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THE EMPLOYMENT SITUATION: MAY 1998

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before the

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CONGRESS OF THE UNITED STATES

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THE EMPLOYMENT SITUATION: MAY 1998

Friday, June 5, 1998

HOUSE OF REPRESENTATIVES,
JOINT ECONOMIC COMMITTEE,
WASHINGTON, D.C.

The Committee met, pursuant to notice, at 9:30 a.m., in Room 1334, Longworth House Office Building, the Honorable Jim Saxton, Chairman of the Committee, presiding.

Present: Representatives Saxton and Hinchey.

Staff Present: Christopher Frenze, Juanita Morgan, Robert Keleher, Darryl Evans, Dan Lara, Howard Rosen, and Tami Ohler.

OPENING STATEMENT OF REPRESENTATIVE JIM SAXTON, CHAIRMAN

Representative Saxton. Good morning. 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 an employment increase of 296,000. The unemployment rate remained at 4.3 percent, its lowest level since the Nixon Administration.

The data released today confirm the continuation of the business cycle expansion that began in 1991. As I have pointed out many times before, this expansion has been sustained and lengthened by the noninflationary policy of the Fed.

In recent quarters, the Federal Reserve has held short-term interest rates steady, resisting the calls of some for higher interest rates. The research of the Joint Economic Committee supports this current stance of the Federal Reserve policy and supports its continuation into the future. The forward-looking price indicators used by the JEC - that is, bond yields, commodity prices and the dollar - show no signs of inflation or inflation expectations.

There is no evidence of inflation that would justify a Federal Reserve interest rate hike at this time. Current Federal Reserve policy is sound and should be maintained. The potential dangers of a tightening in

monetary policy are especially important given the current strength of the dollar and resulting implications for the economies of other nations. Federal Reserve policy should stay on its current prudent course.

Commissioner, thank you again for coming to visit with us today. We appreciate the opportunity to have this public conversation with you, and we are anxious to hear your statement.

Commissioner, the floor is yours.

OPENING STATEMENT OF KATHARINE G. ABRAHAM, COMMISSIONER, BUREAU OF LABOR STATISTICS: ACCOMPANIED BY JOHN M. GALVIN, ASSISTANT COMMISSIONER FOR INDUSTRIAL PRICES; PHILIP L. RONES, ASSISTANT COMMISSIONER OF CURRENT EMPLOYMENT ANALYSIS; AND EDWIN DEAN, ASSOCIATE COMMISSIONER, OFFICE OF PRODUCTIVITY AND TECHNOLOGY

Ms. Abraham. Thank you very much, Mr. Chairman, Mr. Hinchey. I, as always, appreciate the opportunity to be here to comment on the labor market data that we have to release.

Nonfarm payroll employment continued to increase in May; and the unemployment rate, as you have noted, was unchanged following a sharp decline in April. At 4.3 percent for the second consecutive month, the unemployment rate is at its lowest level since early 1970. The number of employees on nonfarm payrolls rose by 296,000 in May, somewhat above the average monthly gain of 260,000 for the 12 months ending in April.

All of the net job growth in May occurred in the service-producing sector. The services industry itself added 151,000 jobs, a large increase following three months of below-average gains. Business services accounted for half of the May increase, with strong gains in help supply services, which is basically temporary help agencies, and in computer and data processing services. The help supply services increase was the first in that industry since February. Elsewhere in the services industry, engineering and management services added 25,000 jobs, and employment in health services expanded by 17,000.

Retail employment advanced by 89,000 in May, the second large increase in a row following weakness in February and March. May gains were widespread in retail trade, with especially robust growth in eating and drinking places, department stores, and a category that we label miscellaneous retail establishments, which include establishments such as drugstores and gift shops.

Employment in transportation and public utilities rose by 22,000 over the month. There was a large increase in transportation employment, following much slower growth in April. In finance, insurance and real estate, 20,000 jobs were added in May, mostly in finance.

In marked contrast to the robust job gains that occurred throughout much of the service-producing sector of the economy in May, manufacturing employment fell by 26,000. This was the first substantial decrease since the industry began showing signs of weakness in February of this year. Between March 1996 and January 1998, manufacturing had added about 370,000 jobs.

Within manufacturing, job losses were generally small but fairly pervasive in May. The largest decline occurred in apparel, which shed another 9,000 jobs. Employment in that industry has been trending downward at a variable pace for 25 years now, but the rate of decline appears once again to have accelerated a bit. Small but notable declines in employment occurred over the month in electronic equipment and industrial machinery, two industries that have shown substantial job growth in recent years. There was also a small over-the-month job decline in auto manufacturing.

The factory workweek rose by three-tenths of an hour in May, offsetting most of April's decline. Nonetheless, factory hours have trended down since the beginning of the year. It is reasonable to suspect that at least some of the recent declines in manufacturing employment and manufacturing hours are related to Asia's economic problems, but we have no way of quantifying their impact.

Average hourly earnings for all private production or nonsupervisory workers rose by four cents in May, following an increase of six cents in April. Over the past year, hourly earnings were up by 4.3 percent.

Before moving to the data from the household survey, I might note that, in accordance with our standard practice, the payroll survey figures that I have just been discussing reflect the incorporation of our regularly scheduled annual benchmark adjustments. Each year, as you know, we adjust our sample-based survey estimates to full universe counts of employment, derived principally from states' unemployment insurance records. There is no benchmark source for the hours and earnings estimates, but those series are affected by this process too because of changes in the industry employment weights used to produce aggregate totals, and also the introduction of new seasonal factors. So all of these

numbers are somewhat revised from what they were as reported last month.

The impact of the revisions on employment in the March 1997, reference month is an upward adjustment of 431,000, or four-tenths of 1 percent of the total nonfarm employment level. This is about in line with the average absolute value size of these revisions in recent years. The upward adjustment indicates somewhat stronger job growth than previously reported for the year ending in March 1997. So we have revised upward our estimate of employment growth for the period March 1996 to March 1997.

Estimates of payroll employment for the post-benchmark period, that is, from April 1997, forward, also have been revised to incorporate the new benchmark levels of employment in March 1997, as well as revised seasonal adjustment and bias adjustment factors. The additional net impact of the post-benchmark revisions, though, this time around is negligible.

In addition to the benchmark revisions, we are also introducing refinements to our seasonal adjustment procedures for the hours and earnings series that we report. Those refinements have been previously announced. Their purpose is to correct for some distortions in the data that we discovered related to the varying length of payroll periods in past months.

Turning then to the data from our households survey, as has been noted already the jobless rate held at 4.3 percent in May, following a sharp decline in April. Jobless rates for all of the major demographic groups showed essentially no change over the month. Similarly, there was little change in the number of persons employed part time even though they would have preferred full-time work. This figure held at about 3.8 million, although the size of the group is down slightly over the year. Civilian employment changed little in May, and the proportion of the population that is employed held at a historically high level of 64.2 percent.

In summary then, nonfarm employment rose in May, lifted by large employment gains in services and in retail trade. Employment in manufacturing declined, following several months of little change. The jobless rate held at 4.3 percent, its lowest level in nearly three decades.

My colleagues and I, of course, would be happy to address questions about these data that you might have.

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

Representative Saxton. Thank you very much, Commissioner.

I would like to explore two areas with you this morning. The first shows the long-term trend and the continuing good picture that we see in the future for continued low rates of unemployment, high rates of job creation and, in general, a good economy. The second area I want to explore with you is the subject you talked about this morning relative to the decline in manufacturing jobs.

First, I have brought with me a chart, which is to your left. I think this chart is extremely important and holds some extremely important information. The chart shows that the unemployment rate, represented with the red line, soon began dropping after 1992, which starts the period of growth in our economy. The drop in unemployment has continued to this day. In 1998, as you correctly point out, we are at the lowest rate of unemployment that we have seen in 28 years, or as you put it, in almost three decades. That is correct.

I also note that the rate of inflation has come down during that same period of time in a surprisingly parallel fashion. As a matter of fact, I will make the point that unemployment followed the rate of inflation downward, because the rate of inflation is largely responsible for low interest rates, and, of course, Fed policy is geared to promote low interest rates and, of course, low inflation.

So I would ask you if you would comment on the statistical basis for this.

Have you watched the unemployment rate come down, and have you noted the same kind of parallel that we have seen on our Committee?

[The chart entitled, "Inflation and the Unemployment Rate Fall Together Since 1992" appears in the Submissions for the Record.]

Ms. Abraham. That certainly looks like a plot of the figures we have been reporting.

Representative Saxton. And so perhaps we can – we could say that here in Washington, D.C., while we in the Congress like to take credit for much of what has happened and while the Administration might also like to take their share of the credit for much of what has happened in the way of low rates of unemployment, the one unmistakable factor here, the one unmistakable link to a successful economy, has been a lowering of

inflation. In my opinion and in the opinion of most experts - and I don't put myself necessarily in that group, but I certainly have been able to follow their discussion and their conclusions - the one unmistakable conclusion that we seem to be able to come to is that Fed policy, in trying to target inflation and to provide for a climate in which inflation has dropped, has produced a very healthy environment.

I would also just follow up and conclude this thought by saying that as we here on the Joint Economic Committee, of course having no crystal ball to look into the future to see what is going to happen, we do know that there are several things that we can look at to determine whether or not the rate of inflation shows any signs of increasing in the foreseeable future, or in the near future. As we look at bond yields, long-term bond yields, they continue to remain low. As we look at commodity prices, they continue to show no signs of inflation or any expectations thereof. And as we look at the value of the dollar against the yen and the mark and other currencies around the world, the value of the dollar remains strong. So we continue to see no signs of inflation; and, hopefully, in an optimistic sense, we will continue to see the same kind of a growth through this business cycle that we have seen since 1991.

We have invited Chairman Greenspan to come and share his views on this with us. He was to come on a date very soon, but we found that we had a conflict. The President of Korea is to be here, and he was scheduled to be here with us at exactly the same time, so we are trying to rearrange the schedule in fairness to both the President of the Korea and Mr. Greenspan.

I am just told that we are going to do it on June 10 at 11 a.m., which is a one-hour delay in the original schedule. So, Mr. Hinchey, we will look forward to being able to explore these issues with Mr. Greenspan on June the 10th.

Commissioner, let me turn to the other issue that you brought up that I thought was sort of interesting. You have always warned us, Commissioner, that one month changes in various statistical data that you bring to us may - we may want to be cautious about drawing too many conclusions based on short term, one month statistics. In other words, one month changes are not something one would want to draw conclusions from. Is that the traditional belief that you have or the traditional concept and belief that you have brought to us during the last several years?

Ms. Abraham. I am sure that I have said that on any number of occasions. I think it does pay to be cautious about short-term changes in the numbers we bring to you each month.

Representative Saxton. Now, I suspect that you are exercising the same degree of caution with regard to the subject that you talked about this morning. You are talking about the decline in manufacturing jobs by 26,000 that occurred during the month of May?

Ms. Abraham. Yes, and I would want to be cautious about making too much out of that.

Having said that, however, we are looking at a pattern in the manufacturing employment numbers in which, for an extended period of time, we had been seeing increases in manufacturing employment going back to March of 1996. We had seen quite robust growth in manufacturing employment in October, November, December, January, so that I think that the fact that beginning in February we were not seeing those increases in employment and then this month have gotten a sizable decrease in manufacturing employment is something worth noting.

Representative Saxton. Was there a statistically significant change in the month of April?

Ms. Abraham. No. It was minus 3,000, but essentially employment in manufacturing was unchanged in April.

Representative Saxton. So it was flat in April?

Ms. Abraham. Flat in March, flat in February.

Representative Saxton. So we have seen a flattening during the past quarter of growth. Is this the first and only month in recent history when we have seen a statistically significant decline?

Ms. Abraham. Yes, that is correct.

Representative Saxton. So wouldn't it be fair for us to use a great deal of caution in drawing any conclusions about the meaning of this one statistically significant decline?

Ms. Abraham. Surely. I think it would. I think that that has to be taken in context. We were seeing fairly robust growth up through the fall and into January. I think it is clear that we are not seeing that now.

Representative Saxton. Now, you, I believe, related to us a statement that said that this could have something to do with the situation in Asia.

Ms. Abraham. Yes, I think that is correct.

Representative Saxton. That is because, obviously, many manufacturing jobs have to do with products that are exported.

Ms. Abraham. It is a little bit more than just that. Generally speaking, manufacturing produces products for exports. If you look at the industries where we have seen the largest share of the turnaround in manufacturing employment, from the pattern of growth that I have already commented on to stagnation and then, this month, some decline in manufacturing employment, the industries where that seems to be showing up most are, by and large, industries that either we export a fair share of their output, including exports to the Asian economies that have been affected by these problems, or in manufacturing industries that produce products that are also imported in significant degree.

So taking those things together, there seems to be somewhat of a pattern within manufacturing that the industries that are affected are ones where you might think that what was going on in Asia would be having an impact. But it is somewhat of an indirect inference, and we do have no way of quantifying how much of what we are seeing is that.

Representative Saxton. Now, let me ask you, as a percentage, are the employment declines in May greater in construction or manufacturing, or are they about the same?

Ms. Abraham. I haven't done that particular calculation. Let me have a look. Construction employment was down by 9,000 on a base of 5.9 million, and manufacturing employment was down 26,000 on a base of 18.8 million. Again, you really do have to be cautious about it. The over-the-month decline proportionately was very slightly larger in construction than in manufacturing.

Representative Saxton. The decline was slightly less?

Ms. Abraham. Larger, in construction.

Representative Saxton. In construction?

Ms. Abraham. Yes, than in manufacturing.

Representative Saxton. We wouldn't be able to conclude, it seems to me, that construction had anything directly or even probably indirectly to do with Asia. I mean, construction has—

Ms. Abraham. No, but in talking about the possible impact of what is going on in Asia on manufacturing employment, I really am not looking just at this month's data. What I am looking at is the pattern that is

apparent in the data, going back into the fall, and then the robust growth through January and then the change in that pattern beginning in February.

So it is really not just this month's decline that I am looking at in saying that there may be some impact on what is going on in Asia on those numbers.

Representative Saxton. But, again, this is the first month that we have seen a statistically significant decline in manufacturing. You just stated that the construction statistics show a slightly larger decline. Would you say that the construction decline had – you couldn't relate that to Asia now, could you?

Ms. Abraham. I suspect that there is someone who could tell some story that somehow linked that up, but it doesn't seem to be related in any very direct way to anything that might be going on in Asia.

The difference I think is that in construction up through April we had been seeing what really overall was very robust growth, and this is the first month where we have seen something that looks different. So in contrast to manufacturing, I think there are few months of experience in manufacturing that suggest that the trend may have shifted. In construction, it is just this one month's data.

Representative Saxton. I want to ask these questions because I don't want anyone in this room today or anyone who is listening outside this room to conclude that we had a hearing that suggested that something is happening in the American economy that we can statistically verify as having anything whatsoever to do with Asia. Your comments were speculatory in nature, based on one month's decline. Is that correct?

Ms. Abraham. It is reasonable to think, I believe, that there might be something going on in the manufacturing employment numbers that is reflecting the situation in Asia. The only evidence I have of that is the pattern of the slowdown, the change in the pattern from growth to stagnation and, this month, perhaps a decline within manufacturing. It seems to be concentrated in industries that you might think would be particularly likely to be affected by what is going on in Asia, given that they are either exporting industries or industries where we might see import competition. But it is indirect evidence, and I certainly would not want to conclude that that is all of what we are seeing in manufacturing. We can't quantify any impacts.

Representative Saxton. I appreciate that, and I appreciate your comments.

I want to again emphasize that I cannot conclude that the decline in construction, which parallels the decline in manufacturing, has anything to do with Asia. I appreciate your perspective on manufacturing jobs and trend you see.

Representative Hinchey.

OPENING STATEMENT OF REPRESENTATIVE MAURICE HINCHEY

Representative Hinchey. Well, Mr. Chairman, thank you very much.

Commissioner Abraham, it is a pleasure to see you once again and to continue to get this good news about the strength of the American economy. As you have noted, unemployment is at record lows and job creation is moving ahead very steadily. It seems to me that the Federal Reserve's monetary policy has been very good in that interest rates have not increased, although they are fairly high in real terms when you look at the rate of inflation.

Monetary policy usually follows fiscal policy, and I think that that this restrained monetary policy is a condition, in large measure, of our strong fiscal policy. The budget has been balanced and we are showing even small surpluses this year. In any case, the news that you bring us today continues to be very good.

I would like to ask a couple of questions about your report and, first of all, to follow up on the question that was just asked by the Chairman. I notice that the significant decline in manufacturing for this period is unusual and that manufacturing had been going up since March of last year, I believe; is that correct?

Ms. Abraham. Since March of 1996.

Representative Hinchey. March of 1996, even. And the decline has expressed itself in automobiles to a significant degree, if I remember correctly.

Ms. Abraham. There was this month a decrease.

Representative Hinchey. A small over-the-month job decline in auto manufacturing, so a small decline. How small was that decline?

Ms. Abraham. Let me just get the data. It was 4,000 in motor vehicles and equipment.

Representative Hinchey. Four thousand. Would you call that an anomaly in any way?

Ms. Abraham. If I look back over this series, auto manufacturing employment certainly hadn't been consistently trending down. It ticked up last month. It had ticked down the month before. We saw small increases in the prior couple of months, some significant increases at the end of last year, so there is no clear pattern. Auto manufacturing employment is up about 27,000 compared to where it was a year ago.

Representative Hinchey. Automobile employment up 27,000 from a year ago to today.

Ms. Abraham. Yes, correct.

Representative Hinchey. Well, I am asking this question because, like the Chairman, I am concerned about the economic situation in east Asia and the impact that it might have on us. I imagine that one of the ways that that impact might express itself is in the area of manufacturing, particularly in automobiles, since we import so many cars from east Asia, and because the price of automobiles is dropping as a result of overproduction.

Ms. Abraham. We had been seeing more robust growth to add to what I said, the growth that I described over the year. We have been seeing growth through late in the fall, and then we have really not seen growth since then.

Representative Hinchey. So you see the growth as the new models begin to come out, basically.

Ms. Abraham. Well, these are seasonally adjusted data, so to the extent that that occurs in the same way every year, it should be removed from data.

Representative Hinchey. Okay. Employment in government went up by 41,000, but Federal employment continued to wane. How long has the size of the Federal Government been shrinking?

Ms. Abraham. Let me get those figures in front of me. The most recent local peak in Federal employment is back in May of 1992, and it has been coming down fairly steadily ever since then.

Federal employment, excluding Postal Service employment, was at a lower level in May than it has been since February of 1966.

Representative Hinchey. And that includes, I assume, the military?

Ms. Abraham. Yes, it does.

Representative Hinchey. It does.

The increase in government employment—

Ms. Abraham. I am sorry, it includes civilian defense employees. It doesn't include the military.

Representative Hinchey. Oh, it includes only civilian defense employees.

Ms. Abraham. Let me just check that with Phil. Yes, not uniformed people, but it does include civilian employees of the Defense Department.

Representative Hinchey. Okay. So nonuniformed military employment is at its lowest level since—

Ms. Abraham. No, no, Federal employment, exclusive of Postal Service employees, is lower than it was even as far back as February of 1966. Included in that is the civilian defense employment.

Representative Hinchey. But not the uniform personnel.

Ms. Abraham. Right.

Representative Hinchey. Two-thirds of the increase in government employment was in local education. Does that mean elementary and secondary education?

Ms. Abraham. Yes.

Representative Hinchey. It does. How do we account for that increase?

Ms. Abraham. Taking a long view, local government education has been a real source of growth in employment. I don't know of anything in particular that was going on in May to account for that number.

Representative Hinchey. I was wondering if we have any figures on the growth of students at the elementary and secondary level that might indicate why these increases are occurring in elementary and secondary education.

Ms. Abraham. Oh, I am sure that what is explaining a large part of this trend is growth in the school-age population.

Representative Hinchey. There are some other interesting figures with regard to education. Your figures indicate that the higher the level of education, the lower the level of unemployment. Your figures indicate that for people with less than a high school diploma the unemployment rate is 6.7 percent. For those who have graduated from high school but no college, it drops to 3.7 percent, fully 3 percentage points.

Ms. Abraham. Yes.

Representative Hinchey. And then for those with some college but less than a bachelor's degree, 3.1 percent; and then college graduates, it is cut again by half to 1.6 percent.

Ms. Abraham. Right. It is a long-standing pattern in these data of not only are people with more education earning more, they also are less likely to be unemployed.

It is interesting, over the past year, that we have seen some narrowing of those unemployment rate differentials. The largest decline over the past year in unemployment rates has occurred among the less than high school group, which is presumably a reflection of the tightening of the labor market, though their rates remain, as you know, multiples of those for the people with more education.

Representative Hinchey. So I guess that would be explained simply by the fact that there are fewer jobs available for people with lower education and that there are more jobs for people with higher education. Are there other structural forces in the economy which prevent employment for the less educated or the rates for the less educated from falling?

Ms. Abraham. Well, I think you have pointed to the thing that I would point to which is, in essence, there have been shifts of the kinds of jobs in the economy over time towards jobs that require higher levels of skill. That has been slow and gradual but has been going on for quite a long period of time.

The other thing, of course, is that if you are a highly skilled person and you can't find work that makes use of all your skills, you can take something at a lower skill level. If you are a person who doesn't have a whole lot of education to start with, your options to do that are more limited.

Representative Hinchey. Hourly earnings continue to go up. I note that wages for private production or nonsupervisory workers rose by four cents this May, following an increase of six cents in April; and over the past year hourly earnings were up by 4.3 percent.

Ms. Abraham. Correct.

Representative Hinchey. Is that a trend that we have been seeing?

Ms. Abraham. If you look back to, say, the period from January of 1992 through January of 1994, we were seeing year-over-year increases in average hourly earnings that were in the range of 2.5 percent, roughly;

and since that time what we have seen - and I should be clear I am not making a prediction about things going forward - but, up until this point, a gradual increase over time in the rate of change in average hourly earnings. So the last couple of months the year-over-year change was 4.3 percent.

Representative Hinchey. These rates, as I understand it, are nominal and have not been adjusted for inflation, is that correct?

Ms. Abraham. That is correct. So they are nominal, not real. We do, I believe, have figures on what the real increase would be. The most recent consumer price increase change that we have is the change for April. For the year ending in April, consumer prices were up 1.4 percent. So you know, very roughly, the real change in average hourly earnings would be the 4.3 percent nominal change, minus the 1.4. So a little under 3 percent.

Representative Hinchey. Can you tell us something about the methodology you used to track productivity?

Ms. Abraham. The methodology we used to track productivity?

Representative Hinchey. Yes. How do you track productivity?

Ms. Abraham. Well, the figures that get most of the attention in terms of our productivity report are the aggregate figures. They are labor productivity figures. And, in essence, what we do is we get from the Bureau of Economic Analysis a measure of real output, that is, a nominal dollar figure deflated by a price index, and then we compare how that has been changing to how labor input has been changing. So factoring in the change in employment and the change in hours and the productivity, the increase in labor productivity is the difference, in essence, between the rate of growth of real output and the rate of growth of labor input.

Representative Hinchey. Okay. And where do the wage increases fit into that? To what extent are we seeing these wage increases tracking productivity?

Ms. Abraham. Well, it depends what wage measure you are looking at. The wage measure that we were just talking about, which is the average hourly earnings, has been running a bit ahead of the very most recent pace of growth in productivity. The most recent productivity figures at an annual rate were about 2 percent?

Mr. Dean. This quarter, 1.1.

Ms. Abraham. Over the last year?

Mr. Dean. This quarter.

Ms. Abraham. But the year-over-year change was - my recollection is that it is—

Mr. Dean. For nonfarm business, 2.1 percent.

Ms. Abraham. —Mr. Chairman, 2.1 percent. So over the year we had increases in real average hourly earnings that were about 3 percent and productivity going up at a pace of about 2 percent. If we are interested in questions of wage pressure, on costs and so on, we tend not to look at this average hourly earning series but rather to look at our employment cost index series.

The reason is it is a more comprehensive series. It covers all workers, it covers benefit costs as well as wage costs, and, also, it is calculated in a way that factors out changes in the mix of employment. If average hourly earnings are going up because we have more people employed in a high-paid industry, that is really not an indication of wage rates rising. The employment cost index nets that out.

The most recent data that we have are data for the quarter ending in March. Year over year through March of 1998, the employment cost index for all civilian workers was up about 3.3 percent. So that measure is running more in line with our most recent productivity statistics. So it depends what you look at.

Representative Hinchey. Yes. But it is quite clear that wages are going up. Hourly wages are going up; and they have been going up consistently, as you have indicated, since about 1993.

Ms. Abraham. That is correct.

Representative Hinchey. Now, I am particularly interested in this, because there were a number of studies that came out within the last couple of years. One in particular by the 20th Century Fund talked about the growing disparity in wealth and income in the United States. Are you familiar with that study or any of those studies?

Ms. Abraham. I don't think I have seen that particular study, although there has been a lot written on that general topic.

Representative Hinchey. It indicated that there was a growing disparity in wealth and income, depending on how it was looked at, either in 1970 or 1979, up until the time of these publications. Are we seeing a reversal in that? Are we seeing, in fact, a closing of the gap? Do you

have any indication that that might be the case, based upon these increases in hourly wages, which are a relatively new phenomenon?

Ms. Abraham. Well, these average hourly earnings numbers are, I think, of interest. They apply to about 80 percent of the work force, and they exclude some of the people who are best paid. There was a long period of time when we were seeing no increases in real earnings for that group, the production nonsupervisory worker group. Then over the last couple of years we have seen significant increases in their real hourly earnings.

It may be that if this persists that, in the data that people use to do these inequality calculations, we will start seeing something showing up that is a change in the trend. I don't know that we have looked at that yet or seen anything in the data that people typically look at for doing analyses of inequality, which are our household survey data.

Representative Hinchey. Mr. Rones?

Mr. Rones. I think all I wanted to add is that we have done some calculations on real earnings based on our revised earnings series that we have introduced this month. If you look at the first quarter of 1998, you see a real earnings increase of 1.2 percent, and in the quarter before that, it was up .7 percent. These are very high by historical standards.

Now this refers to the series that Commissioner Abraham was talking about, the production and nonsupervisory workers that make up roughly 80 percent of the total payroll employment.

Representative Hinchey. Thank you very much.

Representative Saxton. Thank you, Mr. Hinchey.

Commissioner, thank you for being with us this morning. We appreciate you being here again, as always, and we look forward to seeing you next month. Thank you very much.

The hearing is adjourned.

Ms. Abraham. Thank you.

[Whereupon, at 10:15 a.m., the hearing was adjourned.]

SUBMISSIONS FOR THE RECORD

PREPARED STATEMENT OF REPRESENTATIVE JIM SAXTON, CHAIRMAN

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The data released today confirm the continuation of the business cycle expansion that began in 1991. As I have pointed out many times before, this expansion has been sustained and lengthened by the non-inflationary policy of the Federal Reserve.

In recent quarters the Federal Reserve has held short-term interest rates steady, resisting the calls of some for higher interest rates. The research of the JEC supports this current stance of Federal Reserve policy and supports its continuation into the future. The forward-looking price indicators used by the JEC – bond yields, commodity prices, and the dollar – show no signs of inflation or inflation expectations.

There is no evidence of inflation that would justify a Federal Reserve interest rate hike at this time. Current Federal Reserve policy is sound and should be maintained. The potential dangers of a tightening in monetary policy are especially important given the current strength of the dollar and resulting implications for the economies of other nations. Federal Reserve policy should stay on its current prudent course.

Inflation and the Unemployment Rate Fall Together Since 1992
Civilian Unemployment Rate
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
Unemployment Rate
CPI-U
1992
1993
1994
1995
1996
1997
4.5
4.0
3.5
3.0
2.5
2.0
CPI-U: All Items Less Food and Energy
% Change-Year to Year SA, 1982-84=100
Source: St. Louis Federal Reserve Bank and JEC calculations.

PREPARED STATEMENT OF KATHARINE G. ABRAHAM, COMMISSIONER

Mr. Chairman and Members of the Committee:

I would like to thank you for the opportunity to comment on the labor market data released this morning.

Nonfarm payroll employment continued to increase in May, and the unemployment rate was unchanged following a sharp decline in April. At 4.3 percent for the second consecutive month, the unemployment rate is at its lowest level since early 1970. The number of employees on nonfarm payrolls rose by 296,000 in May, after seasonal adjustment, somewhat above the average monthly gain of 260,000 for the 12 months ending in April.

All of the net job growth in May occurred in the service-producing sector. The services industry itself added 151,000 jobs, a large increase following 3 months of below-average gains. Business services accounted for half of the May increase, with strong gains in help supply services and in computer and data processing services. The help supply services increase was the first in that industry since February. Elsewhere in the services industry, engineering and management services added 25,000 jobs, and employment in health services expanded by 17,000.

Retail employment advanced by 89,000 in May, the second large increase in a row following weakness in February and March. May gains were widespread in the industry, with especially robust growth in eating and drinking places, department stores, and miscellaneous retail establishments, such as drug stores and gift shops.

Employment in transportation and public utilities rose by 22,000 over the month. There was a large increase in transportation employment (17,000) following much slower growth in April. In finance, insurance, and real estate, 20,000 jobs were added in May, mostly in finance. Government employment rose by 41,000; two-thirds of the increase occurred in local education. Federal employment continued to wane.

In marked contrast to the robust job gains that occurred throughout much of the service-producing sector of the economy in May, manufacturing employment fell by 26,000. This was the first substantial decrease since the industry began showing signs of weakness in February of this year. Between March 1996 and January 1998, manufacturing had added about 370,000 jobs.

Within manufacturing, job losses were generally small but fairly pervasive in May. The largest decline occurred in apparel, which shed

another 9,000 jobs. Employment in this industry has been trending downward at a variable pace for 25 years, but the rate of decline appears once again to have accelerated a bit. Small but notable declines occurred over the month in electronic equipment and industrial machinery, two industries that have shown substantial job growth in recently years. There was also a small over-the-month jobs decline in auto manufacturing.

The factory workweek rose by three-tenths of an hour in May, offsetting most of April's decline (four-tenths of an hour, as revised); nevertheless, factory hours have trended down since the beginning of this year. It is reasonable to suspect that at least some of the recent declines in manufacturing employment and hours are related to Asia's economic problems, but we have no way of quantifying their impact.

Employment in the construction industry edged down by 9,000 in May, following strong job growth since last fall. Mining employment continued to ebb in May, and has declined by 13,000 since the most recent series peak in September 1997. Mining employment generally has been receding since the late 1970s.

Average hourly earnings for all private production or nonsupervisory workers rose by 4 cents in May, following an increase of 6 cents in April. Over the past year, hourly earnings were up by 4.3 percent.

Before moving to the data from the household survey, I would like to note that, in accordance with standard practice, these payroll survey figures reflect the incorporation of our regularly scheduled annual benchmark adjustments. Each year, we adjust our sample-based survey estimates to full universe counts of employment, derived principally from the administrative records of the state unemployment insurance tax system. There is no benchmark source for the hours and earnings data, but these series may be affected by the benchmark process because of changes in the industry employment weights and the introduction of new seasonal factors.

The impact of the revisions on employment in the March 1997 reference month is an upward adjustment of 431,000, or four-tenths of one percent of the total nonfarm employment level. This is roughly in line with the average percent adjustment over the past decade. The upward adjustment indicates somewhat stronger job growth than previously reported for the year ending in March 1997. Estimates of payroll employment for the post-benchmark period, April 1997 forward,

also have been revised to incorporate the new benchmark levels as well as revised seasonal adjustment and bias adjustment factors. The additional net impact of the post-benchmark revisions is negligible.

In addition to the benchmark revisions, we are introducing refinements to the seasonal adjustment process for hours and earnings series (as previously announced). The purpose of these methodological enhancements is to correct for distortions in the data related to the varying length of payroll periods across months.

Turning to the data from our survey of households, as I mentioned earlier, the jobless rate held at 4.3 percent in May, following a sharp decline in April. Jobless rates for all of the major demographic groups showed essentially no change over the month. Similarly, there was little change in the number of persons employed part time even though they would have preferred full-time work; this figure held at about 3.8 million, although the size of the group is down slightly over the year. Civilian employment changed little in May, and the proportion of the population that is employed held at a historically high level of 64.2 percent.

Among persons outside the labor force, there were some 1.2 million individuals (not seasonally adjusted) who were classified as "marginally attached" to the labor market in May. These are persons who want and are available for work and looked for employment at some point 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 268,000 in May (not seasonally adjusted). The numbers of marginally attached and discouraged workers have declined over the past year.

In summary, total nonfarm employment rose in May, lifted by large employment gains in services and retail trade. Employment in manufacturing declined, following several months of little change. The jobless rate held at 4.3 percent, its lowest level in nearly 3 decades.

My colleagues and I 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 98-231
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, June 5, 1998.

THE EMPLOYMENT SITUATION: MAY 1998

Nonfarm payroll employment rose in May, and the unemployment rate remained at 4.3 percent, the Bureau of Labor Statistics of the U.S. Department of Labor reported today. Nonfarm payroll employment increased by 296,000 with all the growth occurring in the service-producing sector. The number of manufacturing jobs fell, and construction employment edged down.

Chart 1. Unemployment rate, seasonally adjusted, June 1995 - May 1998

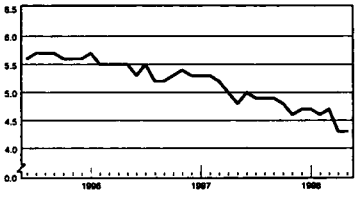
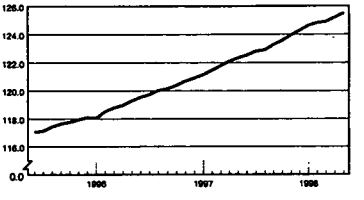


Chart 2. Nonfarm payroll employment, seasonally adjusted, June 1995 - May 1998



Unemployment (Household Survey Data)

The number of unemployed persons, 5.9 million in May, was little changed over the month, and the unemployment rate held at 4.3 percent. Both measures had fallen sharply in the previous month. Among the major demographic groups, the rates for adult men (3.5 percent), adult women (3.9 percent), teenagers (14.2 percent), whites (3.7 percent), blacks (9.0 percent), and Hispanics (6.8 percent) were essentially unchanged in May. (See tables A-1 and A-2.)

The establishment data in this release have been revised as a result of the annual benchmarking process and the updating of seasonal adjustment factors. In addition, the seasonal adjustment process for the hours and earnings series has been refined to correct for distortions associated with the varying length of pay periods across months. More information on the revisions is contained in the note beginning on page 5.

Table A. Major indicators of labor market activity, seasonally adjusted
(Numbers in thousands)

Category	Quarterly averages		Monthly data			Apr.-May change
	1997	1998[1]	1998[1]			
	IV	I	Mar.	Apr.	May	
HOUSEHOLD DATA	Labor force status					
Civilian labor force	136,813	137,524	137,523	137,242	137,364	122
Employment	130,421	131,080	130,994	131,383	131,453	70
Unemployment	6,392	6,444	6,529	5,859	5,910	51
Not in labor force	67,123	66,871	67,024	67,489	67,535	46
	Unemployment rates					
All workers	4.7	4.7	4.7	4.3	4.3	.0
Adult men	4.0	3.8	3.9	3.4	3.5	0.1
Adult women	4.0	4.3	4.3	4.1	3.9	-.2
Teenagers	15.0	14.6	15.0	13.1	14.2	1.1
White	4.0	4.0	4.1	3.6	3.7	.1
Black	9.7	9.4	9.2	8.9	9.0	.1
Hispanic origin	7.4	6.9	6.9	6.5	6.8	.3
ESTABLISHMENT DATA[2]	Employment					
Nonfarm employment	123,934	124,795	124,914	p125,216	p125,512	p296
Goods-producing[3]	25,108	25,296	25,276	p25,334	p25,298	p-36
Construction	5,761	5,881	5,860	p5,926	p5,917	p-9
Manufacturing	18,756	18,825	18,829	p18,826	p18,800	p-26
Service-producing[3]	99,826	99,500	99,638	p99,882	p100,214	p332
Retail trade	22,185	22,274	22,259	p22,328	p22,417	p89
Services	36,639	37,019	37,106	p37,195	p37,346	p151
Government	19,663	19,711	19,728	p19,764	p19,805	p41
	Hours of work[4]					
Total private	34.7	34.7	34.6	p34.5	p34.7	p0.2
Manufacturing	42.1	42.0	41.8	p41.4	p41.7	p.3
Overtime	4.9	4.8	4.8	p4.5	p4.6	p.1
	Indexes of aggregate weekly hours (1982=100)[4]					
Total private	143.1	144.3	143.8	p143.9	p144.9	p1.0
	Earnings[4]					
Average hourly earnings, total private	$12.47	$12.59	$12.63	p$12.69	p$12.73	p$0.04
Average weekly earnings, total private	432.18	436.75	437.00	p437.81	p441.73	p3.92

[1] Beginning in January 1998, household data reflect new composite estimation procedures and revised population controls.
[2] Establishment data have been revised to reflect March 1997 benchmarks, refinements to the seasonal adjustment process for the hours and earnings series, and recomputed seasonal adjustment factors.
[3] Includes other industries, not shown separately.
[4] Data relate to private production or nonsupervisory workers.
p=preliminary.

The unemployment rates for persons 25 years and older with less than a high school diploma (6.7 percent), high school graduates with no college experience (3.7 percent), and college graduates (1.6 percent) showed essentially no movement over the month. The jobless rate for persons with some college experience but no bachelor's degree rose by 0.4 percentage point to 3.1 percent in May. (See table A-3.)

Total Employment and the Labor Force (Household Survey Data)

Total employment was essentially unchanged at 131.5 million. The employment-population ratio—the proportion of the population age 16 and older with jobs—was 64.2 percent. It has remained at or near this record level since January. (See table A-1.)

About 8.1 million persons (not seasonally adjusted) held more than one job in May. These multiple jobholders comprised 6.2 percent of the total employed. (See table A-10.)

The civilian labor force, 137.4 million, was about unchanged in May, after seasonal adjustment. The labor force participation rate held at 67.0 percent. (See table A-1.)

Persons Not in the Labor Force (Household Survey Data)

About 1.2 million persons (not seasonally adjusted) were marginally attached to the labor force in May. These were people who wanted and were available for 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—totaled 268,000 in May, down from 338,000 a year earlier. (See table A-10.)

Industry Payroll Employment (Establishment Survey Data)

Nonfarm payroll employment rose by 296,000 in May, after seasonal adjustment, due to a large increase in the service-producing sector. Employment in the goods-producing sector declined, with widespread losses in manufacturing and a small decline in construction. (See table B-1.)

Manufacturing employment fell by 26,000 in May, after 3 months of little change. The largest decrease was in the apparel industry, which continued its long-term decline with a loss of 9,000 jobs. Most other industries experienced small employment losses over the month. Employment in both electronic components and industrial machinery declined for the second month in a row; these industries had added jobs steadily during 1997. In contrast, the furniture and fixtures industry continued its recent growth, adding 3,000 jobs in May, and employment in chemicals and allied products also rose by 3,000.

Construction employment edged down by 9,000 in May, after seasonal adjustment. This follows strong growth (204,000) from October to April.

Within the service-producing sector, the services industry added 151,000 jobs in May. This growth followed 3 months of gains that were well below the 1997 average of 142,000. Business services accounted for half of the May increase, with help supply services and computer services adding 26,000 and 17,000 jobs, respectively. This was the first gain for the help supply industry since February. Engineering and management services continued to grow, adding 25,000 jobs, with a sharp gain (16,000)

in management and public relations. Employment in health services increased by 17,000 in May, after weak growth in the prior month.

Employment in retail trade grew by 89,000 in May, the second large increase in a row. Gains were widespread throughout the industry, with sizable growth occurring within eating and drinking places (33,000), department stores (28,000), and miscellaneous retail establishments (18,000). In contrast, wholesale trade gained 9,000 jobs, compared with the average increase of 15,000 in the prior 12 months. The 3,000 employment gain in durable goods distribution was the smallest in nearly 5 years.

Transportation added 17,000 jobs in May, following a much smaller increase (3,000) in April. Employment in local and interurban passenger transit grew by 7,000, offsetting a decline of similar magnitude in the previous month. Communications added 6,000 jobs in May, reflecting continuing growth in the telephone industry.

Finance, insurance, and real estate added 20,000 jobs over the month, mostly in finance. Within finance, mortgage brokerages had the largest job gain (5,000) and has grown by 13 percent over the past 12 months. Security brokerages also continued steady growth, adding 3,000 jobs over the month. Insurance employment rose by 6,000 in May. Real estate employment edged down over the month, after adding 31,000 jobs from December through April.

Government payrolls rose by 41,000 in May, mainly due to an increase in local education (28,000) that was well above the industry's average for the past year. State government also had stronger-than-usual growth in May, spread about equally between the education and noneducation components. Declines continued in federal government employment.

Weekly Hours (Establishment Survey Data)

The average workweek for production or nonsupervisory workers on private nonfarm payrolls increased by 0.2 hour in May to 34.7 hours, seasonally adjusted. The manufacturing workweek rose by 0.3 hour to 41.7 hours, but is a half hour below its peak level reached last December. Factory overtime edged up by 0.1 hour in May to 4.6 hours; however, overtime hours have trended down in recent months. (See table B-2.)

The index of aggregate weekly hours of production or nonsupervisory workers on private nonfarm payrolls increased by 0.7 percent to 144.9 (1982=100), seasonally adjusted. The manufacturing index rose by 0.5 percent to 109.1. (See table B-5.)

Hourly and Weekly Earnings (Establishment Survey Data)

Average hourly earnings of production or nonsupervisory workers on private nonfarm payrolls increased 4 cents in May to $12.73, seasonally adjusted. Average weekly earnings increased by 0.9 percent to $441.73. Over the year, average hourly and weekly earnings both rose by 4.3 percent. (See table B-3.)

The Employment Situation for June 1998 is scheduled to be released on Thursday, July 2, at 8:30 A.M. (EDT).

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Revisions to Establishment Survey Data

In accordance with annual practice, the establishment survey data have been revised to reflect comprehensive universe counts of payroll jobs (benchmarks). These counts are derived principally from unemployment insurance tax records for March 1997; the benchmark process resulted in revisions to all not seasonally adjusted data series from April 1996 forward, the time period since the last benchmark was established. Seasonally adjusted employment series for all employees and women, beginning with January 1993, also have been revised, in accordance with the usual 5-year revision practice. Seasonally adjusted series for hours, indexes of aggregate weekly hours, and earnings for production or nonsupervisory workers have been revised from 1989 forward to incorporate an improved design that mitigates the effects of response and processing errors in reports from respondents with semi-monthly and monthly payrolls. Seasonally adjusted employment levels for production or nonsupervisory workers also have been revised from 1989 forward.

Table B presents revised total nonfarm employment data on a seasonally adjusted basis for the period January 1997 through February 1998. The revised data for April 1997 forward incorporate the effect of applying the rate of change measured by the sample to the new benchmark level, as well as updated bias adjustments and new seasonal adjustment factors. In terms of data revisions, the not seasonally adjusted total nonfarm employment level for March 1997 was raised by 431,000 (435,000 on a seasonally adjusted basis). By February 1998, the previously published level was revised upward by 406,000 (308,000 on a seasonally adjusted basis).

The June 1998 issue of Employment and Earnings will contain an article that discusses the benchmark and post-benchmark revisions. This issue also will provide revised seasonal adjustment factors for March through October 1998 and revised estimates for all regularly published tables containing national establishment survey data on employment, hours, and earnings.

The BLS public database on the Internet, LABSTAT, contains all historical data revised as a result of this benchmark, and updated seasonal adjustment factors. The data can be accessed through the Current Employment Statistics (CES) home page at http://stats.bls.gov/ceshome.htm.

Further information on the revisions released today may be obtained by calling 202-606-6555.

Table B. Revisions in total nonfarm employment, seasonally adjusted, January 1997-February 1998
(In thousands)

Year and month	As previously published	As revised	Difference
1997:			
January	120,909	121,146	237
February	121,162	121,457	295
March	121,344	121,779	435
April	121,671	122,092	421
May	121,834	122,325	491
June	122,056	122,534	478
July	122,440	122,811	371
August	122,492	122,894	402
September	122,792	123,280	488
October	123,083	123,568	485
November	123,512	123,944	432
December	123,866	124,289	423
1998:			
January	124,265	124,640	375
February	124,524	124,832	308

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 1998, 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 0.2 percent, ranging from zero to 0.6 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.

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]					
	May 1997	Apr. 1998	May 1998	May 1997	Jan. 1998	Feb. 1998	Mar. 1998	Apr. 1998	May 1998
TOTAL									
Civilian noninstitutional population	202,832	204,731	204,899	202,832	204,238	204,400	204,547	204,731	204,899
Civilian labor force	136,863	136,379	137,340	136,080	137,493	137,557	137,523	137,242	137,364
Participation rate	67.0	66.6	67.0	67.1	67.3	67.3	67.2	67.0	67.0
Employed	129,585	130,735	131,476	129,494	131,083	131,163	130,994	131,383	131,453
Employment-population ratio	63.9	63.9	64.2	63.8	64.2	64.2	64.0	64.2	64.2
Agriculture	3,852	3,315	3,552	3,418	3,319	3,335	3,132	3,350	3,335
Nonagricultural industries	125,912	127,421	127,924	126,076	127,764	127,829	127,862	128,033	128,118
Unemployed	6,398	5,643	5,764	6,586	6,409	6,393	6,529	5,859	5,910
Unemployment rate	4.7	4.1	4.2	4.8	4.7	4.6	4.7	4.3	4.3
Not in labor force	65,970	68,352	67,559	66,772	66,745	66,844	67,024	67,489	67,535
Men, 16 years and over									
Civilian noninstitutional population	97,559	98,503	98,591	97,559	98,241	98,331	98,405	98,503	98,591
Civilian labor force	73,191	73,336	73,853	73,099	73,862	73,780	73,695	73,799	73,783
Participation rate	75.0	74.5	74.9	74.9	75.2	75.0	74.9	74.9	74.8
Employed	69,968	70,348	70,856	69,785	70,518	70,459	70,297	70,831	70,885
Employment-population ratio	71.7	71.4	71.9	71.5	71.8	71.7	71.4	71.9	71.7
Unemployed	3,223	2,988	2,997	3,324	3,333	3,320	3,399	2,969	3,098
Unemployment rate	4.4	4.1	4.1	4.5	4.5	4.5	4.6	4.0	4.2
Men, 20 years and over									
Civilian noninstitutional population	89,766	90,580	90,622	89,766	90,391	90,476	90,532	90,580	90,622
Civilian labor force	69,146	69,480	69,752	69,080	69,852	69,801	69,751	69,907	69,824
Participation rate	77.0	76.7	77.0	76.9	77.1	76.9	76.7	76.9	76.8
Employed	66,584	67,027	67,413	66,309	67,008	66,960	66,753	67,301	67,190
Employment-population ratio	74.2	74.0	74.4	73.9	74.1	74.0	73.8	74.3	74.1
Agriculture	2,566	2,406	2,482	2,402	2,282	2,284	2,168	2,420	2,324
Nonagricultural industries	63,997	64,621	64,930	63,907	64,725	64,676	64,585	64,881	64,866
Unemployed	2,562	2,453	2,339	2,861	2,844	2,841	2,998	2,606	2,634
Unemployment rate	3.7	3.5	3.4	3.9	3.8	3.8	3.9	3.4	3.5
Women, 16 years and over									
Civilian noninstitutional population	105,274	106,228	106,308	105,274	105,997	106,070	106,141	106,228	106,308
Civilian labor force	62,772	63,043	63,387	62,971	63,641	63,777	63,827	63,443	63,581
Participation rate	59.6	59.3	59.6	59.8	60.0	60.1	60.1	59.7	59.8
Employed	59,597	60,387	60,619	59,729	60,565	60,704	60,697	60,553	60,768
Employment-population ratio	56.6	56.8	57.0	56.7	57.1	57.2	57.2	57.0	57.2
Unemployed	3,175	2,655	2,767	3,242	3,076	3,073	3,130	2,890	2,813
Unemployment rate	5.1	4.2	4.4	5.1	4.8	4.8	4.9	4.6	4.4
Women, 20 years and over									
Civilian noninstitutional population	97,767	98,583	98,688	97,767	98,420	98,471	98,534	98,583	98,688
Civilian labor force	59,884	59,945	59,434	59,129	59,852	59,721	59,771	59,466	59,573
Participation rate	60.3	60.2	60.2	60.3	60.8	60.6	60.7	60.3	60.4
Employed	56,494	57,131	57,216	56,488	57,240	57,146	57,186	57,075	57,253
Employment-population ratio	57.8	58.0	58.0	57.8	58.0	58.0	58.0	57.9	58.0
Agriculture	782	705	774	780	811	801	717	705	755
Nonagricultural industries	55,682	56,426	56,442	55,729	56,229	56,345	56,470	56,370	56,499
Unemployed	2,520	2,213	2,218	2,641	2,612	2,575	2,585	2,411	2,320
Unemployment rate	4.3	3.7	3.7	4.5	4.4	4.3	4.3	4.1	3.9
Both sexes, 16 to 19 years									
Civilian noninstitutional population	15,300	15,589	15,609	15,300	15,427	15,453	15,511	15,589	15,609
Civilian labor force	7,832	7,864	8,054	7,941	8,189	8,235	8,300	8,059	8,198
Participation rate	51.2	50.5	51.6	51.9	53.1	53.3	53.5	51.8	52.5
Employed	6,537	6,577	6,847	6,687	7,035	7,028	7,055	7,007	7,010
Employment-population ratio	42.7	42.2	43.9	43.8	45.6	45.5	45.5	45.0	44.9
Agriculture	304	304	286	256	227	270	247	225	256
Nonagricultural industries	6,233	6,273	6,552	6,441	6,808	6,758	6,808	6,782	6,754
Unemployed	1,296	977	1,207	1,244	1,154	1,207	1,245	1,052	1,156
Unemployment rate	16.5	12.9	15.0	15.7	14.1	14.7	15.0	13.1	14.2

[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 1998, data reflect new composite estimation procedures and 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]					
	May 1997	Apr. 1998	May 1998	May 1997	Jan. 1998	Feb. 1998	Mar. 1998	Apr. 1998	May 1998
WHITE									
Civilian noninstitutional population	169,782	171,141	171,257	169,782	170,810	170,917	171,016	171,141	171,257
Civilian labor force	114,486	114,360	115,281	114,562	115,253	115,392	115,297	115,057	115,309
Participation rate	67.4	66.8	67.3	67.5	67.5	67.5	67.4	67.2	67.3
Employed	110,004	110,343	111,127	109,908	110,868	110,942	110,805	110,859	111,025
Employment-population ratio	64.8	64.5	64.9	64.7	64.8	64.9	64.7	64.8	64.8
Unemployed	4,481	4,037	4,134	4,656	4,555	4,450	4,492	4,198	4,284
Unemployment rate	3.9	3.5	3.6	4.1	4.0	3.9	4.1	3.6	3.7
Men, 20 years and over									
Civilian labor force	59,137	59,185	59,488	59,001	59,282	59,372	59,201	59,307	59,398
Participation rate	77.8	77.0	77.4	77.4	77.3	77.4	77.1	77.2	77.2
Employed	57,284	57,390	57,746	57,033	57,936	57,456	57,209	57,362	57,516
Employment-population ratio	75.2	74.7	75.1	74.8	74.8	74.9	74.5	74.9	74.8
Unemployed	1,853	1,795	1,743	1,968	1,926	1,916	1,992	1,745	1,850
Unemployment rate	3.1	3.0	2.9	3.3	3.3	3.2	3.4	2.9	3.1
Women, 20 years and over									
Civilian labor force	48,706	48,801	48,920	48,845	49,077	49,057	49,077	48,955	49,019
Participation rate	59.8	58.8	59.7	60.0	60.0	59.9	59.9	59.7	59.8
Employed	47,000	47,300	47,416	47,022	47,250	47,279	47,276	47,200	47,416
Employment-population ratio	57.7	57.7	57.8	57.8	57.7	57.7	57.7	57.7	57.8
Unemployed	1,705	1,501	1,504	1,823	1,827	1,778	1,801	1,654	1,603
Unemployment rate	3.5	3.1	3.1	3.7	3.7	3.6	3.7	3.4	3.3
Both sexes, 16 to 19 years									
Civilian labor force	6,644	6,394	6,853	6,716	6,914	6,963	7,019	6,795	6,924
Participation rate	54.7	51.7	55.2	55.3	55.3	56.6	56.9	54.9	55.8
Employed	5,721	5,653	5,965	5,851	6,113	6,107	6,120	5,995	6,093
Employment-population ratio	47.1	45.7	48.1	48.2	48.8	49.6	49.6	48.5	49.1
Unemployed	923	741	888	865	802	857	899	799	831
Unemployment rate	13.9	11.6	13.0	12.9	11.6	12.3	12.8	11.8	12.0
Men	13.3	12.6	14.3	13.0	14.2	14.7	14.9	12.7	14.0
Women	14.6	10.5	11.5	12.7	8.8	9.8	10.6	10.7	9.8
BLACK									
Civilian noninstitutional population	23,950	24,288	24,317	23,950	24,196	24,229	24,257	24,289	24,317
Civilian labor force	15,370	15,776	15,709	15,424	15,788	15,865	15,971	15,907	15,795
Participation rate	64.2	64.9	64.6	64.4	65.3	65.5	65.8	65.5	64.8
Employed	13,825	14,429	14,336	13,837	14,316	14,349	14,498	14,499	14,344
Employment-population ratio	57.7	59.4	59.0	57.8	59.2	59.2	59.8	59.7	59.0
Unemployed	1,545	1,347	1,373	1,587	1,472	1,535	1,473	1,408	1,412
Unemployment rate	10.0	8.5	8.7	10.3	9.3	9.7	9.2	8.9	9.0
Men, 20 years and over									
Civilian labor force	6,849	7,050	7,009	6,851	7,012	6,974	7,044	7,097	7,009
Participation rate	71.7	72.7	72.2	71.7	72.6	72.1	72.8	73.2	72.2
Employed	6,287	6,527	6,849	6,273	6,456	6,428	6,511	6,573	6,536
Employment-population ratio	65.8	67.4	67.5	65.7	66.8	66.5	67.3	67.8	67.4
Unemployed	563	523	460	578	556	546	533	524	473
Unemployment rate	8.2	7.4	6.6	8.4	7.9	7.8	7.6	7.4	6.7
Women, 20 years and over									
Civilian labor force	7,841	7,814	7,762	7,871	7,799	7,952	7,935	7,822	7,787
Participation rate	63.7	64.2	63.7	63.9	64.3	65.5	65.3	64.3	64.0
Employed	6,987	7,193	7,130	6,988	7,178	7,285	7,284	7,182	7,130
Employment-population ratio	58.1	59.2	58.6	58.1	59.2	59.8	60.0	59.0	58.6
Unemployed	575	618	631	703	621	667	651	640	657
Unemployment rate	6.8	7.9	8.1	9.2	8.0	8.6	8.2	8.2	8.4
Both sexes, 16 to 19 years									
Civilian labor force	879	912	938	902	877	959	982	986	960
Participation rate	36.8	37.4	38.5	37.5	40.5	39.6	40.9	40.6	39.4
Employed	572	705	657	566	683	656	703	744	678
Employment-population ratio	23.8	29.0	26.9	24.6	28.3	27.1	29.0	30.6	27.8
Unemployed	307	207	282	306	294	302	280	244	283
Unemployment rate	34.8	22.7	30.0	33.9	30.1	31.5	28.1	24.7	29.4
Men	35.9	22.7	30.7	34.5	31.8	34.7	27.8	23.9	30.2
Women	34.0	22.7	29.4	33.3	28.5	28.4	30.3	25.3	28.8

See footnotes at end of table.

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]					
	May 1997	Apr. 1998	May 1998	May 1997	Jan. 1998	Feb. 1998	Mar. 1998	Apr. 1998	May 1998
HISPANIC ORIGIN									
Civilian noninstitutional population	20,236	20,915	20,975	20,236	20,741	20,789	20,851	20,915	20,975
Civilian labor force	13,630	14,179	14,329	13,780	13,964	14,149	14,256	14,369	14,458
Participation rate	67.4	67.8	68.3	68.0	67.3	68.0	68.6	68.7	68.9
Employed	12,866	13,258	13,428	12,713	12,988	13,191	13,305	13,434	13,480
Employment-population ratio	62.5	63.4	64.0	62.8	62.6	63.4	63.8	64.2	64.3
Unemployed	864	919	902	1,047	986	958	963	935	978
Unemployment rate	7.1	6.5	6.3	7.8	6.9	6.8	6.9	6.5	6.8

[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 1998, data reflect new composite estimation procedures and 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]					
	May 1997	Apr. 1998	May 1998	May 1997	Jan. 1998	Feb. 1998	Mar. 1998	Apr. 1998	May 1998
Less than a high school diploma									
Civilian noninstitutional population	30,198	29,838	29,931	30,199	29,981	29,928	29,951	29,838	29,931
Civilian labor force	12,829	12,857	12,942	12,580	12,882	12,555	12,382	12,884	12,690
Percent of population	42.5	43.4	43.2	41.7	42.9	43.0	42.4	42.7	42.4
Employed	11,884	11,938	12,147	11,568	11,771	11,976	11,800	11,773	11,839
Employment-population ratio	39.3	40.3	40.6	38.3	39.3	39.9	39.3	39.7	39.6
Unemployed	964	920	795	1,034	911	879	891	891	851
Unemployment rate	7.5	7.2	6.1	8.2	7.2	7.0	7.2	7.0	6.7
High school graduates, no college[2]									
Civilian noninstitutional population	57,392	57,484	57,708	57,392	57,608	57,418	57,685	57,484	57,708
Civilian labor force	37,791	37,374	37,627	37,699	37,787	37,807	37,831	37,340	37,496
Percent of population	65.8	65.0	65.2	65.8	65.6	65.8	65.5	65.0	65.0
Employed	36,354	35,921	36,366	36,097	36,303	36,302	36,331	35,885	36,114
Employment-population ratio	63.3	62.5	63.0	62.9	63.0	63.2	62.8	62.4	62.6
Unemployed	1,436	1,453	1,261	1,572	1,485	1,505	1,500	1,454	1,383
Unemployment rate	3.8	3.9	3.4	4.2	3.9	4.0	4.2	3.9	3.7
Less than a bachelor's degree[3]									
Civilian noninstitutional population	41,648	42,303	42,094	41,648	41,718	42,537	42,313	42,303	42,094
Civilian labor force	30,975	31,177	31,114	31,279	31,440	31,605	31,515	31,517	31,408
Percent of population	74.4	73.7	74.0	75.1	75.4	74.1	74.5	74.5	74.7
Employed	30,083	30,331	30,193	30,342	30,429	30,538	30,471	30,889	30,437
Employment-population ratio	72.2	71.7	71.8	72.9	72.9	71.8	72.0	72.5	72.4
Unemployed	891	846	921	937	1,011	967	1,043	948	971
Unemployment rate	2.9	2.7	3.0	3.0	3.2	3.1	3.3	2.7	3.1
College graduates									
Civilian noninstitutional population	40,809	42,197	42,080	40,809	41,974	42,236	42,086	42,197	42,080
Civilian labor force	32,973	33,886	33,830	32,971	33,882	33,672	33,777	33,889	33,820
Percent of population	80.8	80.3	80.4	80.8	80.7	79.7	80.3	80.5	80.6
Employed	32,301	33,466	33,297	32,885	33,040	33,089	33,146	33,419	33,384
Employment-population ratio	79.0	79.4	79.3	78.9	78.7	78.2	78.8	78.2	78.3
Unemployed	672	501	533	705	845	643	632	571	596
Unemployment rate	2.0	1.5	1.6	2.1	1.9	1.9	1.9	1.7	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 1998, data reflect new composite estimation procedures and revised population controls used in the household survey.

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Table A-4. Selected employment indicators

(In thousands)

Category	Not seasonally adjusted			Seasonally adjusted					
	May 1997	Apr. 1998	May 1998	May 1997	Jan. 1998	Feb. 1998	Mar. 1998	Apr. 1998	May 1998
CHARACTERISTIC									
Total employed, 16 years and over	129,565	130,735	131,476	129,494	131,083	131,163	130,994	131,383	131,453
Married men, spouse present	42,484	42,780	42,566	42,375	42,977	42,915	42,779	42,865	42,471
Married women, spouse present	32,575	33,008	32,838	32,620	32,793	32,821	32,872	32,873	32,805
Women who maintain families	7,913	7,938	7,943	7,820	7,794	7,884	7,776	7,813	7,848
OCCUPATION									
Managerial and professional specialty	37,391	38,631	38,672	37,256	38,090	38,164	38,454	38,643	38,641
Technical, sales, and administrative support	38,132	38,431	38,247	38,304	38,382	38,491	38,693	38,585	38,401
Service occupations	17,407	17,480	17,749	17,418	18,162	17,860	17,752	17,478	17,749
Precision production, craft, and repair	14,285	14,586	14,839	14,279	14,285	14,408	14,656	14,673	14,853
Operators, fabricators, and laborers	18,514	18,253	18,250	18,583	18,622	18,632	18,179	18,447	18,322
Farming, forestry, and fishing	3,856	3,404	3,719	3,612	3,355	3,436	3,289	3,495	3,479
CLASS OF WORKER									
Agriculture:									
Wage and salary workers	2,117	2,003	2,070	1,917	1,940	1,928	1,866	1,987	1,871
Self-employed workers	1,483	1,281	1,430	1,442	1,348	1,324	1,242	1,324	1,385
Unpaid family workers	53	31	52	52	44	41	32	28	51
Nonagricultural industries:									
Wage and salary workers	116,611	118,217	118,753	116,874	118,529	118,961	119,131	118,774	119,013
Government	18,128	18,475	18,287	17,863	18,421	18,378	18,072	18,202	18,034
Private industries	98,483	99,742	100,467	99,011	100,108	100,583	101,058	100,571	100,979
Private households	910	952	975	948	985	1,036	1,022	1,014	1,015
Other industries	97,573	98,790	99,491	98,063	99,123	99,547	100,037	99,557	99,964
Self-employed workers	9,151	9,087	9,086	9,089	8,984	8,761	8,784	9,069	9,023
Unpaid family workers	180	117	103	142	131	117	102	124	97
PERSONS AT WORK PART TIME									
All industries:									
Part time for economic reasons	3,891	3,849	3,602	4,060	4,082	3,882	3,902	3,735	3,772
Slack work or business conditions	2,182	2,090	2,005	2,295	2,282	2,123	2,189	2,074	2,104
Could only find part-time work	1,395	1,256	1,299	1,440	1,400	1,455	1,445	1,300	1,344
Part time for noneconomic reasons	18,882	18,808	19,035	18,218	18,515	18,407	18,448	18,084	18,682
Nonagricultural industries:									
Part time for economic reasons	3,707	3,498	3,478	3,853	3,885	3,743	3,726	3,608	3,630
Slack work or business conditions	2,079	2,010	1,937	2,168	2,162	2,025	2,057	1,998	2,024
Could only find part-time work	1,384	1,232	1,285	1,402	1,373	1,433	1,418	1,278	1,315
Part time for noneconomic reasons	17,983	18,204	18,411	17,654	17,888	17,786	17,929	17,470	18,067

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 1998, data reflect new composite estimation procedures and revised population controls used in the household survey.

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Table A-6. Selected unemployment indicators, seasonally adjusted

Category	Number of unemployed persons (in thousands)			Unemployment rates[1]					
	May 1997	Apr. 1998	May 1998	May 1997	Jan. 1998	Feb. 1998	Mar. 1998	Apr. 1998	May 1998
CHARACTERISTIC									
Total, 16 years and over	5,588	5,659	5,910	4.8	4.7	4.8	4.7	4.3	4.3
Men, 20 years and over	2,681	2,366	2,434	3.9	3.8	3.8	3.9	3.4	3.5
Women, 20 years and over	2,641	2,411	2,320	4.5	4.4	4.3	4.3	4.1	3.9
Both sexes, 16 to 19 years	1,244	1,052	1,156	15.7	14.1	14.7	15.0	13.1	14.2
Married men, spouse present	1,160	974	1,023	2.7	2.6	2.5	2.5	2.2	2.4
Married women, spouse present	1,075	958	933	3.2	3.1	3.1	3.3	2.8	2.8
Women who maintain families	671	640	651	7.9	7.6	7.6	7.8	7.8	7.7
Full-time workers	5,300	4,880	4,794	4.8	4.5	4.5	4.5	4.2	4.2
Part-time workers	1,303	1,170	1,157	5.3	5.4	5.2	5.7	4.8	4.7
OCCUPATION[2]									
Managerial and professional specialty	794	734	853	2.1	2.0	2.0	1.8	1.9	1.7
Technical, sales, and administrative support	1,566	1,473	1,570	3.9	4.2	4.0	4.1	3.7	3.9
Precision production, craft, and repair	703	562	577	4.7	4.6	4.1	4.5	3.7	4.4
Operators, fabricators, and laborers	1,453	1,188	1,278	7.2	5.9	6.5	6.9	6.1	6.5
Farming, forestry, and fishing	255	216	237	6.6	6.8	6.3	7.1	5.8	6.4
INDUSTRY									
Nonagricultural private wage and salary workers	5,238	4,534	4,763	5.0	4.7	4.7	4.7	4.3	4.5
Goods-producing industries	1,542	1,283	1,339	5.3	4.8	4.7	5.0	4.4	4.6
Mining	21	14	9	3.2	4.0	2.8	3.7	2.3	1.3
Construction	611	447	574	8.6	7.9	7.8	8.6	6.3	8.0
Manufacturing	910	802	756	4.3	3.9	3.7	3.8	3.9	3.6
Durable goods	453	438	375	3.6	3.4	2.9	3.6	3.5	3.0
Nondurable goods	457	365	381	5.3	4.5	5.0	4.2	4.4	4.6
Service-producing industries	3,696	3,271	3,424	4.8	4.7	4.7	4.6	4.3	4.5
Transportation and public utilities	270	236	224	3.8	3.8	3.2	3.3	3.1	3.0
Wholesale and retail trade	1,535	1,386	1,382	6.1	5.9	5.8	5.4	5.2	5.1
Finance, insurance, and real estate	239	178	159	3.1	2.5	2.6	2.6	2.8	2.0
Services	1,553	1,461	1,659	4.7	4.5	4.7	4.7	4.5	4.8
Government workers	457	382	451	2.5	2.4	2.3	2.9	2.0	2.4
Agricultural wage and salary workers	157	172	160	7.8	10.6	8.6	9.7	8.0	7.9

[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 1998, data reflect new composite estimation procedures and revised population controls used in the household survey.

Table A-8. Duration of unemployment

(Numbers in thousands)

Duration	Not seasonally adjusted			Seasonally adjusted					
	May 1997	Apr. 1998	May 1998	May 1997	Jan. 1998	Feb. 1998	Mar. 1998	Apr. 1998	May 1998
NUMBER OF UNEMPLOYED									
Less than 5 weeks	2,535	2,250	2,534	2,542	2,486	2,622	2,858	2,632	2,634
5 to 14 weeks	1,891	1,734	1,597	2,067	1,871	1,909	1,979	1,901	1,934
15 weeks and over	2,172	1,880	1,834	2,076	1,811	1,830	1,731	1,417	1,462
15 to 26 weeks	1,144	754	724	1,054	773	865	841	584	656
27 weeks and over	1,028	905	809	1,022	1,038	974	891	833	806
Average (mean) duration, in weeks	15.7	15.6	15.0	15.3	15.6	15.6	14.9	14.3	14.6
Median duration, in weeks	7.9	8.1	8.9	7.8	7.4	7.2	6.8	6.4	6.9
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	39.6	39.9	45.7	39.0	39.7	41.2	43.5	44.2	43.5
5 to 14 weeks	29.4	30.7	27.7	30.9	31.4	30.0	30.1	31.9	32.3
15 weeks and over	33.9	29.4	26.6	31.1	28.9	28.8	26.4	23.8	24.2
15 to 26 weeks	17.9	13.4	12.6	15.8	12.3	13.4	12.8	9.8	10.8
27 weeks and over	16.1	16.1	14.0	15.3	16.6	15.3	13.6	14.0	13.3

NOTE: Beginning in January 1998, data reflect new composite estimation procedures and revised population controls used in the household survey.

HOUSEHOLD DATA

Table A-7. Reason for unemployment

(Numbers in thousands)

Reason	Not seasonally adjusted			Seasonally adjusted					
	May 1997	Apr. 1998	May 1998	May 1997	Jan. 1998	Feb. 1998	Mar. 1998	Apr. 1998	May 1998
NUMBER OF UNEMPLOYED									
Job losers and persons who completed temporary jobs	2,898	2,647	2,517	2,981	2,807	2,795	2,890	2,631	2,772
On temporary layoff	704	725	808	809	680	821	880	696	766
Not on temporary layoff	1,992	1,823	1,809	2,052	1,947	1,879	2,000	1,835	1,886
Permanent job losers	1,391	1,381	1,357	(1)	(1)	(1)	(1)	(1)	(1)
Persons who completed temporary jobs	602	542	551	(1)	(1)	(1)	(1)	(1)	(1)
Job leavers	721	579	594	809	808	788	744	625	748
Reentrants	2,412	1,839	2,085	2,335	2,229	2,286	2,215	2,095	2,023
New entrants	569	479	486	573	518	643	549	511	483
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	42.1	46.9	43.7	44.3	44.1	43.7	43.8	44.9	45.8
On temporary layoff	11.0	12.8	10.5	13.6	13.5	12.8	15.1	11.9	13.0
Not on temporary layoff	31.1	34.1	33.1	30.7	30.6	30.9	30.8	33.0	32.8
Job leavers	11.3	10.3	11.5	12.1	12.7	12.3	11.5	10.7	12.4
Reentrants	37.7	34.4	38.4	35.0	35.0	35.5	34.1	35.7	33.6
New entrants	8.9	8.5	8.4	8.6	8.1	8.5	8.5	8.7	8.2
UNEMPLOYED AS A PERCENT OF THE CIVILIAN LABOR FORCE									
Job losers and persons who completed temporary jobs	2.0	1.9	1.8	2.2	2.0	2.0	2.2	1.9	2.0
Job leavers	.5	.4	.5	.6	.6	.6	.5	.5	.5
Reentrants	1.8	1.4	1.5	1.7	1.6	1.6	1.6	1.5	1.5
New entrants	.4	.4	.4	.4	.4	.4	.4	.4	.4

(1) Not available.
NOTE: Beginning in January 1998, data reflect new composite estimation procedures and 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					
	May 1997	Apr. 1998	May 1998	May 1997	Jan. 1998	Feb. 1998	Mar. 1998	Apr. 1998	May 1998
U-1 Persons unemployed 15 weeks or longer, as a percent of the civilian labor force	1.6	1.2	1.1	1.5	1.3	1.3	1.3	1.0	1.1
U-2 Job losers and persons who completed temporary jobs, as a percent of the civilian labor force	2.0	1.9	1.8	2.2	2.0	2.0	2.2	1.9	2.0
U-3 Total unemployed, as a percent of the civilian labor force (official unemployment rate)	4.7	4.1	4.2	4.8	4.7	4.6	4.7	4.3	4.3
U-4 Total unemployed plus discouraged workers, as a percent of the civilian labor force plus discouraged workers	4.9	4.4	4.4	(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	5.7	5.0	5.0	(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	7.7	7.8	(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 further information, see "BLS introduces new range of alternative unemployment measures," in the October 1995 issue of the *Monthly Labor Review*. Beginning in January, 1998, data reflect new composite estimation procedures and revised population controls used in the household survey.

HOUSEHOLD DATA

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

Age and sex	Number of unemployed persons (in thousands)			Unemployment rates[1]					
	May 1997	Apr. 1998	May 1998	May 1997	Jan. 1998	Feb. 1998	Mar. 1998	Apr. 1998	May 1998
Total, 16 years and over	6,566	5,859	5,910	4.8	4.7	4.6	4.7	4.3	4.3
16 to 24 years	2,361	2,083	2,184	11.0	10.8	10.8	10.7	9.5	10.0
16 to 19 years	1,244	1,052	1,156	15.7	14.1	14.7	15.0	13.1	14.2
16 to 17 years	686	506	614	18.3	17.3	18.5	16.9	15.2	15.8
18 to 19 years	684	546	650	13.9	11.8	11.3	13.7	11.8	13.2
20 to 24 years	1,117	1,011	1,028	8.2	8.9	8.5	8.0	7.4	7.6
25 years and over	4,349	3,751	3,758	3.7	3.5	3.5	3.6	3.2	3.3
25 to 54 years	3,787	3,293	3,372	3.9	3.6	3.6	3.8	3.3	3.4
55 years and over	480	426	407	2.9	2.7	2.7	2.9	2.5	2.4
Men, 16 years and over	3,324	2,988	3,088	4.5	4.5	4.5	4.6	4.0	4.2
16 to 24 years	1,209	1,105	1,250	10.7	11.2	11.7	11.2	9.7	11.0
16 to 19 years	643	573	684	15.7	16.4	17.0	16.5	14.0	16.0
16 to 17 years	304	253	300	16.5	18.3	21.0	18.5	14.9	17.8
18 to 19 years	345	320	370	14.0	14.9	13.1	15.2	13.3	14.8
20 to 24 years	566	532	566	7.8	8.1	8.7	8.1	7.3	8.1
25 years and over	2,156	1,884	1,875	3.5	3.3	3.2	3.4	3.0	3.0
25 to 54 years	1,978	1,662	1,639	3.6	3.4	3.2	3.5	3.0	3.1
55 years and over	284	244	225	2.9	3.1	2.9	3.1	2.6	2.4
Women, 16 years and over	3,242	2,890	2,813	5.1	4.8	4.8	4.9	4.6	4.4
16 to 24 years	1,152	958	935	11.3	10.4	9.8	10.1	9.2	9.0
16 to 19 years	601	479	483	15.6	11.6	12.3	13.4	12.1	12.3
16 to 17 years	282	253	214	19.1	16.3	15.0	15.2	15.5	13.5
18 to 19 years	319	226	280	13.9	8.2	9.5	12.2	9.8	11.4
20 to 24 years	551	479	452	8.7	9.7	8.3	7.9	7.5	6.9
25 years and over	2,093	1,867	1,883	4.0	3.7	3.8	3.9	3.6	3.5
25 to 54 years	1,809	1,692	1,733	4.2	3.9	4.1	4.1	3.7	3.8
55 years and over	216	182	182	3.0	2.3	2.4	2.6	2.4	2.4

[1] Unemployment as a percent of the civilian labor force.
NOTE: Beginning in January 1998, data reflect new composite estimation procedures and 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	
	May 1997	May 1998	May 1997	May 1998	May 1997	May 1998
NOT IN THE LABOR FORCE						
Total not in the labor force	66,670	67,859	24,368	24,738	42,502	42,921
Persons who currently want a job	5,801	5,313	2,488	2,237	3,412	3,076
Searched for work and available to work now[1]	1,431	1,213	639	570	792	644
Reason not currently looking:						
Discouragement over job prospects[2]	336	288	196	181	140	108
Reasons other than discouragement[3]	1,083	946	441	408	652	537
MULTIPLE JOBHOLDERS						
Total multiple jobholders[4]	6,197	6,126	4,366	4,436	3,800	3,686
Percent of total employed	6.3	6.2	8.3	8.3	6.4	6.1
Primary job full time, secondary job part time	4,584	4,660	2,773	2,811	1,820	1,849
Primary and secondary jobs both part time	1,713	1,571	548	488	1,167	1,075
Primary and secondary jobs both full time	282	286	190	208	73	59
Hours vary on primary or secondary job	1,608	1,606	875	912	733	694

[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 those who do 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.
[3] Includes persons who think no work available, could not find work, lacks schooling or training, employer thinks too young or old, and other types of discrimination.
[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 1998, data reflect new composite estimation procedures and revised population controls used in the household survey.

ESTABLISHMENT DATA

Table B-1. Employees on nonfarm payrolls by industry

(In thousands)

Industry	Not seasonally adjusted				Seasonally adjusted					
	May 1997	Mar. 1998	Apr. 1998P	May 1998P	May 1997	Jan. 1998	Feb. 1998	Mar. 1998	Apr. 1998P	May 1998P
Total	122,973	124,008	125,058	125,114	122,325	124,840	124,832	124,914	125,216	125,512
Total private	103,055	103,860	104,938	105,025	102,811	104,954	105,112	105,186	105,452	105,707
Goods-producing	24,919	24,780	25,078	25,318	24,883	25,297	25,314	25,276	25,334	25,298
Mining	592	577	577	581	583	592	590	587	582	581
Metal mining	54.0	50.4	50.3	50.8	54	52	52	51	51	51
Coal mining	96.8	93.0	92.1	91.6	97	94	93	93	92	92
Oil and gas extraction	331.3	330.8	327.6	329.0	334	336	336	336	332	331
Nonmetallic minerals, except fuels	110.2	102.8	107.0	109.5	108	108	107	107	107	107
Construction	5,726	5,459	5,755	5,971	5,870	5,861	5,902	5,860	5,926	5,917
General building contractors	1,305.8	1,200.6	1,345.7	1,378.7	1,310	1,265	1,371	1,373	1,384	1,382
Heavy construction, except building	831.4	713.6	790.6	846.8	797	817	813	805	818	816
Special trade contractors	3,589.3	3,445.1	3,618.6	3,745.7	3,563	3,659	3,718	3,682	3,724	3,719
Manufacturing	18,599	18,744	18,746	18,766	18,620	18,824	18,822	18,829	18,826	18,800
Production workers	12,861	12,954	12,942	12,958	12,874	13,023	13,024	13,013	13,001	12,982
Durable goods	10,950	11,140	11,153	11,162	10,941	11,154	11,159	11,166	11,169	11,158
Production workers	7,521	7,657	7,660	7,660	7,504	7,699	7,676	7,699	7,664	7,648
Lumber and wood products	792.0	785.7	790.2	798.7	794	800	800	801	801	802
Furniture and fixtures	509.6	521.1	523.7	525.1	509	517	519	520	524	527
Stone, clay, and glass products	557.1	548.4	559.4	564.3	551	562	561	558	561	559
Primary metal industries	707.2	719.3	716.7	715.9	708	719	718	719	717	716
Blast furnaces and basic steel products	234.1	235.2	234.2	234.7	(1)	(1)	(1)	(1)	(1)	(1)
Fabricated metal products	1,470.9	1,494.6	1,494.2	1,495.0	1,473	1,496	1,497	1,497	1,498	1,496
Industrial machinery and equipment	2,159.1	2,211.0	2,207.9	2,205.2	2,154	2,200	2,202	2,205	2,202	2,200
Computer and office equipment	373.8	379.0	377.7	375.8	374	381	381	381	378	375
Electronic and other electrical equipment	1,671.7	1,718.4	1,714.2	1,710.0	1,678	1,719	1,720	1,722	1,720	1,716
Electronic components and accessories	643.3	679.7	676.4	673.8	646	680	680	681	678	675
Transportation equipment	1,831.4	1,888.6	1,891.0	1,894.1	1,824	1,882	1,886	1,887	1,890	1,897
Motor vehicles and equipment	980.3	1,003.5	1,004.7	1,006.5	973	1,002	1,004	1,002	1,004	1,000
Aircraft and parts	493.2	522.9	523.6	522.7	495	521	523	525	525	524
Instruments and related products	860.6	867.3	866.5	865.7	861	870	866	868	868	867
Miscellaneous manufacturing	390.1	388.0	389.0	387.5	391	389	390	389	389	388
Nondurable goods	7,649	7,604	7,593	7,604	7,679	7,670	7,663	7,663	7,657	7,642
Production workers	5,340	5,297	5,282	5,298	5,370	5,354	5,348	5,344	5,337	5,334
Food and kindred products	1,659.1	1,663.6	1,662.4	1,672.6	1,690	1,702	1,703	1,704	1,707	1,708
Tobacco products	38.0	40.5	39.5	37.4	41	40	41	41	42	41
Textile mill products	618.4	602.5	603.6	604.2	617	606	606	604	605	604
Apparel and other textile products	835.6	792.0	784.0	780.8	831	805	796	796	787	778
Paper and allied products	683.7	684.6	681.6	681.4	685	686	686	686	686	684
Printing and publishing	1,550.9	1,560.6	1,564.6	1,565.0	1,553	1,564	1,564	1,564	1,566	1,568
Chemicals and allied products	1,034.1	1,034.1	1,031.6	1,036.7	1,036	1,035	1,036	1,036	1,035	1,038
Petroleum and coal products	141.4	133.2	135.5	137.3	141	136	136	136	137	136
Rubber and misc. plastics products	905.9	1,007.8	1,008.0	1,004.5	993	1,006	1,007	1,009	1,008	1,005
Leather and leather products	82.3	85.1	84.4	83.9	92	86	86	85	84	84
Service-producing	98,054	99,228	99,980	100,796	97,442	99,343	99,518	99,638	99,882	100,214
Transportation and public utilities	6,407	6,456	6,483	6,544	6,399	6,473	6,494	6,504	6,512	6,534
Transportation	4,123	4,132	4,153	4,201	4,112	4,148	4,164	4,170	4,173	4,190
Railroad transportation	227.4	228.0	229.6	230.8	226	231	231	231	230	230
Local and interurban passenger transit	466.4	472.8	468.3	479.3	450	456	459	460	454	461
Trucking and warehousing	1,659.7	1,658.1	1,675.6	1,687.4	1,665	1,694	1,668	1,690	1,702	1,703
Water transportation	184.7	176.9	180.5	186.7	179	177	181	183	182	185
Transportation by air	1,131.3	1,136.6	1,139.0	1,143.7	1,139	1,142	1,145	1,146	1,146	1,149
Pipelines, except natural gas	14.2	14.1	14.1	14.3	14	14	14	14	14	14
Transportation services	437.2	445.9	446.2	448.4	438	444	446	446	445	448
Communications and public utilities	2,284	2,324	2,330	2,343	2,287	2,325	2,330	2,334	2,339	2,344
Communications	1,415.6	1,469.2	1,477.4	1,486.7	1,419	1,466	1,471	1,475	1,484	1,490
Electric, gas, and sanitary services	868.1	855.2	852.4	854.3	868	859	859	859	855	854
Wholesale trade	6,536	6,744	6,780	6,809	6,626	6,759	6,769	6,783	6,797	6,805
Durable goods	3,921	4,027	4,047	4,059	3,916	4,017	4,030	4,039	4,050	4,053
Nondurable goods	2,715	2,717	2,733	2,750	2,710	2,742	2,739	2,744	2,747	2,753

See footnotes at end of table.

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

(In thousands)

Industry	Not seasonally adjusted				Seasonally adjusted					
	May 1997	Mar. 1998	Apr. 1998P	May 1998P	May 1997	Jan. 1998	Feb. 1998	Mar. 1998	Apr. 1998P	May 1998P
Retail trade	21,978	21,823	22,078	22,425	21,952	22,260	22,263	22,259	22,328	22,417
Building materials and garden supplies	978.9	930.5	975.8	1,006.8	941	954	959	956	957	966
General merchandise stores	2,617.4	2,660.0	2,674.4	2,714.4	2,702	2,771	2,786	2,759	2,784	2,801
Department stores	2,298.9	2,343.2	2,356.0	2,395.9	2,376	2,439	2,457	2,428	2,448	2,476
Food stores	3,474.0	3,486.8	3,489.6	3,518.4	3,486	3,526	3,533	3,536	3,533	3,539
Automotive dealers and service stations	2,313.9	2,311.2	2,327.2	2,350.0	2,309	2,331	2,331	2,333	2,337	2,345
New and used car dealers	1,048.7	1,054.7	1,056.7	1,061.0	1,049	1,056	1,056	1,056	1,058	1,062
Apparel and accessory stores	1,070.4	1,064.0	1,075.0	1,078.9	1,095	1,108	1,100	1,098	1,104	1,105
Furniture and home furnishings stores	988.4	1,037.2	1,035.3	1,038.8	1,000	1,039	1,043	1,048	1,045	1,052
Eating and drinking places	7,786.1	7,819.8	7,876.1	7,960.3	7,837	7,885	7,894	7,845	7,880	7,913
Miscellaneous retail establishments	2,748.5	2,813.7	2,824.1	2,856.9	2,782	2,864	2,867	2,874	2,878	2,896
Finance, insurance, and real estate	7,085	7,213	7,256	7,305	7,064	7,213	7,232	7,256	7,286	7,308
Finance	3,393	3,504	3,512	3,529	3,397	3,485	3,498	3,512	3,519	3,535
Depository institutions	2,020.8	2,034.8	2,033.4	2,038.9	2,024	2,037	2,039	2,041	2,040	2,044
Commercial banks	1,455.7	1,459.0	1,455.9	1,459.2	1,459	1,463	1,464	1,465	1,461	1,463
Savings institutions	261.6	261.8	262.6	263.3	262	262	262	262	262	264
Nondepository institutions	563.5	602.3	605.7	612.7	563	589	593	602	605	612
Mortgage bankers and brokers	251.5	278.8	279.1	284.3	250	264	270	276	278	283
Security and commodity brokers	589.2	630.5	634.2	637.6	591	625	629	633	636	639
Holding and other investment offices	219.8	236.3	239.0	239.9	219	234	235	236	238	240
Insurance	2,249	2,298	2,308	2,317	2,249	2,293	2,297	2,302	2,311	2,317
Insurance carriers	1,526.5	1,562.7	1,571.6	1,578.2	1,527	1,558	1,560	1,566	1,574	1,579
Insurance agents, brokers, and service	722.8	735.7	736.2	738.3	722	735	737	736	737	738
Real estate	1,423	1,411	1,436	1,459	1,418	1,435	1,439	1,444	1,456	1,454
Services[2]	36,050	36,864	37,261	37,525	35,887	36,932	37,020	37,106	37,195	37,346
Agricultural services	733.8	617.3	711.8	757.8	677	696	696	695	708	700
Hotels and other lodging places	1,762.5	1,688.8	1,721.6	1,787.2	1,741	1,762	1,766	1,755	1,766	1,768
Personal services	1,171.0	1,239.8	1,238.7	1,178.3	1,184	1,176	1,177	1,178	1,182	1,180
Business services	7,903.5	8,285.6	8,352.3	8,468.1	7,831	8,351	8,384	8,412	8,417	8,491
Services to buildings	941.7	959.5	965.1	976.8	936	960	961	966	963	972
Personnel supply services	2,924.1	3,041.2	3,078.0	3,143.5	2,951	3,139	3,152	3,149	3,138	3,165
Help supply services	2,602.3	2,710.8	2,743.5	2,811.5	2,631	2,804	2,820	2,819	2,802	2,828
Computer and data processing services	1,389.0	1,544.5	1,559.0	1,574.1	1,391	1,507	1,522	1,538	1,560	1,577
Auto repair, services, and parking	1,124.3	1,144.2	1,145.5	1,153.5	1,123	1,147	1,144	1,145	1,148	1,152
Miscellaneous repair services	375.8	378.8	382.9	384.2	375	381	382	382	383	384
Motion pictures	541.0	567.2	561.5	557.8	541	563	559	565	563	559
Amusement and recreation services	1,652.1	1,502.7	1,634.8	1,758.4	1,554	1,633	1,641	1,647	1,658	1,685
Health services	9,690.6	9,848.3	9,859.2	9,882.7	9,701	9,837	9,852	9,867	9,872	9,889
Offices and clinics of medical doctors	1,735.5	1,790.3	1,798.6	1,807.2	1,738	1,784	1,786	1,798	1,802	1,809
Nursing and personal care facilities	1,751.5	1,756.8	1,755.8	1,755.5	1,757	1,759	1,761	1,761	1,760	1,760
Hospitals	3,852.6	3,924.9	3,932.5	3,939.9	3,857	3,916	3,920	3,925	3,936	3,946
Home health care services	714.2	694.8	686.6	685.5	713	705	702	696	695	683
Legal services	938.4	966.2	967.7	969.9	944	964	967	970	972	975
Educational services	2,129.7	2,324.2	2,333.7	2,245.6	2,097	2,169	2,179	2,189	2,198	2,212
Social services	2,526.1	2,595.9	2,612.7	2,631.5	2,501	2,570	2,577	2,587	2,595	2,606
Child day care services	590.0	599.3	593.6	596.5	569	575	574	575	576	574
Residential care	712.3	742.0	745.0	747.8	712	736	741	744	746	748
Museums and botanical and zoological gardens	92.9	88.2	90.5	94.6	90	91	92	92	92	91
Membership organizations	2,249.3	2,248.6	2,253.0	2,264.8	2,250	2,260	2,261	2,263	2,266	2,265
Engineering and management services	2,955.8	3,178.7	3,200.4	3,197.7	2,974	3,137	3,148	3,164	3,179	3,204
Engineering and architectural services	860.3	895.1	902.1	913.1	862	897	899	904	911	915
Management and public relations	930.8	1,007.5	1,015.8	1,031.0	931	1,004	1,007	1,012	1,012	1,028
Services, nec	49.4	50.8	51.2	51.4	(1)	(1)	(1)	(1)	(1)	(1)
Government	19,916	20,126	20,130	20,189	19,514	19,686	19,720	19,728	19,764	19,806
Federal	2,707	2,662	2,668	2,677	2,704	2,670	2,676	2,671	2,675	2,672
Federal, except Postal Service	1,858.1	1,808.9	1,815.2	1,823.1	1,850	1,822	1,819	1,815	1,815	1,811
State	4,841	4,741	4,747	4,692	4,583	4,813	4,813	4,819	4,820	4,832
Education	1,961.8	2,054.8	2,060.4	1,992.6	1,904	1,924	1,924	1,928	1,928	1,931
Other State government	2,879.2	2,676.1	2,686.8	2,699.7	2,679	2,889	2,889	2,891	2,894	2,701
Local	12,570	12,723	12,715	12,819	12,227	12,403	12,431	12,438	12,469	12,501
Education	7,250.6	7,390.7	7,365.4	7,402.2	6,874	6,980	6,992	7,003	7,023	7,051
Other local government	5,319.5	5,331.8	5,349.4	5,416.3	5,353	5,423	5,432	5,435	5,446	5,450

[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.

NOTE: Data have been revised to reflect March 1997 benchmarks and recomputed seasonal adjustment factors.

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

Industry	Not seasonally adjusted				Seasonally adjusted					
	May 1997	Mar. 1998	Apr. 1998[p]	May 1998[p]	May 1997	Jan. 1998	Feb. 1998	Mar. 1998	Apr. 1998[p]	May 1998[p]
Total private	34.5	34.5	34.2	34.5	34.7	34.8	34.7	34.8	34.5	34.7
Goods-producing	41.4	40.9	40.1	41.1	41.4	41.6	41.4	41.0	40.8	41.0
Mining	45.8	43.4	43.5	44.4	45.8	45.4	44.4	43.8	44.2	44.8
Construction	39.7	37.9	38.0	39.3	39.2	39.8	39.2	38.5	38.7	38.7
Manufacturing	41.9	41.7	40.7	41.6	42.0	42.1	42.0	41.8	41.4	41.7
Overtime hours	4.7	4.6	4.0	4.5	4.9	4.9	4.8	4.8	4.5	4.6
Durable goods	42.8	42.4	41.3	42.3	42.9	42.8	42.8	42.5	41.9	42.2
Overtime hours	5.0	4.9	4.1	4.8	5.2	5.2	5.1	5.0	4.6	4.8
Lumber and wood products	41.3	40.8	40.8	41.3	41.1	41.2	41.1	41.2	41.2	41.1
Furniture and fixtures	39.8	40.4	39.7	40.3	40.3	41.0	41.0	40.7	40.7	40.9
Stone, clay, and glass products	43.7	42.6	42.9	44.1	43.3	43.7	43.6	43.2	43.3	43.7
Primary metal industries	44.7	44.5	43.4	44.2	44.9	45.2	44.8	44.8	43.9	44.2
Blast furnaces and basic steel products	44.7	45.2	44.7	45.3	44.9	46.0	45.4	45.3	44.8	45.5
Fabricated metal products	42.5	42.2	40.9	41.1	42.6	42.7	42.7	42.4	41.8	41.2
Industrial machinery and equipment	43.5	43.5	41.9	43.2	43.6	43.6	43.4	43.3	42.6	43.1
Electronic and other electrical equipment	41.8	41.4	40.3	41.2	42.1	41.8	41.9	41.4	41.0	41.4
Transportation equipment	44.7	43.7	41.4	43.6	44.5	43.9	43.8	43.4	42.1	43.4
Motor vehicles and equipment	45.5	43.9	41.2	44.1	45.1	43.9	43.8	43.5	42.0	43.3
Instruments and related products	41.7	41.7	40.6	41.2	42.0	41.9	42.0	41.5	41.3	41.4
Miscellaneous manufacturing	40.0	40.5	39.4	39.8	40.2	40.4	40.4	40.5	40.1	39.9
Nondurable goods	40.8	40.7	40.0	40.8	40.8	41.1	40.9	40.8	40.7	40.8
Overtime hours	4.1	4.2	3.8	4.2	4.4	4.4	4.4	4.4	4.2	4.4
Food and kindred products	41.0	40.9	40.3	41.3	41.4	41.8	41.5	41.5	41.2	41.6
Tobacco products	38.7	37.0	36.9	38.7	38.8	38.3	38.5	37.7	38.1	39.0
Textile mill products	41.2	41.2	40.1	41.1	41.4	41.8	41.5	41.2	41.0	41.3
Apparel and other textile products	37.1	37.2	36.5	37.5	37.2	37.4	37.4	37.2	37.7	37.5
Paper and allied products	43.4	43.1	42.5	43.4	43.8	43.6	43.4	43.4	43.0	43.6
Printing and publishing	38.1	38.4	37.8	38.0	38.4	38.5	38.5	38.4	38.2	38.3
Chemicals and allied products	43.1	43.4	42.8	42.0	43.3	43.5	43.4	43.4	43.0	42.1
Petroleum and coal products	42.4	43.2	42.9	42.4	(2)	(2)	(2)	(2)	(2)	(2)
Rubber and misc. plastics products	41.7	41.5	40.9	41.8	41.7	42.0	41.8	41.5	41.6	42.0
Leather and leather products	38.2	37.7	36.7	37.9	38.3	38.3	38.6	37.9	37.5	37.8
Service-producing	32.7	32.9	32.6	32.8	32.9	33.0	33.0	32.8	32.9	33.0
Transportation and public utilities	39.3	39.4	39.1	39.7	39.6	40.0	39.9	39.8	39.6	40.0
Wholesale trade	38.5	38.4	38.1	38.4	38.6	38.5	38.5	38.3	38.3	38.5
Retail trade	28.8	28.7	28.7	29.0	28.9	29.0	29.0	28.9	29.0	29.1
Finance, insurance, and real estate	35.9	36.0	36.1	36.1	(2)	(2)	(2)	(2)	(2)	(2)
Services	32.4	32.7	32.4	32.5	32.6	32.8	32.7	32.6	32.6	32.7

[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.

NOTE: Data have been revised to reflect March 1997 benchmarks, refinements to the seasonal adjustment process for the hours series, and recomputed seasonal adjustment factors.

ESTABLISHMENT DATA

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			
	May 1997	Mar. 1998	Apr. 1998P	May 1998P	May 1997	Mar. 1998	Apr. 1998P	May 1998P
Total private	$12.18	$12.68	$12.69	$12.70	$420.21	$437.46	$434.00	$438.15
Seasonally adjusted	12.21	12.63	12.69	12.73	423.69	437.00	437.81	441.73
Goods-producing	13.83	14.18	14.23	14.29	572.56	579.96	570.62	587.32
Mining	16.01	16.89	16.82	16.76	733.26	733.03	731.67	744.14
Construction	15.86	16.29	16.35	16.45	629.64	617.39	621.30	646.49
Manufacturing	13.06	13.47	13.46	13.47	548.05	561.70	547.82	560.35
Durable goods	13.63	14.02	13.98	13.98	583.36	594.45	576.55	591.35
Lumber and wood products	10.72	10.95	10.99	11.06	442.74	446.76	448.39	456.78
Furniture and fixtures	10.47	10.80	10.86	10.78	416.71	436.32	431.14	434.43
Stone, clay, and glass products	13.12	13.46	13.53	13.55	573.34	572.05	564.73	597.56
Primary metal industries	15.09	15.52	15.65	15.60	674.52	690.64	679.21	689.52
Blast furnaces and basic steel products	17.87	18.32	18.66	18.55	798.79	826.06	834.10	840.32
Fabricated metal products	12.74	13.01	12.90	12.68	541.45	549.02	527.61	521.15
Industrial machinery and equipment	13.94	14.36	14.32	14.35	606.39	624.66	600.01	619.92
Electronic and other electrical equipment	12.55	13.06	13.09	13.11	524.59	540.66	527.53	540.13
Transportation equipment	17.43	17.92	17.72	17.81	779.12	783.10	733.61	780.08
Motor vehicles and equipment	17.94	18.52	18.39	18.39	816.27	813.03	757.26	811.00
Instruments and related products	13.48	13.73	13.76	13.79	562.12	572.54	558.66	568.15
Miscellaneous manufacturing	10.51	10.79	10.76	10.79	420.40	437.00	423.94	429.44
Nondurable goods	12.26	12.63	12.71	12.70	497.76	514.04	508.40	515.62
Food and kindred products	11.47	11.70	11.75	11.81	470.27	478.53	473.53	487.75
Tobacco products	20.79	18.54	18.79	20.01	804.57	985.98	893.35	774.39
Textile mill products	9.95	10.29	10.39	10.36	409.94	423.95	416.64	425.80
Apparel and other textile products	8.22	8.43	8.48	8.49	304.96	313.60	309.52	318.38
Paper and allied products	14.97	15.27	15.47	15.51	649.70	658.14	657.48	673.13
Printing and publishing	12.93	13.36	13.32	13.36	492.63	513.02	503.50	507.68
Chemicals and allied products	16.48	16.97	17.13	17.03	710.29	736.50	733.16	715.26
Petroleum and coal products	19.95	21.16	20.99	20.52	845.88	914.11	900.47	870.05
Rubber and misc. plastics products	11.50	11.78	11.84	11.85	479.55	488.87	484.26	495.33
Leather and leather products	8.92	9.32	9.32	9.42	340.74	351.36	342.04	357.02
Service-producing	11.62	12.19	12.19	12.18	379.97	401.05	397.39	399.50
Transportation and public utilities	14.76	15.24	15.26	15.20	580.07	600.46	596.67	603.44
Wholesale trade	13.33	13.86	13.92	13.97	513.21	532.22	530.35	536.45
Retail trade	8.27	8.67	8.71	8.73	238.18	248.83	249.98	253.17
Finance, insurance, and real estate	13.21	13.97	13.98	13.97	474.24	514.10	504.68	504.32
Services	12.16	12.77	12.75	12.73	393.98	417.56	413.10	413.73

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

P = preliminary.

NOTE: Data have been revised to reflect March 1997 benchmarks, refinements to the seasonal adjustment process for the hours and earnings series, and recomputed seasonal adjustment factors.

ESTABLISHMENT DATA

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

Industry	May 1997	Jan. 1998	Feb. 1998	Mar. 1998	Apr. 1998P	May 1998P	Percent change from: Apr. 1998-May 1998
Total private:							
Current dollars	$12.21	$12.54	$12.59	$12.63	$12.69	$12.73	0.3
Constant (1982) dollars[2]	7.53	7.66	7.69	7.72	7.73	N.A.	(3)
Goods-producing	13.85	14.16	14.21	14.25	14.26	14.28	.1
Mining	16.09	16.47	16.76	16.62	16.70	16.80	.6
Construction	15.93	16.27	16.34	16.40	16.46	16.49	.2
Manufacturing	13.10	13.38	13.42	13.46	13.44	13.47	.2
Excluding overtime[4]	12.38	12.66	12.69	12.73	12.76	12.77	.1
Service-producing	11.66	12.00	12.06	12.10	12.18	12.22	.3
Transportation and public utilities	14.83	15.21	15.25	15.27	15.31	15.30	-.1
Wholesale trade	13.37	13.75	13.81	13.84	13.90	14.01	.8
Retail trade	8.28	8.56	8.59	8.64	8.71	8.74	.3
Finance, insurance, and real estate	13.25	13.72	13.83	13.85	14.00	14.01	.1
Services	12.22	12.54	12.60	12.65	12.74	12.79	.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 .1 percent from March 1998 to April 1998, 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.

NOTE: Data have been revised to reflect March 1997 benchmarks, refinements to the seasonal adjustment process for the hours and earnings series, and recomputed seasonal adjustment factors.

Table B-6. 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					
	May 1997	Mar. 1998	Apr. 1998P	May 1998P	May 1997	Jan. 1998	Feb. 1998	Mar. 1998	Apr. 1998P	May 1998P
Total private	141.1	141.8	141.7	144.7	141.2	144.5	144.4	143.8	143.9	144.9
Goods-producing	114.8	111.8	111.5	115.5	114.5	117.1	116.4	115.1	114.7	115.1
Mining	58.5	54.1	54.2	55.8	58.7	58.3	57.0	55.8	55.5	56.1
Construction	150.8	143.0	153.2	165.2	156.6	165.0	162.4	158.7	161.4	160.7
Manufacturing	108.6	109.0	108.3	108.7	109.1	110.6	110.3	109.7	108.6	109.1
Durable goods	112.3	113.4	110.2	113.0	112.2	114.6	114.5	113.7	112.1	112.7
Lumber and wood products	142.4	139.1	140.2	143.4	142.1	143.8	143.4	143.6	143.8	143.2
Furniture and fixtures	126.4	132.1	130.6	132.4	128.0	132.8	133.1	132.7	133.7	134.7
Stone, clay, and glass products	114.7	109.5	113.4	117.7	112.3	116.5	116.2	113.9	114.1	115.4
Primary metal industries	93.6	95.3	92.6	94.1	94.1	96.6	95.8	95.5	93.7	94.2
Blast furnaces and basic steel products	72.3	73.9	72.9	73.8	72.5	75.6	74.6	74.4	73.2	74.3
Fabricated metal products	117.0	118.4	114.7	115.0	117.3	119.8	120.1	119.1	117.5	115.4
Industrial machinery and equipment	109.3	112.4	106.0	111.1	108.9	111.7	111.3	111.1	108.1	110.3
Electronic and other electrical equipment	109.4	111.1	107.8	110.0	110.6	112.8	112.8	111.3	110.0	110.9
Transportation equipment	129.2	129.8	122.7	129.7	127.7	130.0	130.1	128.7	124.4	127.5
Motor vehicles and equipment	170.4	168.4	155.8	166.7	167.4	166.8	166.6	164.6	158.7	162.2
Instruments and related products	75.8	77.3	75.2	76.3	76.3	77.4	77.6	76.8	76.5	76.8
Miscellaneous manufacturing	103.3	103.6	101.4	101.8	104.0	103.8	103.8	104.1	103.4	101.8
Nondurable goods	103.6	102.9	101.0	102.9	104.8	105.2	104.6	104.3	103.8	104.1
Food and kindred products	113.3	113.6	111.7	115.4	117.1	119.2	118.5	118.5	118.0	119.4
Tobacco products	54.1	57.5	55.7	54.9	61.5	60.7	61.0	59.7	62.3	61.8
Textile mill products	89.7	87.7	85.5	87.6	90.0	89.6	88.6	87.8	87.4	87.9
Apparel and other textile products	74.7	69.8	67.6	69.1	74.2	71.6	70.8	70.2	69.9	68.8
Paper and allied products	110.4	109.7	107.5	109.9	111.7	111.6	111.1	111.1	109.8	110.8
Printing and publishing	125.2	125.4	123.5	123.8	126.3	126.3	126.0	125.3	124.7	124.9
Chemicals and allied products	100.1	103.3	101.7	102.0	100.8	103.1	103.2	103.4	102.6	102.2
Petroleum and coal products	75.9	71.1	72.4	72.4	76.2	75.0	71.9	73.6	72.4	72.3
Rubber and misc. plastics products	145.9	147.1	144.9	147.9	145.6	148.4	147.9	147.2	147.5	148.6
Leather and leather products	41.5	37.3	35.6	36.5	41.8	38.3	38.7	37.3	36.3	36.0
Service-producing	152.9	154.9	155.3	157.8	153.2	156.9	157.0	156.7	157.0	158.3
Transportation and public utilities	129.8	128.5	127.9	131.3	130.3	131.5	131.1	130.9	130.2	132.3
Wholesale trade	126.2	126.9	126.7	128.4	126.4	128.0	128.2	127.6	127.8	128.6
Retail trade	137.3	135.4	136.8	140.4	137.5	139.8	139.9	139.3	139.8	141.0
Finance, insurance, and real estate	128.0	134.5	132.9	133.7	129.0	132.5	133.4	133.6	134.1	134.8
Services	185.8	190.9	191.5	193.8	185.8	192.1	192.0	191.9	192.3	193.7

[1] See footnote 1, table B-2.
P = preliminary.
NOTE: Data have been revised to reflect March 1997 benchmarks, refinements to the seasonal adjustment process for the hours series, and recomputed seasonal adjustment factors.

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:												
1994	59.3	60.5	67.0	64.5	58.6	63.3	63.8	61.7	61.5	60.4	64.0	61.7
1995	62.5	60.0	54.9	55.6	47.8	55.6	54.8	59.0	58.0	55.8	54.5	58.8
1996	50.8	64.6	59.6	56.6	62.6	61.0	57.3	61.5	56.0	62.5	62.2	60.7
1997	58.0	61.4	59.8	63.6	60.1	54.8	61.1	59.1	60.0	64.3	62.4	64.9
1998	63.8	58.7	59.8	P66.3	P54.5							
Over 3-month span:												
1994	64.5	69.2	69.9	68.4	66.6	67.1	69.0	69.5	66.2	65.6	66.8	66.3
1995	63.6	61.4	59.4	53.1	55.2	53.2	59.7	60.1	59.1	58.0	56.6	54.6
1996	61.9	62.6	64.0	63.8	63.5	64.9	64.2	61.5	63.9	64.2	67.0	66.6
1997	64.9	63.3	65.6	66.2	63.9	61.2	60.1	65.9	67.4	68.1	70.6	71.9
1998	68.4	67.3	P64.3	P60.1								
Over 6-month span:												
1994	70.9	69.9	69.7	71.2	70.2	69.8	69.8	70.2	68.7	67.4	66.7	65.4
1995	66.4	60.1	59.1	57.3	58.0	60.1	57.8	60.4	59.7	59.3	61.1	63.2
1996	62.8	65.4	64.7	65.7	66.2	65.0	66.4	66.0	66.2	67.6	66.9	66.3
1997	67.6	67.0	65.3	64.9	65.6	67.3	68.0	67.3	70.6	72.3	73.3	72.6
1998	P72.2	P69.5										
Over 12-month span:												
1994	70.2	71.6	71.8	71.8	72.1	71.8	71.5	72.1	70.1	69.5	66.6	65.0
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	66.5	67.3	67.7	66.4	66.0	69.9	69.1	66.3
1997	69.8	67.6	69.2	70.1	69.8	69.8	71.2	71.2	71.1	P72.3	P71.6	
1998												
Manufacturing payrolls, 139 industries[1]												
Over 1-month span:												
1994	56.8	56.5	60.1	59.0	53.6	58.3	59.0	55.8	53.6	56.5	58.3	56.8
1995	54.7	54.3	46.4	53.2	42.4	44.2	48.4	49.6	48.6	52.2	45.3	48.2
1996	42.8	54.7	48.2	42.1	55.4	50.7	47.1	55.4	47.8	52.9	54.3	55.4
1997	49.3	54.3	50.0	56.6	51.4	52.2	50.4	48.9	56.5	57.2	56.1	60.8
1998	55.8	51.8	52.5	P47.8	P43.5							
Over 3-month span:												
1994	60.4	63.7	63.7	60.4	57.6	59.7	61.9	56.8	54.3	55.4	60.8	59.0
1995	56.8	50.0	47.8	42.1	43.2	38.8	40.8	43.5	48.2	47.1	45.3	39.9
1996	43.9	46.8	46.0	47.6	48.4	49.3	51.4	50.0	53.6	51.1	57.6	54.7
1997	54.3	49.3	54.3	54.0	55.4	50.4	47.5	52.2	57.9	62.6	64.7	65.5
1998	60.1	59.0	P51.1	P45.3								
Over 6-month span:												
1994	60.4	62.9	61.2	62.6	59.4	57.2	57.6	58.6	58.6	54.7	57.2	55.0
1995	55.4	46.4	42.8	40.3	41.4	42.4	41.0	41.0	43.9	43.2	43.2	45.3
1996	42.1	45.3	46.4	47.1	48.2	48.6	51.1	50.4	52.9	52.9	53.2	52.2
1997	54.3	54.3	51.4	52.9	51.4	55.0	56.8	57.6	60.4	64.4	67.6	65.8
1998	P62.2	P55.8										
Over 12-month span:												
1994	57.9	58.6	60.8	60.8	60.8	63.3	59.4	60.1	57.2	56.5	50.4	49.6
1995	46.0	44.2	46.0	47.6	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	54.0	51.8
1997	57.2	62.5	64.7	66.5	67.9	67.6	68.6	68.6	68.4	P69.7	P67.6	
1998												

[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. Data have been revised to reflect March 1997 benchmarks and recomputed seasonal adjustment factors.

Current Employment Statistics Program

Update on the Sample Redesign for the Payroll Survey

Bureau of Labor Statistics
June 5, 1998

Update on the Sample Redesign for the Payroll Survey

In June of 1995, the Bureau of Labor Statistics (BLS) announced plans for a comprehensive redesign of the sample of establishments for its monthly payroll survey. The Bureau's plans called for a 2-year research effort to develop the new sample design, followed by a 2-year production test of survey methods, procedures, and systems, with a phased-in implementation of the new design following thereafter. As scheduled, the research phase for the Current Employment Statistics (CES) sample redesign was completed in June 1997, and the Bureau launched a production test of the new sample design at that time. While the production test was previously scheduled to conclude in June 1999, it has been extended for one year. BLS is postponing the initial implementation of the redesign until June 2000, when it expects to introduce the first estimates from the new design, for the wholesale trade industry, with the 1999 benchmark revisions. The remaining industry divisions are scheduled to be phased in with subsequent years' benchmark releases over a 3- to 4- year period.

The one-year postponement of the redesign implementation is a result of difficulties experienced during the first year of the production test, as well as issues that arose in the ongoing CES program. The goal of the first year of the production test was to evaluate the feasibility of the CES redesign methods, systems, and procedures in a live production environment. The new probability-based methodology is much more complex than the current methodology and requires more complex operating procedures and computer systems to support it, particularly in the areas of sample updating, new respondent enrollment, and monthly data collection. The live testing during the past year identified a number of areas where the research methodologies needed to be strengthened and the operating procedures and software systems needed to be expanded in their functionality. Initial complications were experienced in establishing the regular quarterly sample updates required by the new design and in achieving high response rates from the respondents targeted as new sample members for the redesign.

Progress on software development for the new computer systems for the redesign was slowed significantly due to a redirection of systems priorities towards ensuring that the existing CES processing system is Year 2000 compliant. In addition, there were some delays in methods and procedures development over this past year due to the considerable time and effort needed to correct a calendar-related effect that was discovered to be significantly distorting month-to-month movements in current CES hours and earnings series.

This paper describes CES sample redesign research and production test activities completed to date and plans for further research, testing, and implementation.

Background - The CES survey is a federal/state cooperative program that provides monthly estimates of nonfarm payroll jobs and the hours and earnings of workers, derived from a sample of nearly 400,000 business establishments nationwide. These data are some of the most closely watched and widely used economic indicators among public and private policy makers alike. The CES program offers several important attributes to its users: timely release of data, an abundance of industry and geographic detail, and an annual benchmark to full population counts from state Unemployment Insurance (UI) tax records, which helps to maintain overall survey accuracy.

Current Design Limitations - Two limitations of the CES survey now hamper its ability to fully reflect current monthly employment trends: the lack of a probability-based sample design, and the absence of a method for directly measuring employment from new business births. Both of these limitations are now addressed in the CES survey indirectly, through use of a time series modeling technique known as bias adjustment. These limitations affect not only national but also state and metropolitan area series and contribute to a recurring problem of differing employment trends reported for the national versus the sum-of-states CES estimates.

The existing CES sample is a quota sample whose inception over 50 years ago predated the introduction of probability sampling as the internationally recognized standard for sample surveys. Quota samples are known to be at risk for potentially significant biases; introducing a probability-based sample for CES will more effectively ensure a proper representation of the universe of nonfarm business establishments, through randomized selection techniques and the regular rotation of sample members. It also will allow for the publication of sampling errors and confidence intervals – standard survey accuracy measures not directly applicable to the current non-probability design.

In addition the CES sample redesign addresses a second critical measurement issue, timely sample-based representation of employment from new business births. Procedures have been developed for ongoing quarterly sample updates that will ensure better representation of new units in the CES sample. The new design also provides for the capture of the birth of new worksites within multi-establishment firms on a monthly basis. Time series modeling techniques are being tested to estimate the residual portion of birth employment not accounted for through the improved sampling techniques.

Improved birth/death measurement, coupled with a probability-based sample design, should yield more accurate and consistent employment, hours, and earnings estimates across the national, state, and area levels.

The New CES Sample Design - The new design is a state-based, stratified simple random sample, where the strata, or sub-populations, are specified by industry and employment size. The sampling rates for each stratum are determined through a method known as optimum allocation, which distributes a fixed number of sample units across a set of strata in such a way as to minimize the overall variance, or sampling error, on the primary estimate of interest. For the CES redesign, the number of sample units is fixed to the approximate size of the existing CES survey; this is the sample size supportable by current program resources. The total nonfarm employment level is the primary estimate of interest, and the new design gives top priority to measuring it as precisely as possible, or, in other words, to minimizing the statistical error around the statewide total nonfarm employment estimates. The current sample size can support the publication of considerable industry and geographic detail within a State and provide for highly reliable national CES estimates at the total nonfarm and detailed industry levels.

The sampling frame, and the CES sample itself, will be updated on a quarterly basis, as each new quarter of UI-based universe data becomes available. This quarterly frame maintenance will keep

the sample up-to-date by adding new firm births and deleting business deaths and will provide the basis for a regular program of sample rotation. The basic sampling unit is a UI account number. UI numbers are unique within a state and generally cover all the individual worksites within a firm. Defining the UI account as the basic sampling unit provides for the implicit capture of worksite births and deaths within multi-establishment firms. During monthly data collection, sample respondents can be queried about the opening and closing of worksites and this information incorporated into the estimation process.

In addition to the quarterly updates, which facilitate sampling for new business births, the new design also calls for an annual update process which includes sample frame maintenance and the redrawing of the entire sample for the first quarter of each year. Frame maintenance provides for the updating of industry, size class, and metropolitan area designations and for the merging of the quarterly supplemental birth samples into the overall frame. A high degree of overlap at each annual update is expected because all UI accounts on the sample frame are ordered through a technique known as permanent random numbers (PRN). This technique assigns random numbers to all UI accounts on the universe frame at the time they first appear and then sequentially orders the frame by the PRNs. The allocation for each sampling cell is then fulfilled by working down the ordered PRN list until the full complement of needed units is drawn. Because the random numbers are permanent and thus remain in essentially the same order on the frame, it is expected that between 90 to 95% of UI accounts drawn for the sample for any given year will be drawn again the following year. This then minimizes cancellation of existing sample units and the need to solicit replacement units.

After initial implementation of the full probability sample design, BLS will institute a program of regular sample rotation. This will reduce the respondent burden for individual firms selected for the survey, by limiting the length of time they are asked to participate.

Estimation formulas – As an integral part of the new sample design, improved estimators also have been developed and tested for the CES survey. Estimates will be generated using a stratified expansion estimator that uses weights developed from the population sampling fractions to expand the sample employment to an estimate of universe employment. This basic technique will be augmented by benchmark factors, or post-stratification weights, that take advantage of information available from the most recent UI population count. These benchmark factors rely on a strong correlation between current month and benchmark month employment across business establishments to provide for variance reduction.

Business Birth and Death Estimation – Regular quarterly updating of the CES sample frame, with information from the UI universe files will help keep the CES survey current with respect to employment from business births and deaths as indicated above. The most timely UI universe files available, however, will always be a minimum of 6 to 9 months out of date with respect to the current reference month for estimation. The CES survey thus can not rely on quarterly frame maintenance alone to provide estimates for business birth and death employment contributions. BLS has researched both sample-based and model-based approaches to measuring birth units that have not yet appeared on the UI universe frame.

Over the past year, BLS concluded research on a sample-based approach to measuring employment from new business births, but found it to be untenable in the actual CES production environment. This approach was based on the development of new business birth frames each month. BLS collected files of new UI account registrations from each of its state partners in the State Employment Security Agencies (SESA) to develop the frames, then drew and screened a birth sample, and began immediate monthly collection of data. The major drawback to this method was that the files of new UI accounts available from the SESAs each month were not current enough to form an accurate birth sampling frame. The research revealed that firms first registering for UI had often been in existence for several months prior to their registration; many new businesses do not register until after the end of the quarter in which they first have UI-covered employment. Additionally, it was found to be very costly to create frames and to select and enroll monthly birth samples, and results from birth estimate simulations indicated a high degree of variability associated with the estimates. All of these factors led BLS to abandon the approach of a monthly sample-based estimate for new business births.

BLS now is concentrating on model-based approaches to measuring employment from business births and deaths each month. Early exploratory research indicated that , while both the business birth and business death components of employment change were relatively large, the net contribution of births and deaths was quite small and relatively stable. BLS is testing two model-based approaches to estimating the birth/death component of total employment change each month.

The first modeling approach relies primarily on using death units to impute for the missing birth units. The primary feature of this approach is the imputation of an employment level for all sample units that do not report in a given month, including those found to be out of business. Research to date shows this approach works reasonably well in most industry divisions. In the retail trade and services divisions, however, where birth employment change has been consistently outpacing death employment change, a supplemental net birth/death model is required, in addition to the imputation approach, to properly account for all of the birth employment. An operational advantage of this method is that it does not require distinction between sample non-response for business death versus other reasons; employment for all nonresponding sample members is imputed in the same manner.

The second modeling approach directly estimates a net birth/death employment component from historical observations plus a separate variable for the observed movement in the sampled part of the population. This method assumes CES will capture and use information on business deaths, on a one-month lagged basis, through the data collection process. It thus makes use of information on out-of-business units in monthly estimation.

Both of these techniques have the limitations common to all time series models, the inability to react quickly to sudden changes in trend and to economic turning points. Both rely on historical patterns and relationships and, additionally, incorporate information from the current movements observed in the reported sample to help estimate the birth and death employment contribution to total nonfarm employment.

Much of the research work for the CES sample redesign completed to date by BLS and its expert consultants from Westat Inc., the National Opinion Research Center at the University of Chicago, and the University of Michigan Survey Research Center, is summarized in a set of eight technical papers presented at the 1997 Summer Joint Statistical Meetings sponsored by the American Statistical Association. The papers have been published in the meeting proceedings and also are available upon request from BLS.

Current Status of the Production Test - The CES sample redesign is a comprehensive project that affects all major aspects of the CES program. In order to support the newly developed probability-based design, new methods, computer systems, and operating procedures are required for:

- Sample frame construction and sample selection, including quarterly and annual updating
- Solicitation, enrollment, and ongoing monthly data collection for sample respondents
- Editing and review of respondent microdata and monthly sample-based estimates
- Business births and deaths modeling techniques
- Annual benchmark adjustments
- Seasonal adjustment

Methodological Research - To date, the research work to develop new methodologies for sample design and estimation has been completed, as briefly described above. In addition, substantial research has been completed and further work is in progress in the areas of new respondent enrollment protocols and business birth/death estimation methods.

BLS is in the earlier stages of methods research for benchmarking and seasonal adjustment. The major issue affecting benchmarking is achieving consistency between national and state estimates. Currently, the national and state estimates utilize different methodologies to adjust data for the inter-benchmark periods between the March benchmark reference points and utilize somewhat different procedures for establishing benchmark levels for the small portion of the population not covered by the UI universe-based benchmark. Developing a consistent methodology is critical to achieving the goal of consistent and approximately additive national and state series.

The major issue for seasonal adjustment centers around the potential emergence of new seasonal patterns that differ significantly from those evidenced by the current CES-sample based estimates. As the CES program transitions to a more representative sample of the UI universe, some of the differing seasonal patterns now evident between the sample-based estimates and the universe counts are expected to be reduced or eliminated. Because the seasonal adjustment process requires a consistent historical series to produce accurate seasonal factors, BLS is examining use of universe counts or some hybrid of sample and universe-based series for the seasonal adjustment process.

Computer Systems and Operating Procedures – To date, prototype systems and procedures have been developed for sample frame construction and sample selection, including quarterly and annual updating. For the new design and estimators to work effectively requires a continual, precise accounting of each UI account on the sample frame and each of its associated worksites. This accounting is updated each quarter with UI birth and death information and annually when

the sample is redrawn. This is a complex process because there are large numbers of administrative as well as economic changes that occur in the UI-based sample frames. The new design also requires precise updating of the status of sampled UI accounts each month. Procedures also were developed to track and handle separately overlap UI accounts, i.e., those included in both the existing CES and the new probability design.

Revised systems and operating procedures also have been developed for the solicitation of new sample respondents and their initial enrollment into the sample. The transition from a quota-based to a probability-based sample requires that high response rates be achieved for the exact sample as selected. Under the former quota sampling method, if solicitation response rates were low, solicitation of substitute units continued until the target sample size for a given sampling cell was achieved. Because of the very different nature of probability sampling, significantly improved solicitation protocols and procedures needed to be developed, including refusal conversion efforts targeted to reluctant respondents and personal visit initiation for the largest firms selected for the sample.

Monthly data collection systems and procedures required significant enhancement to provide for the immediate capture of information on the opening and closing of worksites within multi-establishment UI accounts to fulfill the sample design specifications. All of the CES data collection modes -- telephone, electronic filing, and mail -- required reprogramming.

Additionally, an improved set of microdata screening procedures as well as estimate review procedures are in the early test stages. The new procedures will provide for more consistency of approach across national, state, and area estimation and rely less on individual analysts' decision-making processes than current procedures.

Next Stages in the Production Test - Wholesale trade was selected as the first major industry division for probability design phase-in, and the production test thus far has concentrated on collecting data for that industry. The enrollment of the entire wholesale trade sample is expected to be complete by the fall of 1998. The enrollment of the first of two major industry groupings within the division, wholesale nondurables, is nearing completion, and BLS expects to begin making a full set of parallel estimates for this component over the summer. Manufacturing will be the next major industry division targeted for probability design conversion; enrollment for that division is scheduled to begin by the end of this year.

Evaluation of the production test results will continue to focus on operational as well as methodological issues, including:
- response rates achieved using newly enhanced solicitation procedures, and the costs associated with achieving acceptably high ongoing response rates; and
- development of new software systems and processing procedures to accommodate the more complex design and estimators, and the testing of these systems in a monthly production environment.

As parallel estimates generated under the new design become available, BLS and the states will begin evaluating the performance of the new sample and estimator for conformance to design expectations in the areas of:

- measurement of levels and over-the-month changes for employment, hours, and earnings at the national, state, and area levels, with performance evaluated by comparison against the current CES series and in terms of variance measures;
- consistency of overall levels and trends between the national and the sum-of-the-states estimates;
- the magnitude and direction of benchmark revisions required to the sample-based estimates;
- the disaggregation of benchmark error into the amounts stemming from estimation of each of the three major components -- business births, business deaths, and continuing units;
- the accuracy of methods used to impute data for CES survey non-respondents, which can be evaluated by comparing imputed values against data reported for UI purposes for these establishments; and
- the seasonal patterns exhibited by the new sample-based estimates as compared with those from the UI universe data series and the existing CES series.

Sample Redesign Implementation Plans - The Bureau intends to proceed with a phased-in implementation of the new CES sample design beginning in June 2000, coincident with the publication of March 1999 CES national benchmark revisions. The wholesale trade industry series for CES national estimates will be converted to the new probability-based procedures at that time. Probability-based estimates for state and area wholesale trade series are targeted for introduction in March 2001 with the next state benchmark revision.

After the initial conversion of wholesale trade, BLS will continue a phase-in of the new design by major industry division. Implementation of the new sample and estimators for major divisions will be scheduled to coincide with the publication of benchmark revisions, in order not to disrupt published over-the-month changes for current month estimates with a continually changing sample composition. Conversion of all industries is expected to be completed approximately 4 years from the start of implementation.

March 1997 Benchmark Revisions to Payroll Survey Employment Estimates

Bureau of Labor Statistics
June 5, 1998

I. Overview

This package provides background information on benchmark revisions to the establishment payroll survey data released today. Benchmark revisions, published in early June each year, are a standard part of the payroll survey estimation process. The benchmark adjustment represents a once-a-year re-anchoring of sample-based employment estimates to full population counts available through unemployment insurance tax records filed by nearly all employers with State Employment Security agencies.

The incorporation of March 1997 benchmarks has led to revision of all not seasonally adjusted data for the period subsequent to the last benchmark, i.e., April 1996 forward. Seasonally adjusted all employee data has been revised from January 1993 forward. Seasonally adjusted hours and earnings series have been revised from January 1989 forward. Although the usual practice is to revise 5 years of historical seasonally adjusted data with benchmark updates, the hours and earnings series include additional updates to correct for calendar-related fluctuations in the series.

At the total nonfarm level, the March 1997 benchmark revision is an upward adjustment of 431,000 or 0.4 percent, well within the range experienced over the previous decade of zero to 0.7 percent. (See table 1.)

The industry distribution of March 1997 benchmark revisions is shown on Table 2.

II. Background Information

(1) What is the establishment payroll survey?

The establishment payroll survey, also known as the Current Employment Statistics survey, is a monthly sample survey of nearly 400,000 business establishments nationwide. The primary statistics derived from the survey are monthly estimates of employment, hours, and earnings for the nation, states, and major metropolitan areas. Preliminary national estimates for a given reference month typically are published on the first Friday of the following month, in conjunction with data derived from a separate survey of households, the Current Population Survey (CPS). The CPS is the source of statistics on the activities of the labor force, including the nation's unemployment rate.

(2) What is the UI universe count?

The Bureau's UI universe count is a quarterly tabulation, from administrative records, of the number of employees covered by unemployment insurance (UI) laws. UI universe counts, available on a lagged basis, contain individual employer records for over 7 million establishments and cover nearly 98 percent of total nonfarm employment; they thus provide a benchmark for the sample-based estimates. For the small segment of the population not covered by UI, BLS develops employment benchmarks from several alternative sources.

(3) Why are the payroll survey estimates benchmarked to UI universe counts?

The CES survey, like many other surveys, establishes benchmarks on a periodic basis in order to adjust its sample-based estimates to complete population counts available from administrative records.

Because of their much smaller size, sample surveys offer an ability to produce very timely estimates along with a greater ability to control the quality of the data contained in individual reports. There is a need, however, to recalibrate sample estimates periodically against full population counts. The use of a population count, or benchmark, allows the results of the sample survey estimation process to be adjusted for new birth units in the population frame, and for sampling and non-sampling errors.

III. Effects of the 1997 Revisions

(4) How does the benchmark revision affect the employment data for months prior to March 1997?

Following standard BLS methodology, the March 1997 UI-based benchmark employment level has replaced the March 1997 sample-based employment estimate. The difference between the benchmark level and the sample-based estimate (i.e., the 431,000 benchmark revision) has been wedged back to the previous benchmark level; 1/12 of the difference was added to the April 1996 employment level, 2/12 to May 1996 and so forth, through February 1997 which received 11/12 of the difference.

(5) How does the benchmark revision affect the employment data for months subsequent to March 1997?

Estimates for April 1997 forward have been recalculated by applying over-the-month changes from the sample, along with recomputed bias adjustment and seasonal adjustment factors, to the new benchmark level. The average monthly bias adjustment levels for the April 1997 to March 1998 time period were unchanged at 150,000 per month.

By February 1998 the revised total nonfarm employment level is 308,000 above the previously published figure. The net impact of the post-benchmark revisions for all months is shown on Table 3.

(6) What is the revision process for the previously published preliminary estimates for March and April 1998?

Revisions for the most recent two months, March and April 1998 result from both the effects of the benchmark process described above and the routine incorporation of additional sample receipts into the March final estimates and the April second preliminary estimates.

Additionally, the April second preliminary estimates reflect results from the annual sample resizing process. Resizing essentially re-evaluates the size class estimation cell assignments of individual sample members and revises the assignments as appropriate. For example, an establishment that grew substantially over the past year might be reassigned from an estimation cell composed of small firms to a cell composed of large firms, ones more reflective of the establishment's current size. The resizing process thus contributes to revisions between the first and second April preliminary estimates, as the more up-to-date size class estimation cell assignments are introduced with calculation of the second preliminary estimates for April.

(7) What caused the calendar effect in hours and earnings series? How is BLS adjusting for the effect?

The calendar effect results from both response error and processing error associated with the conversion of reported payroll and hours information for semi-monthly and monthly pay periods to a weekly equivalent. All non-weekly payroll data must be converted to a weekly equivalent in order to be used in the CES estimation process. Because there are a variable number of weekdays (or standard workdays) across months the conversion process is not entirely straightforward; it relies on certain standard assumptions that proved inadequate in some circumstances. The conversion process shortcomings led to non-economic fluctuations in hours and earnings series that were highly correlated with the number of weekdays in a given month.

With the publication of the 1997 benchmark revisions BLS has corrected for this effect through the seasonal adjustment process using a REGARIMA modeling technique, for all affected hours and earnings series. This includes the total private Average Hourly Earnings and Average Weekly Hours series as well as the division level Average Weekly Hours series for transportation and public utilities, wholesale trade, retail trade, finance, insurance and real estate, and services, and the division level Average Hourly Earnings series for wholesale trade, finance, insurance and real estate, and services.

IV. Benchmark Revision Sources

(8) What are the causes of benchmark revisions?

In general, differences between sample-based estimates and universe counts result from both sampling and non-sampling error. Although sampling error is present in the payroll survey, as it is in all surveys, the CES sample is so large (almost 400,000 reports covering about one-third of universe employment) that sampling error is not usually an important factor in explaining the differences.

Nonsampling error arises in both the survey estimates and the universe counts and is a more significant cause of benchmark revisions. Sources of nonsampling error include coverage, response, and processing errors in both data series. Additionally, the survey is potentially subject to sample design and estimator biases.

(9) What is the status of the planned sample redesign for the CES survey?

In June of 1995, the Bureau of Labor Statistics announced plans for a comprehensive redesign of the sample of establishments for its monthly payroll survey. The plans called for a 2-year research effort to develop the new sample design, followed by a 2-year production test of survey methods, procedures and systems, with a phased-in implementation of the new design following thereafter. As scheduled, the research phase for the Current Employment Statistics (CES) sample redesign was completed in June 1997 and the Bureau launched a production test of the new sample design at that time. While the production test was previously scheduled to conclude in June 1999, it has been extended for one year. BLS is postponing the initial implementation of the redesign until June 2000, when it expects to introduce the first estimates from the new design, for the wholesale trade industry, with the 1999 benchmark revisions. The remaining industry divisions are scheduled to be phased in with subsequent years' benchmark releases over a 3- to 4- year period.

The one-year postponement of the redesign implementation is a result of difficulties experienced during the first year of the production test as well as issues that arose in the ongoing CES program. The goal of the first year of the production test was to evaluate the feasibility of the CES redesign methods, systems, and procedures in a live production environment. The new probability-based methodology is much more complex than the current methodology and requires more complex operating procedures and computer systems to support it, particularly in the areas of sample updating, new respondent enrollment, and monthly data collection. The live testing during the past year identified a number of areas where the research methodologies needed to be strengthened and the operating procedures and software systems needed to be expanded in their functionality. Initial complications were experienced in establishing the regular quarterly sample updates required by the new design and in achieving high response rates from the respondents targeted as new sample members for the redesign.

Progress on software development for the new computer systems for the redesign was slowed significantly due to a redirection of systems priorities towards ensuring that the existing CES processing system is Year 2000 compliant. In addition, there were some delays in methods and procedures development over this past year, due to the considerable time and effort needed to correct a calendar-related effect that was discovered to be significantly distorting month-to-month movements in current CES hours and earnings series.

Table 1. Percent differences between nonfarm employment benchmarks and estimates by industry division, March 1990-97[1]

Industry	1990	1991	1992	1993	1994	1995	1996	1997
Total	-0.2	-0.6	-0.1	0.2	0.7	0.5	(2)	0.4
Mining	-3.3	-.6	-.8	2.2	-.7	.2	0.5	3.1
Construction	-.8	-.2	-2.6	1.6	1.9	-1.6	.2	1.1
Manufacturing	.3	.1	-.8	1.1	1.3	.3	1.0	.7
Transportation and public utilities	-.3	-1.0	-.6	1.0	2.2	-.7	-1.2	-.3
Wholesale trade	-2.6	-.2	.7	-2.6	1.2	1.2	-1.7	-.1
Retail trade	-.3	-.3	.9	-.2	1.3	1.6	.5	-.1
Finance, insurance, and real estate	-1.4	-.4	-1.5	1.5	2.1	-1.8	-1.1	.5
Services	.3	-1.6	.2	.1	-.8	.9	.1	1.0
Government	.2	-.3	.4	-.1	.4	.2	-.1	-.4

[1] Differences are based on comparisons of final, published March estimates and benchmark levels, as originally published.

[2] Less than 0.05 percent.

Table 2. Differences between nonfarm employment benchmarks and estimates by industry, March 1997
(Numbers in thousands)

Industry	Benchmark	Estimate	Difference	
			Amount	Percent
Total	120,903	120,472	431	0.4
Total private	101,040	100,522	518	.5
Goods-producing	24,359	24,163	196	.8
Mining	580	562	18	3.1
Metal mining	53	54	-1	-1.9
Coal mining	96	92	4	4.2
Oil and gas extraction	327	313	14	4.3
Nonmetallic minerals, except fuels	103	103	0	0
Construction	5,260	5,204	56	1.1
General building contractors	1,237	1,227	10	.8
Heavy construction, except building	709	685	24	3.4
Special trade contractors	3,314	3,292	22	.7
Manufacturing	18,519	18,397	122	.7
Durable goods	10,894	10,821	73	.7
Lumber and wood products	777	781	-4	-.5
Furniture and fixtures	509	507	2	.4
Stone, clay, and glass products	540	530	10	1.9
Primary metal industries	709	709	0	0
Blast furnaces and basic steel products	235	236	-1	-.4
Fabricated metal products	1,464	1,461	3	.2
Industrial machinery and equipment	2,151	2,142	9	.4
Computer and office equipment	368	372	-4	-1.1
Electronic and other electrical equipment	1,672	1,642	30	1.8
Electronic components and accessories	636	614	22	3.5
Transportation equipment	1,826	1,812	14	.8
Motor vehicles and equipment	983	969	14	1.4
Aircraft and parts	485	490	-5	-1.0
Instruments and related products	859	853	6	.7
Miscellaneous manufacturing	388	385	3	.8
Nondurable goods	7,625	7,576	49	.6
Food and kindred products	1,651	1,653	-2	-.1
Tobacco products	41	41	0	0
Textile mill products	619	611	8	1.3
Apparel and other textile products	835	823	12	1.4
Paper and allied products	682	673	9	1.3
Printing and publishing	1,543	1,534	9	.6
Chemicals and allied products	1,032	1,026	6	.6
Petroleum and coal products	137	137	0	0

Table 2. Differences between nonfarm employment benchmarks and estimates by industry, March 1997--Continued
(Numbers in thousands)

Industry	Benchmark	Estimate	Difference	
			Amount	Percent
Rubber and miscellaneous plastics products	992	986	6	.6
Leather and leather products	93	93	0	0
Service-producing	96,544	96,309	235	.2
Transportation and public utilities	6,331	6,353	-22	-.3
Transportation	4,062	4,123	-61	-1.5
Railroad transportation	223	224	-1	-.4
Local and interurban passenger transit	460	467	-7	-1.5
Trucking and warehousing	1,627	1,640	-13	-.8
Water transportation	173	170	3	1.7
Transportation by air	1,130	1,176	-46	-4.1
Pipelines, except natural gas	14	14	0	0
Transportation services	434	432	2	.5
Communications and public utilities	2,269	2,230	39	1.7
Communications	1,401	1,359	42	3.0
Electric, gas, and sanitary services	868	871	-3	-.3
Wholesale trade	6,567	6,571	-4	-.1
Durable goods	3,882	3,877	5	.1
Nondurable goods	2,685	2,694	-9	-.3
Retail trade	21,467	21,494	-27	-.1
Building materials and garden supplies	894	888	6	.7
General merchandise stores	2,598	2,674	-76	-2.9
Department stores	2,287	2,352	-65	-2.8
Food stores	3,432	3,430	2	.1
Automotive dealers and service stations	2,284	2,293	-9	-.4
New and used car dealers	1,046	1,052	-6	-.6
Apparel and accessory stores	1,064	1,071	-7	-.7
Furniture and home furnishings stores	983	1,015	-32	-3.3
Eating and drinking places	7,504	7,386	118	1.6
Miscellaneous retail establishments	2,709	2,736	-27	-1.0
Finance, insurance, and real estate	6,988	6,951	37	.5
Finance	3,368	3,359	9	.3
Depository institutions	2,015	2,030	-15	-.7
Commercial banks	1,452	1,476	-24	-1.7
Savings institutions	262	254	8	3.1
Nondepository institutions	555	535	20	3.6
Mortgage bankers and brokers	247	241	6	2.4
Security and commodity brokers	581	577	4	.7
Holding and other investment offices	217	216	1	.5
Insurance	2,242	2,215	27	1.2
Insurance carriers	1,521	1,498	23	1.5
Insurance agents, brokers, and service	721	717	4	.6
Real estate	1,378	1,377	1	.1

Table 2. Differences between nonfarm employment benchmarks and estimates by industry, March 1997--Continued
(Numbers in thousands)

Industry	Benchmark	Estimate	Difference	
			Amount	Percent
Services [1]	35,328	34,990	338	1.0
Agricultural services	588	580	8	1.4
Hotels and other lodging places	1,673	1,677	-4	-.2
Personal services	1,244	1,257	-13	-1.0
Business services	7,677	7,459	218	2.8
Services to buildings	922	891	31	3.4
Personnel supply services	2,794	2,676	118	4.2
Help supply services	2,480	2,350	130	5.2
Computer and data processing services	1,362	1,298	64	4.7
Auto repair, services, and parking	1,113	1,125	-12	-1.1
Miscellaneous repair services	369	378	-9	-2.4
Motion pictures	540	533	7	1.3
Amusement and recreation services	1,406	1,373	33	2.3
Health services	9,633	9,604	29	.3
Offices and clinics of medical doctors	1,715	1,716	-1	-.1
Nursing and personal care facilities	1,744	1,749	-5	-.3
Hospitals	3,845	3,851	-6	-.2
Home health care services	706	677	29	4.1
Legal services	935	943	-8	-.9
Educational services	2,209	2,178	31	1.4
Social services	2,490	2,459	31	1.2
Child day care services	581	596	-15	-2.6
Residential care	704	688	16	2.3
Museums and botanical and zoological gardens	84	81	3	3.6
Membership organizations	2,231	2,178	53	2.4
Engineering and management services	2,943	2,950	-7	-.2
Engineering and architectural services	849	858	-9	-1.1
Management and public relations	910	922	-12	-1.3
Services, nec	48	48	0	0
Government	19,863	19,950	-87	-.4
Federal	2,700	2,700	0	0
Federal, except Postal Service	1,850	1,850	0	0
State	4,692	4,748	-56	-1.2
Education	2,028	2,069	-41	-2.0
Other State government	2,664	2,679	-15	-.6
Local	12,471	12,502	-31	-.2
Education	7,239	7,238	1	0
Other local government	5,231	5,264	-33	-.6

[1] Includes other industries, not shown separately.

Table 3. Differences in seasonally adjusted levels and over-the-month changes, total nonfarm employment, January 1997-February 1998

(In thousands)

	Levels			Over-the-month changes		
	As previously published	As revised	Difference	As previously published	As revised	Difference
1997:						
January ...	120,909	121,146	237	250	245	-5
February ..	121,162	121,457	295	253	311	58
March	121,344	121,779	435	182	322	140
April	121,671	122,092	421	327	313	-14
May	121,834	122,325	491	163	233	70
June	122,056	122,534	478	222	209	-13
July	122,440	122,811	371	384	277	-107
August	122,492	122,894	402	52	83	31
September .	122,792	123,280	488	300	386	86
October ...	123,083	123,568	485	291	288	-3
November ..	123,512	123,944	432	429	376	-53
December ..	123,866	124,289	423	354	345	-9
1998:						
January ...	124,265	124,640	375	399	351	-48
February ..	124,524	124,832	308	259	192	-67

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