mean formula will be used within item categories that make up 61 percent of total consumer spending in the CPI-U; the Laspeyres formula will continue to be used in the remaining categories. (See Kenneth V. Dalton, John S. Greenlees, and Kenneth J. Stewart, "Incorporating a geometric mean formula in the Consumer Price Index," *Monthly Labor Review*, October 1998, pp. 3–7.)

[20] Brent R. Moulton, Karin Moses, and Claire McAnaw Gallagher, "Formula bias in the CPI: Estimated impact of seasoning," undated internal memorandum.

[21] See "The treatment of mandated pollution control measures in the CPI," *Consumer Price Index Detailed Report* (Bureau of Labor Statistics, September 1998), pp. 4–7. The author of the piece, Dennis Fixler, notes that the CPI is a subindex of a cost-of-living index in that the CPI is defined to include only market transactions, although it is conditional on nonmarket factors. Accordingly, changes in the quality of these factors—such as the environment—are generally deemed outside of the scope of the CPI.

[22] See Greenlees and Mason for a description of improvements made with the 1998 and previous CPI revisions.

[23] See, for example, "Improvements in CPI procedures," *Consumer Price Index Detailed Report* (Bureau of Labor Statistics, March 1990, August 1992), pp. 3–4 each issue.

[24] *Handbook of Methods* (Bureau of Labor Statistics, April 1997), chapter 17, pp. 187–88.

[25] Internal BLS memo from Walter F. Lane to Stephen G. Wright, Nov. 20, 1991, on "New Pricing Guidelines for Airline Fares."

[26] See "Improvements in CPI procedures: sample augmentation," *Consumer Price Index Detailed Report* (Bureau of Labor Statistics, February 1992), p. 3.

[27] See "Improvements to CPI procedures: lodging while out of town," *Consumer Price Index Detailed Report* (Bureau of Labor Statistics, March 1992), p. 4.

[28] See Elaine M. Cardenas, "Revision of the CPI hospital services component," *Monthly Labor Review*, December 1996, pp. 40–48.

[29] Robert Cage, "New methodology for selecting outlet samples," *Monthly Labor Review*, December 1996, pp. 49–61.

[30] Frank Ptacek and Robert M. Baskin, "Revision of the CPI housing sample and estimators," *Monthly Labor Review*, December 1996, pp. 31–39.

[31] "Changes to the treatment of utility rebates," *Consumer Price Index Detailed Report* (Bureau of Labor Statistics, July 1998), p. 5.

[32] In a December 1998 announcement, the Bureau estimated that a hypothetical 1989 update would have reduced the CPI's subsequent growth rate, but that later updates would have had smaller or countervailing effects. The Bureau suggested that more frequent updates would have a small upward effect on the index in some future years and a small downward effect in other years.

[33] Call (202) 606–7000.

[34] The CPI-U-X1 was an experimental measure of the all-items index using an estimate of rental equivalence from 1967 through 1982.

PREPARED STATEMENT OF REPRESENTATIVE PETE STARK, RANKING MINORITY MEMBER

I want to welcome Commissioner Abraham to the Committee once again this morning.

Yesterday, Congress passed an $800 billion tax cut, based on budget surpluses that have not yet materialized. This one action has the potential of reversing a decade of economic prosperity, the likes of which we have not experienced in over 30 years.

The unemployment rate has been low and falling, with no evidence of renewed inflation. Private investment, employment and the economy as a whole have been growing. And most importantly, salaries and incomes have been rising after 20 years of stagnation.

Although there remains much to be done to insure that everyone shares in the benefits of this prosperity, in general, most Americans are better off today than they were a decade ago.

If enacted, I fear the $800 billion tax cut could put an end to the prosperity we have been enjoying and return us to the days of large budget deficits and stagnant wages.

The link between the $800 billion tax cut and all the data we are about to receive from Commissioner Abraham this morning is productivity.

Yesterday the BLS reported that productivity growth during the second quarter was slightly above 1 percent. By contrast, average productivity growth was above 3 percent over the five proceeding quarters. Healthy productivity growth is necessary to sustain high levels of economic growth and improvements in wages and salaries, without igniting inflation. We must do all we can to insure that productivity growth remains high.

Private investment in plant and equipment, education and training and research and development are key to raising productivity growth. Some of my colleagues like to argue that cutting taxes alone promotes more investment. But if we learned anything from the last 20 years, it is that investors are much smarter than that. They know that the real cost of capital—based on interest rates and inflation—is more important than tax cuts. If we want to sustain the prosperity of the last few years, we must be vigilant against the prospect of returning to large budget deficits, which would push up interest rates and stifle private investment once

again. I hope the President keeps his pledge and vetoes this massive tax cut bill.

Recent statistical releases have raised some fears over the prospect of renewed inflation. First, it is important to remember not to read too much into one month's or quarter's data. Second, I return to what I just said: Modest increases in wages and prices do not need to be inflationary, as long as productivity growth is strong.

I want to especially welcome Commissioner Abraham before the Committee this morning. I also want to thank Vice Chairman Saxton for holding this hearing. You may be interested in learning that I have recently performed my own statistical analysis, which suggests that there may be an inverse relationship between how often we hold these hearings and the employment situation. It seems that we meet less often during periods of low unemployment, and more often during periods of high unemployment. Regardless of any trend, I want to assure you that whenever you are here, I am glad to hear whatever news you bring and learn from you and your colleagues about what is happening to American workers and their families.

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