

An Evaluation of Concurrent Seasonal Adjustment
For the Major Labor Force Series

by

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I. Introduction

Seasonal adjustment plays an important role in the procedures used by national statistical agencies to produce estimates of monthly levels and changes for the economic time series which are used in the interpretation and analysis of the performance of our economy and labor markets. Among the most critical and sensitive of these economic time series are the national unemployment rate and the associated major labor force series which are based on the Current Population Survey (CPS) and issued by the Bureau of Labor Statistics (BLS). The purpose of seasonal adjustment is to eliminate from such time series the effects of seasonal events such as weather, holidays, opening and closing of schools, etc., to make it easier to observe and analyze the underlying trend and cyclical movements. Seasonal variation often dominates other sources of change over short-term periods for many of these series and can make interpretation of short-term movements difficult for the average user unless seasonally adjusted versions are available.

The seasonally adjusted estimates which receive the most attention are those associated with the first, most current issuance of data for a particular month. Due, however, to

the inherent nature of moving averages, which are fundamental to the procedures used for most official seasonal adjustment by national statistical agencies, the estimates of seasonality used at first issuance cannot be based on the symmetric moving averages on which those procedures are primarily based. The symmetric moving averages require a substantial number of observations both before and after the observation of interest. The estimates of seasonality in current observations at first issuance must instead be based on asymmetric moving averages applied to the available historical data, with most weight usually given to recent years.

In a concurrent adjustment environment, all available current observations are used in the estimation of current seasonality and the estimation process must, therefore, be run every month. The much more common practice for current observations, however, has been, and, to a great extent, still is, that of projected-factor seasonal adjustment, where the estimation process is run much less frequently, usually annually or semiannually, to produce projected estimates of seasonality (seasonal factors) for the subsequent year or half-year. In projected-factor adjustment, the current observations cannot participate in the estimation of the seasonal factors used at first issuance because those observations aren't yet available when the factors are calculated; the factors that will be used can, however, be published ahead of time. In either

case (concurrent or projected-factor adjustment), the initial seasonally adjusted estimates are subject to a number of revisions, usually annually (although alternative frequencies of revision may merit serious consideration in concurrent adjustment environments), until enough additional observations have accumulated to allow the use of the symmetric moving averages to produce final estimates for a given time point.

Those final estimates are regarded as the best estimates available from these moving-average procedures (which, in turn, have generally been regarded as the best methods available for large-scale seasonal adjustment by national statistical agencies ¹). Since policy decisions must usually be based on current data and can't wait several years for the best and final estimates, it is important that the initial, current estimates be reasonably close to and consistent with the best and final estimates. In other words, the revisions should not be too large. Another implication is that the size of revisions is one way to evaluate alternative procedures for current seasonal adjustment, at least in cases where the final estimates from each of the alternatives will be the same, as with

¹ See Dagum (1979). Bell and Hillmer (1984) provide a different perspective and indicate a preference for alternative methods which may become more common at some point in the future. For now, however, the ratio-to- or difference-from-moving-average procedures such as X-11 are still dominant.

concurrent versus projected-factor adjustment using the same estimation procedure.

Several studies in recent years, both theoretical and empirical (see, for example, Bayer and Wilcox 1981, Dagum 1982, Kenny and Durbin 1982, Wallis 1982, McKenzie 1984, Shimberg 1984, Dagum and Morry 1985, Pierce and McKenzie 1985, Buszuwski 1986), have shown that revisions of seasonally adjusted estimates can generally be reduced, often substantially so, by doing concurrent rather than projected-factor adjustment. Of course, the predominance of projected-factor adjustment has been due to other considerations, primarily operational difficulties in processing the data and, perhaps more importantly in recent years, a perception that the prior publication of seasonal factors was an important way of maintaining the "openness" of the seasonal adjustment process and thus sustaining public confidence and understanding. ²

Initially, the advantages of concurrent adjustment were not judged sufficient to replace the projected-factor adjustment as the standard approach, especially for very sensitive series such as the national unemployment rate. Now that the weight of the evidence in favor of concurrent adjustment has grown substantially, reevaluation is called for, including a thorough evaluation of the empirical impact of concurrent adjustment on the major labor force series. This

² For example, see Shiskin and Plewes (1979).

paper reports on the results of such an evaluation.

The second section of the paper will provide a brief history of concurrent adjustment, including its application at BLS to compute an alternative unemployment rate, and review some of the relevant literature. The third section will describe the labor force data and provide some background on the procedure that BLS currently uses to seasonally adjust those data. Subsequent sections will identify the design of the evaluation study, present and discuss the results, and present conclusions and recommendations.

II. Brief History of Concurrent Adjustment

Concurrent seasonal adjustment was not regarded as a feasible alternative back in the mid-1960's when the refinement and automation of the moving-average techniques resulted in computer programs, such as the X-11 developed at the U.S. Bureau of the Census, that enabled statistical agencies to seasonally adjust large numbers of time series. The idea of running these programs every month would have involved significant time and expense on the computers available at that time, and was out of the question for the high-volume seasonal adjustment being done in statistical agencies, especially in an atmosphere where prior publication of seasonal factors was deemed essential. Although the use of projected factors was probably dictated by the operational limitations, the ability to publish these

factors ahead of time was also perceived as an important way of maintaining public confidence in the seasonal adjustment process because it precluded any release-time manipulation of this process which was less generally accepted and understood than it has since become. This perception of the importance of prior publication of factors has remained a dominant factor in the management of seasonal adjustment of official estimates by U.S. national statistical agencies (Kallek 1978, Shiskin and Plewes 1979, McIntire 1985) and a major deterrent to concurrent adjustment for official estimates, even as the operational environment evolved and made its use more feasible through faster computers and progressively less expensive computer time.

Nevertheless, by the mid- to late 1970's, concurrent adjustment had been adopted for official use with labor force series at Statistics Canada and was being used for the calculation and issuance of an alternative, unofficial unemployment rate by the Bureau of Labor Statistics, the first such use of concurrent adjustment by a U. S. statistical agency. Indeed, the report of the National Commission on Employment and Unemployment Statistics (1979) recommended that important current U.S. labor statistics such as the national unemployment rate be adjusted on a concurrent basis. The Department of Labor response (1981), cited the desirability of prior publication of factors as the reason for not accepting the recommendation at that

time, reflecting a continuing concern for not jeopardizing public confidence in the seasonal adjustment of the very sensitive national unemployment rate.

In spite of, or perhaps partially because of, the concerns about concurrent adjustment in the national statistical agencies, it began to be the subject of a growing body of theoretical and empirical research, almost all of which was favorable. McKenzie (1984) reviewed the history and research of concurrent adjustment prior to 1984 and contributed to the empirical research on the topic. Since then, papers by Shimberg (1984), Dagum and Morry (1985), and Buszuwski (1986) have added further empirical evidence favorable to concurrent adjustment, and the Federal Reserve Board has begun to publish a supplemental, experimental estimate of seasonally adjusted money supply based on concurrent adjustment. In addition, the U.S. Bureau of the Census adopted concurrent adjustment for some of their official construction series in 1985 and have since extended it to almost all of their official seasonal adjustment. Census Bureau officials report that no discernible negative impact on public confidence or understanding has been observed as a result of adopting concurrent adjustment.

The Bureau of Labor Statistics has continued to calculate the concurrently adjusted alternate unemployment rate each month and to release it as part of a table that accompanies

the text of the Commissioner's monthly statement on the employment situation to the Joint Economic Committee. The performance of this concurrent rate has been evaluated in some unpublished in-house research and in some of the annual published articles on revisions to the seasonally adjusted labor force series (for example, McIntire 1985).

Essentially all of that previous evaluation has been focused on the unemployment rate itself and on the effect on first-year revisions rather than the final revisions calculated with the symmetric moving averages after four more years of data have accumulated following the year of interest. This paper evaluates the performance of concurrent adjustment on the labor force series by considering the major components underlying the overall rate in addition to the rate itself and by evaluating performance relative to the final revisions.

III. The Seasonal Adjustment Procedure at BLS.

The official seasonal adjustment procedure for the labor force series at BLS is the X11/ARIMA program developed by Statistics Canada under the direction of Estella B. Dagum. BLS adopted this method in 1980 after tests indicated that yearly revisions were smaller than those obtained by using the X11 program alone. It is the procedure used for all seasonal estimates, both for the current official projected factors and for the concurrent factors used in computing the

alternate unemployment rate mentioned above.

X11/ARIMA is also used for the seasonal adjustment of the payroll employment series, which are based on an establishment survey and are released simultaneously with the labor force series.

The X11/ARIMA procedure is an extension of the widely used Census X-11 program (Shiskin, Young, and Musgrave, 1967). It improves current estimates of most labor force series by allowing recent observations to weigh more heavily in the estimates of current seasonal adjustment factors. This is accomplished by applying Box-Jenkins extrapolation algorithms (ARIMA models) to the original series thereby lengthening the series by 12 observations and thus allowing the generation of seasonal forecasts in the X-11 part of the procedure using filters which are closer to the filters (moving averages) used for the central observations (Dagum, 1978 and Kuiper, 1978). The criteria required for suitable ARIMA models are: 1) a good fit, 2) low forecast errors for the last three years, and 3) residuals which have a random pattern.

The actual process of seasonally adjusting labor force data at BLS is known as a six-month ahead procedure and normally uses ten years of data. The initial run provides projected factors for the months of January through June of the upcoming year. When data through June of the current year

become available, a subsequent run of ten and one half years provides seasonal factors for the months of July through December. As this process continues through time, the data undergo further revisions. However, after the fifth year, no further revisions take place. At this point, the seasonal adjustment of a given series is considered final.

BLS has successfully used this procedure since 1980. ARIMA models have been identified and are currently used for 174 of the 209 independently adjusted labor force series. The remaining 35 series, for which no suitable ARIMA model have been found, are adjusted with the X-11 portion of the program.

IV. Description of the Data.

The data used for this study are the 12 series which form the basis for the computation of the national unemployment rate. This choice is somewhat obvious given the importance and sensitivity of this key economic indicator, as mentioned above. Any possible change in seasonal adjustment methodology must be evaluated in terms of its impact on the reliability of this indicator.

The basic series show a considerable amount of seasonality. Previous adjustments indicate that these groups have strong

F-test values for this particular phenomenon and have seasonality that is high relative to the irregular component. Both of these traits are desirable in evaluating alternative modes of adjustments.

Also included in this study are aggregate series directly derived from the original 12 basic series. Such major groups as adult and teenage labor force, employment and unemployment levels are examined as well as agricultural and nonagricultural employment sub-groups. Of course, the unemployment rate is a major focus of our inquiry, but the rates for both adult and teenage workers are examined as well. The rates which we examined were treated in two ways. First, the rates were computed internally within the program by dividing the appropriate unemployment level by the corresponding civilian labor force, for a given group. The resulting computation was carried out several decimal places. Secondly, these same rates were rounded to one decimal place to determine whether any differences would occur due to rounding since unemployment rates are traditionally published to one decimal place only. The rounding to one decimal place sometimes masks the size of the underlying revisions, but it is important to include an evaluation on the unemployment rate as it is published.

The treatment of unemployed men 20 years of age and over is somewhat different from that of the 11 other series. Because

of the dramatic upward shift that occurred in this series after October, 1974, BLS introduced a prior adjustment of the original data by shifting all the observations up through this time point to a level more in line with subsequent trends. After seasonal adjustment, the adjusted estimates were deflated by the same factor applied before adjustment. This process was continued until 1982 after which time the effect of the shift was no longer a significant factor. This prior adjustment was incorporated in the calculations of this study to provide as much consistency as possible with what was done officially during those years.

The series that we examined are as follows:

Directly adjusted basic series:

- Unemployment, men 16 to 19
- Unemployment, women 16 to 19
- Unemployment, men 20 and over
- Unemployment, women 20 and over
- Agricultural employment, men 16 to 19
- Agricultural employment, women 16 to 19
- Agricultural employment, men 20 and over
- Agricultural employment, women 20 and over
- Nonagricultural employment, men 16 to 19
- Nonagricultural employment, women 16 to 19
- Nonagricultural employment, men 20 and over
- Nonagricultural employment, women 20 and over

Aggregated series and rates:

Unemployment, both sexes 16 to 19
Unemployment, both sexes 20 and over
Agricultural employment, both sexes 16 to 19
Agricultural employment, both sexes 20 and over
Nonagricultural employment, both sexes 16 to 19
Nonagricultural employment, both sexes 20 and over
Civilian labor force, both sexes 16 to 19
Civilian labor force, both sexes 20 and over
Unemployment, total
Agricultural employment, total civilian
Nonagricultural employment, total civilian
Employment, total civilian
Civilian labor force, total
Unemployment rate, total civilian
Unemployment rate, both sexes 16 to 19
Unemployment rate, men 20 years and over
Unemployment rate, women 20 years and over

V. Design of the Study.

The test period for this study is the six year span 1977-82. There were discontinuities in the labor force series between 1966 and 1967, and so 1977 is the first year for which projected factors can be calculated from a continuous 10-year historical time span. 1982 is the last year for which the fifth-year revisions could be calculated at the time of this study. The test period can be broken down as follows:

| Period used for Jan-June projected factors | Projected (current) | Final revision |
|---|---------------------|----------------|
| 1967-1976 | 1977 | 1981 |
| 1968-1977 | 1978 | 1983 |
| 1970-1979 | 1980 | 1984 |
| 1971-1980 | 1981 | 1985 |
| 1972-1981 | 1982 | 1986 |

As an example, using data for the period 1967 to 1976, the

projected seasonal factors were obtained for the months of January through June 1977. Since BLS uses a six month ahead procedure, a subsequent run through the month of June of 1977 provided factors for the latter half of the year for the months of July to December. These factors were then applied to the original 1977 data thus producing seasonal estimates of the labor force comparable to those that were first published. Similarly, the same period was adjusted concurrently by adding one observation after each run for a total of 12 adjustments. This entire procedure was repeated for all the periods through 1982. Comparisons were then made with a final revision which we will explain in more detail in the following section.

The ARIMA models used in this study for the 12 basic series were the ones in official use during 1987 and were kept the same for all runs. The forecast errors and Chi-square values were judged to be adequate though it should be noted that these models were not necessarily the ones used originally. The ARIMA models, transformations and types of adjustments (additive or multiplicative) are:

| Series Title | ARIMA Model | Type of Adjustment |
|-----------------------------|-------------------|--------------------|
| Unemployment: | | |
| Men 16-19 | (0,1,1)(0,1,1) | A |
| Women 16-19 | (0,1,2)(0,1,1) | A |
| Men 20+ | (2,1,2)(0,1,1) | M |
| Women 20+ | (0,1,1)(0,1,1)log | M |
| Agricultural Employment: | | |
| Men 16-19 | (0,1,2)(0,1,1) | M |
| Women 16-19 | (2,1,2)(0,1,1) | M |
| Men 20+ | (1,0,0)(0,1,1)log | M |
| Women 20+ | (0,1,2)(0,1,1)log | M |
| Nonagricultural Employment: | | |
| Men 16-19 | (2,1,0)(0,1,1) | A |
| Women 16-19 | (0,1,1)(0,1,1) | A |
| Men 20+ | (0,1,1)(0,1,1)log | M |
| Women 20+ | (0,1,1)(0,1,1)log | M |

VI. Statistics for Evaluating the Different Methods.

The evaluation of any seasonal adjustment procedure depends upon its performance in regards to some "final" adjusted version. This is usually a period when a sufficient amount of time has elapsed to allow the full benefit of the seasonal moving average filters to take effect. As suggested above in the introduction and by Kenny and Durbin (1982) and again by McKenzie (1984), it is the point when there is sufficient data for the adjustment of the central term. Since 3 x 5 seasonal moving average filters are used for all adjustment of the labor force series, a five year revision period is appropriate and, as a matter of policy, is used by BLS for final revision of its seasonally adjusted labor force data. Only the most recent five year

period is subject to change when seasonal adjustment revisions take place at the end of each calendar year. Any data prior to that time are "frozen" and not subject to any further revision. For example, seasonal factors for 1977 become "finalized" at the end of 1981.

The statistics chosen to evaluate the effectiveness of either the projected estimates or the concurrent estimates can be described as follows: letting T denote the length of the period, $X'(t)$ the original estimate (either the projected estimate or the concurrent estimate), and finally $X(t)$ the revised value. The 6 statistics include:

1. Average (absolute) revision of levels (ARL)

$$ARL = (1/T) \sum_{t=1}^T |X(t) - X'(t)|$$

2. Average (absolute) revision of changes (ARC)

$$ARC = (1/(T-1)) \sum_{t=1}^{T-1} |[X(t+1) - X(t)] - [X'(t+1) - X'(t)]|$$

3. Root mean square revision of levels (RMSL)

$$RMSL = [(1/T) \sum_{t=1}^T ([X(t) - X'(t)])^2]^{1/2}$$

4. Root mean square revision of changes (RMSEC)

$$RMSEC = [(1/(T-1)) \sum_{t=1}^{T-1} ([X(t+1) - X(t)] - [X'(t+1) - X'(t)])^2]^{1/2}$$

5. Root mean square proportional revision of levels(RMSPRL)

$$\text{RMSPRL} = \left[\frac{1}{T} \sum_{t=1}^T \left(\frac{X(t) - X'(t)}{X(t)} \right)^2 \right]^{1/2}$$

6. Root mean square proportional revision of relative changes (RMSPPRC)

$$\text{RMSPPRC} = \left[\frac{1}{T-1} \sum_{t=1}^{T-1} \left(\frac{X(t+1)}{X(t)} - \frac{X'(t+1)}{X'(t)} \right)^2 \right]^{1/2}$$

For the statistics that relate to month-to-month changes (ARC, RMSEC, and RMSPPRC), it should be noted that the concurrent month-ago values used in the calculations for this study were as first computed and not revised as they could be based on data through the following month. This approach is consistent with the current BLS policy of revising seasonally adjusted labor force data only at the end of each year.

VII. Results.

The six statistics were computed for all the 12 basic series and their aggregates for both the projected and the concurrent methods for each individual year. As a means of comparing these measures, ratios were calculated by dividing the concurrent value of the statistic by the corresponding projected value. Thus a ratio of less than 1 will indicate that the concurrent method is to be preferred while a ratio of 1 or greater will indicate that the presently official

projected method performs as well as or better than concurrent.

The average absolute revision of monthly levels, (ARL) and the average revision of month-to-month changes, (ARC) are shown in table 1 for the individual years of 1977 to 1982. For the 12 basic series, the ARL ratios indicate that the concurrent method provides better estimates in 9 out of 12 series for 1978 to 1982 and for 8 out of 12 series for 1977. The results for the aggregate series tended to be similar although the year to year variation was greater with 19 out of 21 series favoring concurrent adjustment in 1979 to only 12 out of 21 series for 1978.

The ARC ratios for the same period are somewhat more significant. Of the 12 basic series, 10 had ratios of less than 1 in all the years except for 1980 where 11 of the series indicated that concurrent estimates were better.

The results for the aggregate series for the ARC were even more impressive. Almost all the years had 19 or more of the ratios with values less than 1 except for 1978 where there were only 12 such series.

These are particularly important results for the ARC since our month-to-month calculations include the December-to-January changes. In the past, these changes

have been very troublesome because of the end of year revisions. Abrupt changes in many of these series have occurred when January statistics were first published. These results are encouraging because concurrent adjustment might well alleviate this problem.

The ARL and ARC statistics were also computed for the average of the six year period for each of the series with some reductions as high as 23 percent. All but two of the aggregate series for the ARL show reductions for both measures. This indicates that in the long run, concurrent adjustment would provide current estimates closer to the final revisions than does our present projected factor method.

The RMSL, the root mean square revision of levels, and the RMSEC, the root mean square revision of month-to-month changes shown in table 2, indicate once more a definite preference for concurrent adjustment. The RMSL ratios for the basic series show a similar pattern to that of the ARL statistics. An average of nine of these series for all years have ratios that indicate reductions for this measure. For the aggregate series, about 15 of 21 show values of less than 1.

The root mean square revision of levels and the root mean square revision of month-to-month changes are shown in table

2. Most of the basic series show a pattern quite similar to the previous statistics. For the RMSL ratios, 8 out of 12 had ratios of less than 1. For the aggregate series, 15 of 21 had RMSL ratios of less than 1.

For the RMSEC, the results are again more impressive with most of the basic series favoring concurrent adjustment. Only 1977 and 1978 have relatively fewer ratios of less than 1. All other years had 19 or more ratios showing a preference for the concurrent method.

The six-year-average statistics for RMSL and RMSEC all show positive results with the exception of 3 of the aggregate series, with some reductions close to 30 percent. As with the ARL and ARC measures, the agricultural and nonagricultural employment totals had ratios greater than 1. In addition, one other series, total employment showed a preference for the present method. Otherwise, we have further evidence that the official seasonal adjustment could be improved with the use of concurrent adjustment.

One more important group of statistics is shown on table 4. These are the major aggregate series. First, there is the unemployment rate. Because our computer program calculated this and other rates from the original levels, the number of decimals carried almost always exceeded 1. This might have some effect on the computation of the measures and

the resulting ratios. Consequently, as mentioned earlier, these rates were rounded to one decimal place (their published form) as well. As we can observe, the unrounded rates show somewhat more improvement using the concurrent method than do the rounded rates, suggesting that the rounded rates tend to mask some of the improvement in the underlying components. This can be shown from the six-year averages as well as the individual years. Nevertheless, the evidence does point to concurrent adjustment in most cases. The exceptions seem to occur most frequently in 1977 and 1978. But the month-to-month changes, as previously noted in earlier results, tend to be more favorable relative to revision of level statistics.

The other major groups also show substantial reductions in all the measures. Ratios for the civilian labor force and unemployment levels for the six-year average are below one. The only individual year which did not show any reduction is 1978. Total civilian employment and nonagricultural employment did not show much reduction in the measures for the levels (for 1978, 1980, and 1981) but did so for the month-to-month changes - hovering around 20 percent for the six-year averages.

The measures of month-to-month changes by individual month for the period 1977 to 1982 for the major series, labor force, employment and unemployment levels, also favor the

concurrent method (Table 4). At least nine of the twelve months have ratios less than one. Only the civilian unemployment rate (to one decimal place) has ratios equally divided between the projected factor method and the concurrent method. This result is not surprising given the previously noted impact of rounding, and it is consistent with BLS' experience in computing the unofficial concurrent monthly unemployment rate, which has not shown many significant differences from the official rate.

Table 4 thus shows that the comparison of concurrent versus projected-factor adjustment can vary rather substantially across years and particularly across months, but it also reinforces the overall advantage of concurrent, especially for month-to-month change and for the major labor force components underlying the unemployment rate as published.

VIII. Conclusions and Recommendations.

The findings of this study have shown that concurrent seasonal adjustment of the labor force series offers improvements over the present BLS six month projected factor method. The six measures used to evaluate the results indicate significant reductions in revisions for almost all of the basic series and a majority of the aggregated series for the individual years. Results for the six-year averages are even more favorable, showing improvements that are

comparable to those found by McKenzie (1984). By adjusting McKenzie's ratios to conform to our comparisons of a six-month ahead procedure to a concurrent adjustment, her findings indicated an average improvement from concurrent adjustment of a number of Census Bureau time series of 13 percent for revisions of levels and 20 percent for revisions of month-to-month percentage change. The results of this study indicate average improvements to revisions of level and month-to-month change of: 6 and 27 percent, respectively, for the civilian labor force; 20 and 23 percent, respectively, for unemployment levels; 5 and 23 percent, respectively, for total civilian employment; 17 and 22 percent, respectively, for the unrounded unemployment rate; and 12 and 13 percent, respectively, for the rounded unemployment rate (to one decimal place, as published).

These results are very encouraging, and we hope that they will cause BLS to reopen the decision process on concurrent adjustment for the labor force data. We believe that seasonal adjustment has evolved to the point where prior publication of factors is no longer essential for maintenance of public confidence. It is certainly essential, and a major responsibility of statistical agencies such as BLS, that public confidence in economic time series be maintained, especially for one as sensitive and critical as the national unemployment rate. We believe that this can now be accomplished for the seasonal adjustment of the labor

force series by documenting procedures in advance and by making all computer programs and data (after release) available to anyone who wishes to replicate the official results. We therefore further hope that our results will motivate BLS to pursue further research on the possible use of concurrent adjustment for the official seasonal adjustment of the labor force series. At least two other key issues need to be addressed before a final decision could be made. The first such issue relates to the question of the proper revision policy for the labor force series under a concurrent adjustment environment--would the traditional policy of annual revision be sound and appropriate, or should more frequent revision be considered? The second issue involves the relationship of the labor force series with other BLS time series, especially with the establishment-based estimates of payroll employment that are released simultaneously with the labor force series--would it be appropriate to consider a change to concurrent adjustment for the labor force series even if such a change were not yet possible or could not yet be justified for the payroll employment series?

The authors recommend that resolution of remaining important issues such as those mentioned in the preceding paragraph be pursued as soon as possible. In the meantime, of course, the BLS will continue to make the concurrently adjusted alternate unemployment rate available. Our results suggest

that the benefits of concurrent adjustment are generally more significant for many of the underlying components, and for month-to-month change, than for the monthly level of the unemployment rate as published. This finding has already led to a decision by BLS to provide, for information, more of the concurrently adjusted series (especially the levels of total civilian labor force, employment, and unemployment) on an alternate basis while the research on concurrent adjustment for BLS series continues.

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Table 1.
Comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series,
1977-1982

1977

| | Average absolute revision of monthly levels | | | Average absolute revision of month-to-month changes | | |
|--|---|-------------------|----------------------------------|---|-------------------|----------------------------------|
| | Concurrent | Projected factors | Ratio of concurrent to projected | Concurrent | Projected factors | Ratio of concurrent to projected |
| Aggregated, indirectly adjusted series | | | | | | |
| Unemployment, both sexes 16 to 19..... | 16.41667 | 14.50000 | 1.13218 | 19.75000 | 19.16667 | 1.03043 |
| Unemployment, both sexes 20 and over..... | 34.08333 | 35.06868 | .97190 | 46.08333 | 51.09570 | .90190 |
| Agricultural employment, both sexes 16 to 19..... | 7.25000 | 9.63745 | .75227 | 11.16667 | 14.56295 | .76679 |
| Agricultural employment, both sexes 20 and over..... | 19.33333 | 24.26862 | .79664 | 29.50000 | 30.63949 | .96281 |
| Nonagricultural employment, both sexes 16 to 19..... | 30.00000 | 32.75000 | .91603 | 27.91667 | 42.33333 | .65945 |
| Nonagricultural employment, both sexes 20 and over..... | 57.83333 | 65.55208 | .88225 | 40.08333 | 72.32813 | .55419 |
| Civilian labor force, both sexes 16 to 19..... | 21.50000 | 27.14193 | .79213 | 21.33333 | 38.14909 | .55921 |
| Civilian labor force, both sexes 20 and over..... | 36.41667 | 55.41667 | .65714 | 41.00000 | 75.51042 | .54297 |
| Unemployment, total..... | 48.83333 | 39.79655 | 1.22707 | 59.00000 | 60.92904 | .96834 |
| Agricultural employment, total civilian..... | 20.41667 | 31.14732 | .65549 | 31.33333 | 32.65662 | .95948 |
| Nonagricultural employment, total civilian..... | 72.66667 | 78.94792 | .92044 | 61.16667 | 84.75521 | .72169 |
| Employment, total civilian..... | 83.25000 | 90.84375 | .91641 | 75.16667 | 106.36979 | .70665 |
| Civilian labor force, total..... | 45.41667 | 78.13021 | .58129 | 49.83333 | 89.00000 | .55993 |
| Unemployment rate(unrounded), total civilian..... | .05036 | .04174 | 1.20660 | .05886 | .06340 | .92837 |
| Unemployment rate(unrounded), both sexes 16 to 19..... | .19006 | .19004 | 1.00009 | .21830 | .24565 | .88868 |
| Unemployment rate(unrounded), men 20 years and over..... | .06969 | .07241 | .96249 | .06312 | .07874 | .80154 |
| Unemployment rate(unrounded), women 20 years and over..... | .10067 | .10183 | .98862 | .11797 | .09993 | 1.18047 |
| Unemployment rate(one decimal), total civilian..... | .03333 | .03333 | 1.00000 | .06667 | .05833 | 1.14285 |
| Unemployment rate(one decimal), both sexes 16 to 19..... | .19167 | .19166 | 1.00001 | .20000 | .24166 | .82761 |
| Unemployment rate(one decimal), men 20 years and over..... | .07500 | .08333 | .90000 | .06667 | .08333 | .80000 |
| Unemployment rate(one decimal), women 20 years and over..... | .09167 | .10000 | .91667 | .11667 | .12500 | .93333 |
| Directly adjusted component series | | | | | | |
| Unemployment, men 16 to 19..... | 13.33333 | 12.00000 | 1.11111 | 14.00000 | 15.75000 | .88889 |
| Unemployment, women 16 to 19..... | 9.58333 | 9.50000 | 1.00877 | 11.08333 | 14.08333 | .78698 |
| Unemployment, men 20 and over..... | 32.91667 | 34.83708 | .94487 | 30.08333 | 38.35767 | .78428 |
| Unemployment, women 20 and over..... | 32.83333 | 33.26385 | .98706 | 37.66667 | 30.78105 | 1.22370 |
| Agricultural employment, men 16 to 19..... | 7.25000 | 6.77612 | 1.06993 | 10.00000 | 11.33816 | .88198 |
| Agricultural employment, women 16 to 19..... | 2.00000 | 4.28569 | .46667 | 2.00000 | 5.22713 | .38262 |
| Agricultural employment, men 20 and over..... | 15.66667 | 20.23010 | .77442 | 15.83333 | 20.32570 | .77898 |
| Agricultural employment, women 20 and over..... | 12.50000 | 10.36936 | 1.20547 | 17.66667 | 16.62636 | 1.06257 |
| Nonagricultural employment, men 16 to 19..... | 15.16667 | 17.00000 | .89216 | 15.08333 | 19.33333 | .78017 |
| Nonagricultural employment, women 16 to 19..... | 17.83333 | 22.58333 | .78967 | 22.00000 | 31.50000 | .69841 |
| Nonagricultural employment, men 20 and over..... | 45.66667 | 65.87793 | .69320 | 38.25000 | 58.90723 | .64933 |
| Nonagricultural employment, women 20 and over..... | 25.83333 | 26.45410 | .97653 | 26.50000 | 45.57422 | .58147 |

Table 1.
Comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series,
1977-1982-Continued

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| | Average absolute revision of monthly levels | | | Average absolute revision of month-to-month changes | | |
|--|---|-------------------|----------------------------------|---|-------------------|----------------------------------|
| | Concurrent | Projected factors | Ratio of concurrent to projected | Concurrent | Projected factors | Ratio of concurrent to projected |
| Aggregated, indirectly adjusted series | | | | | | |
| Unemployment, both sexes 16 to 19..... | 16.91667 | 21.91667 | 0.77186 | 28.16667 | 38.58333 | 0.73002 |
| Unemployment, both sexes 20 and over..... | 36.08333 | 40.37630 | .89368 | 52.25000 | 52.22038 | 1.00057 |
| Agricultural employment, both sexes 16 to 19..... | 6.75000 | 11.24642 | .60019 | 11.08333 | 16.84538 | .65795 |
| Agricultural employment, both sexes 20 and over..... | 27.33333 | 23.58744 | 1.15881 | 28.00000 | 34.63487 | .80843 |
| Nonagricultural employment, both sexes 16 to 19..... | 33.16667 | 34.25000 | .96837 | 45.83333 | 36.83333 | 1.24434 |
| Nonagricultural employment, both sexes 20 and over..... | 56.58333 | 30.16146 | 1.87601 | 57.25000 | 40.76563 | 1.40437 |
| Civilian labor force, both sexes 16 to 19..... | 32.50000 | 29.02572 | 1.11970 | 44.91667 | 36.63770 | 1.22597 |
| Civilian labor force, both sexes 20 and over..... | 55.66667 | 36.17188 | 1.53895 | 59.83333 | 45.81771 | 1.30590 |
| Unemployment, total..... | 47.33333 | 54.20378 | .87325 | 75.41667 | 82.63704 | .91263 |
| Agricultural employment, total civilian..... | 30.58333 | 29.63399 | 1.03204 | 29.41667 | 41.67275 | .70590 |
| Nonagricultural employment, total civilian..... | 55.41667 | 37.90104 | 1.46214 | 54.75000 | 46.98438 | 1.16528 |
| Unemployment, total civilian..... | 60.00000 | 57.40104 | 1.04528 | 59.66667 | 76.76563 | .77726 |
| Civilian labor force, total..... | 56.00000 | 43.27604 | 1.29402 | 75.08333 | 65.65625 | 1.14358 |
| Unemployment rate(unrounded), total civilian..... | .04447 | .05198 | .85547 | .07090 | .07868 | .90113 |
| Unemployment rate(unrounded), both sexes 16 to 19..... | .20248 | .23391 | .86561 | .32249 | .39633 | .81369 |
| Unemployment rate(unrounded), men 20 years and over..... | .05375 | .04946 | 1.08680 | .05451 | .05655 | .96390 |
| Unemployment rate(unrounded), women 20 years and over..... | .07900 | .10595 | .74558 | .12974 | .13052 | .99405 |
| Unemployment rate(one decimal), total civilian..... | .04167 | .05000 | .83333 | .09167 | .09167 | 1.00000 |
| Unemployment rate(one decimal), both sexes 16 to 19..... | .20000 | .23333 | .85714 | .32500 | .40833 | .79591 |
| Unemployment rate(one decimal), men 20 years and over..... | .03333 | .04167 | .80000 | .05833 | .09167 | .63636 |
| Unemployment rate(one decimal), women 20 years and over..... | .07500 | .10000 | .75000 | .13333 | .11667 | 1.14286 |
| Directly adjusted component series | | | | | | |
| Unemployment, men 16 to 19..... | 13.66667 | 18.16667 | .75229 | 10.16667 | 19.66667 | .51695 |
| Unemployment, women 16 to 19..... | 12.58333 | 15.08333 | .83425 | 19.66667 | 24.25000 | .81100 |
| Unemployment, men 20 and over..... | 27.58333 | 24.52148 | 1.12486 | 27.83333 | 28.87309 | .96399 |
| Unemployment, women 20 and over..... | 26.00000 | 35.34377 | .73563 | 45.08333 | 43.30534 | 1.04106 |
| Agricultural employment, men 16 to 19..... | 6.33333 | 10.03221 | .63130 | 9.16667 | 14.63619 | .62630 |
| Agricultural employment, women 16 to 19..... | 1.91667 | 3.90945 | .49027 | 2.75000 | 4.31104 | .63790 |
| Agricultural employment, men 20 and over..... | 20.16667 | 18.65735 | 1.08090 | 17.25000 | 18.04447 | .95597 |
| Agricultural employment, women 20 and over..... | 9.33333 | 14.86617 | .62782 | 13.58333 | 22.22532 | .61116 |
| Nonagricultural employment, men 16 to 19..... | 21.25000 | 18.58333 | 1.14350 | 34.16667 | 28.83333 | 1.18497 |
| Nonagricultural employment, women 16 to 19..... | 17.75000 | 22.16667 | .80075 | 17.33333 | 28.00000 | .61905 |
| Nonagricultural employment, men 20 and over..... | 29.41667 | 44.08659 | .66725 | 20.50000 | 38.59049 | .53122 |
| Nonagricultural employment, women 20 and over..... | 48.16667 | 52.46810 | .91802 | 50.08333 | 51.98893 | .96335 |

Table 1.
Comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series, 1977-1982-Continued

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| | Average absolute revision of monthly levels | | | Average absolute revision of month-to-month changes | | |
|--|---|-------------------|----------------------------------|---|-------------------|----------------------------------|
| | Concurrent | Projected factors | Ratio of concurrent to projected | Concurrent | Projected factors | Ratio of concurrent to projected |
| Aggregated, indirectly adjusted series | | | | | | |
| Unemployment, both sexes 16 to 19..... | 15.00000 | 20.33333 | 0.73770 | 23.25000 | 34.91667 | 0.66587 |
| Unemployment, both sexes 20 and over..... | 50.25000 | 57.11491 | .87981 | 63.16667 | 73.01888 | .86507 |
| Agricultural employment, both sexes 16 to 19..... | 7.91667 | 9.18803 | .86163 | 11.83333 | 13.58738 | .87091 |
| Agricultural employment, both sexes 20 and over..... | 19.33333 | 30.20062 | .64016 | 26.16667 | 37.28400 | .70182 |
| Nonagricultural employment, both sexes 16 to 19..... | 37.50000 | 43.91667 | .85389 | 38.00000 | 58.58333 | .64865 |
| Nonagricultural employment, both sexes 20 and over..... | 76.08333 | 103.53125 | .73488 | 74.91667 | 99.61458 | .75207 |
| Civilian labor force, both sexes 16 to 19..... | 39.58333 | 33.57389 | 1.17899 | 47.41667 | 46.66569 | 1.01609 |
| Civilian labor force, both sexes 20 and over..... | 98.16667 | 111.00521 | .88434 | 100.41667 | 114.92708 | .87374 |
| Unemployment, total..... | 62.25000 | 70.38379 | .88444 | 78.91667 | 97.87044 | .80634 |
| Agricultural employment, total civilian..... | 19.41667 | 30.24042 | .64208 | 31.00000 | 38.64201 | .80224 |
| Nonagricultural employment, total civilian..... | 71.91667 | 111.28125 | .64626 | 65.91667 | 115.91667 | .56866 |
| Unemployment, total civilian..... | 75.16667 | 117.67188 | .63878 | 86.25000 | 121.48438 | .70997 |
| Civilian labor force, total..... | 91.58333 | 99.22396 | .92300 | 117.50000 | 141.58854 | .82987 |
| Unemployment rate(unrounded), total civilian..... | .05836 | .06584 | .88638 | .07310 | .09024 | .81008 |
| Unemployment rate(unrounded), both sexes 16 to 19..... | .15998 | .23232 | .68863 | .25476 | .40565 | .62804 |
| Unemployment rate(unrounded), men 20 years and over..... | .06460 | .07966 | .81087 | .07216 | .08183 | .88192 |
| Unemployment rate(unrounded), women 20 years and over..... | .07519 | .10475 | .71780 | .10919 | .14301 | .76356 |
| Unemployment rate(one decimal), total civilian..... | .05833 | .05833 | 1.00000 | .07500 | .08333 | .90000 |
| Unemployment rate(one decimal), both sexes 16 to 19..... | .14167 | .24167 | .58620 | .24167 | .42500 | .56863 |
| Unemployment rate(one decimal), men 20 years and over..... | .06667 | .09167 | .72727 | .07500 | .09167 | .81818 |
| Unemployment rate(one decimal), women 20 years and over..... | .09167 | .11667 | .78571 | .12500 | .15833 | .78947 |
| Directly adjusted component series | | | | | | |
| Unemployment, men 16 to 19..... | 9.25000 | 8.25000 | 1.12121 | 12.91667 | 12.41667 | 1.04027 |
| Unemployment, women 16 to 19..... | 10.75000 | 15.75000 | .68254 | 17.83333 | 25.66667 | .69481 |
| Unemployment, men 20 and over..... | 34.16667 | 41.95081 | .81445 | 38.33333 | 43.19222 | .88751 |
| Unemployment, women 20 and over..... | 25.58333 | 34.81816 | .73477 | 37.16667 | 50.38145 | .73771 |
| Agricultural employment, men 16 to 19..... | 8.00000 | 9.04887 | .88409 | 10.00000 | 10.82151 | .92409 |
| Agricultural employment, women 16 to 19..... | 2.91667 | 2.80809 | 1.03866 | 3.50000 | 3.67348 | .95278 |
| Agricultural employment, men 20 and over..... | 13.83333 | 20.39256 | .67835 | 21.41667 | 27.41506 | .78120 |
| Agricultural employment, women 20 and over..... | 11.33333 | 13.91886 | .81424 | 13.25000 | 15.69470 | .84423 |
| Nonagricultural employment, men 16 to 19..... | 29.25000 | 28.66667 | 1.02035 | 30.00000 | 37.91667 | .79121 |
| Nonagricultural employment, women 16 to 19..... | 11.75000 | 19.75000 | .59494 | 12.00000 | 25.83333 | .46452 |
| Nonagricultural employment, men 20 and over..... | 37.33333 | 41.93880 | .89019 | 49.41667 | 69.18815 | .71424 |
| Nonagricultural employment, women 20 and over..... | 69.08333 | 83.50098 | .82734 | 69.83333 | 69.82259 | 1.00015 |

Table 1.
Comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series, 1977-1982-Continued

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| | Average absolute revision of monthly levels | | | Average absolute revision of month-to-month changes | | |
|--|---|-------------------|----------------------------------|---|-------------------|----------------------------------|
| | Concurrent | Projected factors | Ratio of concurrent to projected | Concurrent | Projected factors | Ratio of concurrent to projected |
| Aggregated, indirectly adjusted series | | | | | | |
| employment, both sexes 16 to 19..... | 26.00000 | 25.00000 | 1.04000 | 25.08333 | 38.16667 | 0.65721 |
| employment, both sexes 20 and over..... | 92.58333 | 106.60352 | .86848 | 80.00000 | 106.48177 | .75130 |
| agricultural employment, both sexes 16 to 19..... | 7.50000 | 8.76921 | .85527 | 10.41667 | 12.26593 | .84924 |
| agricultural employment, both sexes 20 and over..... | 12.00000 | 17.55009 | .68376 | 15.83333 | 26.80064 | .59078 |
| nonagricultural employment, both sexes 16 to 19..... | 40.58333 | 39.41667 | 1.02960 | 29.00000 | 45.33333 | .63971 |
| nonagricultural employment, both sexes 20 and over..... | 146.83333 | 123.42188 | 1.18969 | 96.41667 | 112.29167 | .85863 |
| civilian labor force, both sexes 16 to 19..... | 45.08333 | 50.25944 | .89701 | 44.00000 | 73.60938 | .59775 |
| civilian labor force, both sexes 20 and over..... | 154.08333 | 174.55729 | .88271 | 113.08333 | 151.62500 | .74581 |
| employment, total..... | 113.58333 | 121.10352 | .93790 | 95.08333 | 119.98177 | .79248 |
| agricultural employment, total civilian..... | 15.00000 | 21.19120 | .70784 | 20.91667 | 36.49792 | .57309 |
| nonagricultural employment, total civilian..... | 162.58333 | 119.48438 | 1.36071 | 94.58333 | 103.37500 | .91495 |
| employment, total civilian..... | 166.25000 | 133.33854 | 1.24683 | 108.33333 | 115.94792 | .93433 |
| civilian labor force, total..... | 163.83333 | 171.95833 | .95275 | 131.41667 | 186.66146 | .70404 |
| employment rate(unrounded), total civilian..... | .10642 | .10823 | .98327 | .08414 | .10705 | .78604 |
| employment rate(unrounded), both sexes 16 to 19..... | .23521 | .23736 | .99096 | .24709 | .36953 | .66867 |
| employment rate(unrounded), men 20 years and over..... | .13470 | .12974 | 1.03820 | .09002 | .11384 | .79075 |
| employment rate(unrounded), women 20 years and over..... | .08283 | .12468 | .66435 | .10780 | .15723 | .68564 |
| employment rate(one decimal), total civilian..... | .10833 | .10000 | 1.08333 | .08333 | .12500 | .66667 |
| employment rate(one decimal), both sexes 16 to 19..... | .23333 | .24166 | .96553 | .26667 | .39167 | .68087 |
| employment rate(one decimal), men 20 years and over..... | .12500 | .12500 | 1.00000 | .09167 | .11667 | .78571 |
| employment rate(one decimal), women 20 years and over..... | .06667 | .12500 | .53333 | .07500 | .14167 | .52941 |
| Directly adjusted component series | | | | | | |
| employment, men 16 to 19..... | 17.25000 | 16.58333 | 1.04020 | 19.08333 | 18.58333 | 1.02691 |
| employment, women 16 to 19..... | 12.41667 | 15.08333 | .82320 | 16.00000 | 24.58333 | .65085 |
| employment, men 20 and over..... | 70.25000 | 69.64866 | 1.00863 | 46.75000 | 60.42503 | .77369 |
| employment, women 20 and over..... | 29.16667 | 45.78042 | .63710 | 39.75000 | 58.06270 | .68460 |
| agricultural employment, men 16 to 19..... | 7.08333 | 7.32432 | .96710 | 8.16667 | 9.55806 | .85443 |
| agricultural employment, women 16 to 19..... | 3.08333 | 5.08260 | .60664 | 4.25000 | 5.28114 | .80475 |
| agricultural employment, men 20 and over..... | 12.08333 | 16.11967 | .74960 | 16.50000 | 20.61117 | .80054 |
| agricultural employment, women 20 and over..... | 12.08333 | 15.77344 | .76606 | 9.66667 | 18.33462 | .52724 |
| nonagricultural employment, men 16 to 19..... | 32.08333 | 35.83333 | .89535 | 23.91667 | 35.66667 | .67056 |
| nonagricultural employment, women 16 to 19..... | 18.33333 | 21.08333 | .86957 | 15.75000 | 24.83333 | .63423 |
| nonagricultural employment, men 20 and over..... | 71.66667 | 51.47428 | 1.39228 | 54.50000 | 61.49414 | .88626 |
| nonagricultural employment, women 20 and over..... | 84.83333 | 93.29655 | .90929 | 66.75000 | 100.72852 | .66267 |

Table 1.
Comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series,
1977-1982-Continued

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| | Average absolute revision of monthly levels | | | Average absolute revision of month-to-month changes | | |
|--|---|-------------------|----------------------------------|---|-------------------|----------------------------------|
| | Concurrent | Projected factors | Ratio of concurrent to projected | Concurrent | Projected factors | Ratio of concurrent to projected |
| Aggregated, indirectly adjusted series | | | | | | |
| Unemployment, both sexes 16 to 19..... | 20.00000 | 31.33333 | 0.63830 | 27.16667 | 34.75000 | 0.78177 |
| Unemployment, both sexes 20 and over..... | 74.00000 | 96.44401 | .76728 | 80.66667 | 113.78874 | .70892 |
| Agricultural employment, both sexes 16 to 19..... | 9.16667 | 8.75682 | 1.04680 | 11.91667 | 11.60573 | 1.02679 |
| Agricultural employment, both sexes 20 and over..... | 18.75000 | 15.71847 | 1.19286 | 21.83333 | 23.66317 | .92267 |
| Nonagricultural employment, both sexes 16 to 19..... | 31.33333 | 33.25000 | .94236 | 39.50000 | 39.08333 | 1.01066 |
| Nonagricultural employment, both sexes 20 and over..... | 204.33333 | 188.29167 | 1.08520 | 103.83333 | 113.67708 | .91341 |
| Civilian labor force, both sexes 16 to 19..... | 37.66667 | 49.27995 | .76434 | 44.41667 | 63.74609 | .69677 |
| Civilian labor force, both sexes 20 and over..... | 180.41667 | 171.20833 | 1.05378 | 111.16667 | 152.91146 | .72700 |
| Unemployment, total..... | 83.16667 | 127.44401 | .65257 | 94.83333 | 134.53874 | .70488 |
| Agricultural employment, total civilian..... | 26.25000 | 23.04392 | 1.13913 | 28.08333 | 34.38645 | .81670 |
| Nonagricultural employment, total civilian..... | 217.66667 | 194.70833 | 1.11791 | 95.00000 | 120.92708 | .78560 |
| Unemployment, total civilian..... | 228.08333 | 211.31771 | 1.07934 | 97.58333 | 140.49479 | .69457 |
| Civilian labor force, total..... | 202.75000 | 171.14063 | 1.18470 | 107.91667 | 178.12500 | .60585 |
| Unemployment rate(unrounded), total civilian..... | .07962 | .11280 | .70580 | .08493 | .11687 | .72673 |
| Unemployment rate(unrounded), both sexes 16 to 19..... | .19195 | .29580 | .64893 | .29027 | .31968 | .90798 |
| Unemployment rate(unrounded), men 20 years and over..... | .12935 | .12996 | .99530 | .13067 | .14723 | .88750 |
| Unemployment rate(unrounded), women 20 years and over..... | .07113 | .09091 | .78252 | .08191 | .12193 | .67178 |
| Unemployment rate(one decimal), total civilian..... | .07500 | .10833 | .69231 | .08333 | .10833 | .76923 |
| Unemployment rate(one decimal), both sexes 16 to 19..... | .18334 | .29167 | .62858 | .30000 | .34167 | .87806 |
| Unemployment rate(one decimal), men 20 years and over..... | .12500 | .13333 | .93750 | .11667 | .15833 | .73684 |
| Unemployment rate(one decimal), women 20 years and over..... | .06667 | .06667 | 1.00000 | .05833 | .09167 | .63636 |
| Directly adjusted component series | | | | | | |
| Unemployment, men 16 to 19..... | 12.66667 | 16.91667 | .74877 | 13.66667 | 19.50000 | .70085 |
| Unemployment, women 16 to 19..... | 13.66667 | 16.75000 | .81592 | 19.33333 | 21.08333 | .91700 |
| Unemployment, men 20 and over..... | 66.83333 | 66.83407 | .99999 | 69.08333 | 78.44141 | .88070 |
| Unemployment, women 20 and over..... | 25.50000 | 33.87830 | .75269 | 33.58333 | 49.16978 | .68301 |
| Agricultural employment, men 16 to 19..... | 8.75000 | 10.22601 | .85566 | 10.08333 | 10.29547 | .97940 |
| Agricultural employment, women 16 to 19..... | 1.75000 | 3.32549 | .52624 | 3.33333 | 5.39932 | .61736 |
| Agricultural employment, men 20 and over..... | 20.33333 | 20.84495 | .97546 | 16.83333 | 26.77246 | .62876 |
| Agricultural employment, women 20 and over..... | 16.41667 | 13.18557 | 1.24505 | 13.33333 | 10.75114 | 1.24018 |
| Nonagricultural employment, men 16 to 19..... | 27.66667 | 32.00000 | .86458 | 25.83333 | 31.91667 | .80940 |
| Nonagricultural employment, women 16 to 19..... | 25.33333 | 30.58333 | .82834 | 21.83333 | 20.83333 | 1.04800 |
| Nonagricultural employment, men 20 and over..... | 88.33333 | 83.94987 | 1.05222 | 51.16667 | 68.76139 | .74412 |
| Nonagricultural employment, women 20 and over..... | 116.00000 | 112.10742 | 1.03472 | 63.50000 | 69.31022 | .91617 |

Table 1.
Comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series,
1977-1982-Continued

1982

| | Average absolute revision of monthly levels | | | Average absolute revision of month-to-month changes | | |
|--|---|-------------------|----------------------------------|---|-------------------|----------------------------------|
| | Concurrent | Projected factors | Ratio of concurrent to projected | Concurrent | Projected factors | Ratio of concurrent to projected |
| Aggregated, indirectly adjusted series | | | | | | |
| Unemployment, both sexes 16 to 19..... | 20.83333 | 24.08333 | 0.86505 | 25.66667 | 30.00000 | 0.85556 |
| Unemployment, both sexes 20 and over..... | 33.58333 | 71.61230 | .46896 | 48.83333 | 90.26986 | .54097 |
| Agricultural employment, both sexes 16 to 19..... | 8.58333 | 11.01878 | .77897 | 11.50000 | 15.19902 | .75663 |
| Agricultural employment, both sexes 20 and over..... | 19.00000 | 24.99290 | .76022 | 15.41667 | 23.12301 | .66672 |
| Nonagricultural employment, both sexes 16 to 19..... | 31.08333 | 29.75000 | 1.04482 | 38.25000 | 30.91667 | 1.23720 |
| Nonagricultural employment, both sexes 20 and over..... | 120.58333 | 127.43750 | .94622 | 59.00000 | 81.80729 | .72121 |
| Civilian labor force, both sexes 16 to 19..... | 29.83333 | 25.30404 | 1.17900 | 45.08333 | 39.76497 | 1.13374 |
| Civilian labor force, both sexes 20 and over..... | 118.83333 | 148.58333 | .79978 | 86.58333 | 112.42708 | .77013 |
| Unemployment, total..... | 45.25000 | 87.27832 | .51846 | 64.33333 | 112.04980 | .57415 |
| Agricultural employment, total civilian..... | 27.41667 | 32.81726 | .83543 | 23.25000 | 33.86987 | .68645 |
| Nonagricultural employment, total civilian..... | 109.33333 | 132.85417 | .82296 | 70.75000 | 83.21354 | .85022 |
| Employment, total civilian..... | 115.41667 | 155.59896 | .74176 | 77.33333 | 93.81250 | .82434 |
| Civilian labor force, total..... | 122.66667 | 161.39583 | .76004 | 101.83333 | 143.21875 | .71103 |
| Unemployment rate(unrounded), total civilian..... | .03923 | .07661 | .51216 | .05415 | .08929 | .60651 |
| Unemployment rate(unrounded), both sexes 16 to 19..... | .23873 | .25937 | .92042 | .28222 | .32685 | .86345 |
| Unemployment rate(unrounded), men 20 years and over..... | .08134 | .12585 | .64632 | .09127 | .15803 | .57755 |
| Unemployment rate(unrounded), women 20 years and over..... | .05869 | .05965 | .98399 | .04736 | .05859 | .80838 |
| Unemployment rate(one decimal), total civilian..... | .05000 | .06667 | .75000 | .09167 | .10000 | .91666 |
| Unemployment rate(one decimal), both sexes 16 to 19..... | .22500 | .23334 | .96428 | .25833 | .28333 | .91176 |
| Unemployment rate(one decimal), men 20 years and over..... | .08333 | .14167 | .58824 | .10833 | .17500 | .61905 |
| Unemployment rate(one decimal), women 20 years and over..... | .05833 | .05000 | 1.16667 | .05000 | .05833 | .85714 |
| Directly adjusted component series | | | | | | |
| Unemployment, men 16 to 19..... | 11.91667 | 15.41667 | .77297 | 15.41667 | 19.66667 | .78390 |
| Unemployment, women 16 to 19..... | 10.25000 | 11.50000 | .89130 | 12.91667 | 17.50000 | .73810 |
| Unemployment, men 20 and over..... | 41.83333 | 66.07845 | .63309 | 47.00000 | 84.82259 | .55410 |
| Unemployment, women 20 and over..... | 22.25000 | 23.59646 | .94294 | 18.83333 | 23.50045 | .80140 |
| Agricultural employment, men 16 to 19..... | 7.08333 | 9.78070 | .72422 | 9.16667 | 12.41323 | .73846 |
| Agricultural employment, women 16 to 19..... | 3.83333 | 3.13600 | 1.22236 | 4.50000 | 3.99422 | 1.12663 |
| Agricultural employment, men 20 and over..... | 22.33333 | 25.92716 | .86139 | 14.75000 | 21.16237 | .69699 |
| Agricultural employment, women 20 and over..... | 14.16667 | 18.81618 | .75290 | 10.16667 | 12.11892 | .83891 |
| Nonagricultural employment, men 16 to 19..... | 22.16667 | 18.50000 | 1.19820 | 25.41667 | 23.00000 | 1.10507 |
| Nonagricultural employment, women 16 to 19..... | 14.25000 | 21.25000 | .67059 | 21.33333 | 24.08333 | .88581 |
| Nonagricultural employment, men 20 and over..... | 39.41667 | 31.34570 | 1.25748 | 21.25000 | 33.49740 | .63438 |
| Nonagricultural employment, women 20 and over..... | 83.83333 | 105.56576 | .79413 | 54.75000 | 67.69694 | .80875 |

Table 1.
Comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series,
1977-1982-Continued

Nine-year average, 1977-82, All months

| | Average absolute revision of monthly levels | | | Average absolute revision of month-to-month changes | | |
|--|---|-------------------|----------------------------------|---|-------------------|----------------------------------|
| | Concurrent | Projected factors | Ratio of concurrent to projected | Concurrent | Projected factors | Ratio of concurrent to projected |
| Aggregated, indirectly adjusted series | | | | | | |
| Unemployment, both sexes 16 to 19..... | 19.19444 | 22.86111 | 0.83961 | 24.84722 | 32.59722 | 0.76225 |
| Unemployment, both sexes 20 and over..... | 53.43056 | 67.86995 | .78725 | 61.83333 | 81.14589 | .76200 |
| Agricultural employment, both sexes 16 to 19..... | 7.86111 | 9.76945 | .80466 | 11.31944 | 14.01106 | .80789 |
| Agricultural employment, both sexes 20 and over..... | 19.29167 | 22.71969 | .84912 | 22.79167 | 29.35753 | .77635 |
| Nonagricultural employment, both sexes 16 to 19..... | 33.94444 | 35.55556 | .95469 | 36.41667 | 42.18056 | .86335 |
| Nonagricultural employment, both sexes 20 and over..... | 110.37500 | 106.39931 | 1.03737 | 71.91667 | 86.74740 | .82904 |
| Civilian labor force, both sexes 16 to 19..... | 34.36111 | 35.76416 | .96077 | 41.19444 | 49.76215 | .82783 |
| Civilian labor force, both sexes 20 and over..... | 107.26389 | 116.15712 | .92344 | 85.34722 | 108.86979 | .78394 |
| Unemployment, total..... | 66.73611 | 83.36833 | .80050 | 77.93056 | 101.33447 | .76904 |
| Agricultural employment, total civilian..... | 23.18056 | 28.01235 | .82751 | 27.33333 | 36.28760 | .75324 |
| Nonagricultural employment, total civilian..... | 114.93056 | 112.52951 | 1.02134 | 73.69444 | 92.52865 | .79645 |
| Employment, total civilian..... | 121.36111 | 127.69531 | .95040 | 84.05556 | 109.14583 | .77012 |
| Civilian labor force, total..... | 113.70833 | 120.85417 | .94087 | 97.26389 | 134.04167 | .72562 |
| Unemployment rate(unrounded), total civilian..... | .06308 | .07620 | .82778 | .07102 | .09092 | .78107 |
| Unemployment rate(unrounded), both sexes 16 to 19..... | .20307 | .24147 | .84098 | .26919 | .34395 | .78264 |
| Unemployment rate(unrounded), men 20 years and over..... | .08890 | .09785 | .90861 | .08362 | .10604 | .78863 |
| Unemployment rate(unrounded), women 20 years and over..... | .07792 | .09796 | .79541 | .09900 | .11853 | .83517 |
| Unemployment rate(one decimal), total civilian..... | .06111 | .06944 | .88000 | .08194 | .09444 | .86765 |
| Unemployment rate(one decimal), both sexes 16 to 19..... | .19583 | .23889 | .81977 | .26528 | .34861 | .76096 |
| Unemployment rate(one decimal), men 20 years and over..... | .08472 | .10278 | .82432 | .08611 | .11944 | .72093 |
| Unemployment rate(one decimal), women 20 years and over..... | .07500 | .09306 | .80597 | .09306 | .11528 | .80723 |
| Directly adjusted component series | | | | | | |
| Unemployment, men 16 to 19..... | 13.01389 | 14.55556 | .89408 | 14.20833 | 17.59722 | .80742 |
| Unemployment, women 16 to 19..... | 11.54167 | 13.94444 | .82769 | 16.13889 | 21.19444 | .76147 |
| Unemployment, men 20 and over..... | 45.59722 | 50.64509 | .90033 | 43.18056 | 55.68533 | .77544 |
| Unemployment, women 20 and over..... | 26.88889 | 34.44682 | .78059 | 35.34722 | 42.53346 | .83105 |
| Agricultural employment, men 16 to 19..... | 7.41667 | 8.86471 | .83665 | 9.43056 | 11.51044 | .81930 |
| Agricultural employment, women 16 to 19..... | 2.58333 | 3.75789 | .68744 | 3.38889 | 4.64772 | .72915 |
| Agricultural employment, men 20 and over..... | 17.40278 | 20.36197 | .85467 | 17.09722 | 22.38854 | .76366 |
| Agricultural employment, women 20 and over..... | 12.63889 | 14.48826 | .87235 | 12.94444 | 15.95851 | .81113 |
| Nonagricultural employment, men 16 to 19..... | 24.59722 | 25.09722 | .98008 | 25.73611 | 29.44444 | .87406 |
| Nonagricultural employment, women 16 to 19..... | 17.54167 | 22.90278 | .76592 | 18.37500 | 25.84722 | .71091 |
| Nonagricultural employment, men 20 and over..... | 51.97222 | 53.11220 | .97854 | 39.18056 | 55.07313 | .71143 |
| Nonagricultural employment, women 20 and over..... | 71.29167 | 78.89882 | .90358 | 55.23611 | 67.52024 | .81807 |

Table 2.
Comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series,
1977-1982-Continued

1977

| | Root mean square revision of monthly levels | | | Root mean square revision of month-to-month changes | | |
|--|--|----------------------|---|--|----------------------|---|
| | Concurrent | Projected factors | Ratio of concurrent to projected | Concurrent | Projected factors | Ratio of concurrent to projected |
| Aggregated, indirectly adjusted series | | | | | | |
| Unemployment, both sexes 16 to 19..... | 21.81933 | 16.65333 | 1.31021 | 32.56404 | 23.25582 | 1.40025 |
| Unemployment, both sexes 20 and over..... | 45.61158 | 45.95546 | .99252 | 65.80337 | 63.54953 | 1.03547 |
| Agricultural employment, both sexes 16 to 19..... | 8.18026 | 11.71693 | .69816 | 13.22246 | 16.69093 | .79219 |
| Agricultural employment, both sexes 20 and over..... | 27.66466 | 27.90836 | .99127 | 36.84653 | 40.29734 | .91437 |
| Nonagricultural employment, both sexes 16 to 19..... | 34.63380 | 42.86510 | .80797 | 36.21349 | 50.55855 | .71627 |
| Nonagricultural employment, both sexes 20 and over..... | 70.16409 | 79.62474 | .88118 | 58.85646 | 83.24952 | .70699 |
| Civilian labor force, both sexes 16 to 19..... | 28.88771 | 36.69644 | .78721 | 28.96262 | 41.96487 | .69016 |
| Civilian labor force, both sexes 20 and over..... | 41.95732 | 63.84891 | .65713 | 51.67366 | 96.13138 | .53753 |
| Unemployment, total..... | 61.20866 | 50.68548 | 1.20762 | 90.38529 | 77.66703 | 1.16375 |
| Agricultural employment, total civilian..... | 29.49152 | 34.67162 | .85060 | 40.64685 | 45.84378 | .88664 |
| Nonagricultural employment, total civilian..... | 86.05521 | 96.76909 | .88928 | 84.72209 | 108.69253 | .77947 |
| Unemployment, total civilian..... | 97.21754 | 107.87049 | .90124 | 110.41135 | 136.41175 | .80940 |
| Civilian labor force, total..... | 51.55499 | 88.24615 | .58422 | 61.57110 | 120.06656 | .51281 |
| Unemployment rate(unrounded), total civilian..... | .06365 | .05257 | 1.21094 | .09168 | .07838 | 1.16975 |
| Unemployment rate(unrounded), both sexes 16 to 19..... | .24114 | .22167 | 1.08784 | .34906 | .29796 | 1.17150 |
| Unemployment rate(unrounded), men 20 years and over..... | .07672 | .08578 | .89434 | .08457 | .10364 | .81599 |
| Unemployment rate(unrounded), women 20 years and over..... | .13137 | .12054 | 1.08981 | .16432 | .14571 | 1.12773 |
| Unemployment rate(one decimal), total civilian..... | .07071 | .05774 | 1.22474 | .11547 | .07638 | 1.51185 |
| Unemployment rate(one decimal), both sexes 16 to 19..... | .25000 | .22546 | 1.10885 | .35119 | .30138 | 1.16527 |
| Unemployment rate(one decimal), men 20 years and over..... | .08660 | .10000 | .86603 | .10000 | .12247 | .81650 |
| Unemployment rate(one decimal), women 20 years and over..... | .11902 | .12247 | .97183 | .15811 | .16073 | .98374 |
| Directly adjusted component series | | | | | | |
| Unemployment, men 16 to 19..... | 18.90326 | 14.86607 | 1.27157 | 21.81360 | 21.26617 | 1.02574 |
| Unemployment, women 16 to 19..... | 12.68529 | 12.46328 | 1.01781 | 15.93999 | 16.74067 | .95217 |
| Unemployment, men 20 and over..... | 36.41543 | 41.00319 | .88811 | 40.21090 | 49.20532 | .81721 |
| Unemployment, women 20 and over..... | 41.86088 | 39.35505 | 1.06367 | 52.62129 | 47.07194 | 1.11789 |
| Agricultural employment, men 16 to 19..... | 8.20061 | 8.39882 | .97640 | 12.03467 | 13.23792 | .90911 |
| Agricultural employment, women 16 to 19..... | 2.41523 | 5.33132 | .45303 | 2.58199 | 5.83403 | .44257 |
| Agricultural employment, men 20 and over..... | 20.12875 | 23.67042 | .85038 | 19.63415 | 25.18992 | .77944 |
| Agricultural employment, women 20 and over..... | 15.26980 | 13.25658 | 1.15186 | 22.40164 | 21.04724 | 1.06435 |
| Nonagricultural employment, men 16 to 19..... | 18.06008 | 19.62566 | .92023 | 19.16377 | 21.72940 | .88193 |
| Nonagricultural employment, women 16 to 19..... | 22.03406 | 28.97269 | .76051 | 27.80288 | 39.89570 | .69689 |
| Nonagricultural employment, men 20 and over..... | 60.69459 | 77.08963 | .78732 | 54.81256 | 76.61988 | .71538 |
| Nonagricultural employment, women 20 and over..... | 33.71449 | 36.35331 | .92741 | 33.72437 | 59.44785 | .56729 |

Table 2.
Comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series,
1977-1982-Continued

1978

| | Root mean square revision of monthly levels | | | Root mean square revision of month-to-month changes | | |
|--|--|----------------------|---|--|----------------------|---|
| | Concurrent | Projected factors | Ratio of concurrent to projected | Concurrent | Projected factors | Ratio of concurrent to projected |
| Aggregated, indirectly adjusted series | | | | | | |
| Unemployment, both sexes 16 to 19..... | 25.28998 | 37.95502 | 0.66631 | 39.90614 | 61.89036 | 0.64479 |
| Unemployment, both sexes 20 and over..... | 52.55394 | 54.19065 | .96980 | 66.02209 | 67.97463 | .97128 |
| Agricultural employment, both sexes 16 to 19..... | 9.96243 | 13.51104 | .73735 | 13.88344 | 19.39873 | .71569 |
| Agricultural employment, both sexes 20 and over..... | 32.23094 | 32.81760 | .98212 | 31.81719 | 40.60468 | .78358 |
| Nonagricultural employment, both sexes 16 to 19..... | 41.55518 | 37.96380 | 1.09460 | 52.40070 | 47.19287 | 1.11035 |
| Nonagricultural employment, both sexes 20 and over..... | 65.68041 | 36.27026 | 1.81086 | 66.64395 | 47.59787 | 1.40015 |
| Civilian labor force, both sexes 16 to 19..... | 42.44997 | 37.03612 | 1.14618 | 57.48261 | 47.50576 | 1.21001 |
| Civilian labor force, both sexes 20 and over..... | 64.72635 | 45.22443 | 1.43123 | 71.71820 | 56.74479 | 1.26387 |
| Unemployment, total..... | 68.58693 | 72.16762 | .95038 | 96.25703 | 115.09210 | .83635 |
| Agricultural employment, total civilian..... | 35.87362 | 38.71862 | .92652 | 36.63446 | 46.49828 | .78787 |
| Nonagricultural employment, total civilian..... | 69.86475 | 45.93361 | 1.52099 | 65.66392 | 60.72612 | 1.08131 |
| Unemployment, total civilian..... | 88.33270 | 71.01643 | 1.24383 | 77.88774 | 95.79886 | .81303 |
| Civilian labor force, total..... | 69.97142 | 50.77911 | 1.37796 | 94.96096 | 74.15024 | 1.28066 |
| Unemployment rate(unrounded), total civilian..... | .06674 | .06978 | .95646 | .09090 | .11048 | .82277 |
| Unemployment rate(unrounded), both sexes 16 to 19..... | .25682 | .37460 | .68559 | .39944 | .60516 | .66005 |
| Unemployment rate(unrounded), men 20 years and over..... | .06194 | .05826 | 1.06320 | .07021 | .07153 | .98152 |
| Unemployment rate(unrounded), women 20 years and over..... | .10671 | .13260 | .80471 | .14938 | .17259 | .86552 |
| Unemployment rate(one decimal), total civilian..... | .07638 | .08165 | .93541 | .11180 | .12583 | .88852 |
| Unemployment rate(one decimal), both sexes 16 to 19..... | .25495 | .35824 | .71168 | .39264 | .58807 | .66766 |
| Unemployment rate(one decimal), men 20 years and over..... | .05773 | .06455 | .89443 | .07638 | .10408 | .73380 |
| Unemployment rate(one decimal), women 20 years and over..... | .11180 | .13540 | .82572 | .15275 | .16833 | .90749 |
| Directly adjusted component series | | | | | | |
| Unemployment, men 16 to 19..... | 17.48809 | 28.35195 | .61682 | 20.62765 | 36.86010 | .55962 |
| Unemployment, women 16 to 19..... | 15.88763 | 19.71252 | .80597 | 22.89105 | 30.51366 | .75019 |
| Unemployment, men 20 and over..... | 31.67149 | 28.85206 | 1.09772 | 36.02545 | 35.89415 | 1.00366 |
| Unemployment, women 20 and over..... | 35.36005 | 43.75041 | .80822 | 51.25183 | 57.32708 | .89402 |
| Agricultural employment, men 16 to 19..... | 9.56556 | 12.37590 | .77292 | 11.97915 | 17.04825 | .70266 |
| Agricultural employment, women 16 to 19..... | 2.50000 | 5.17883 | .48273 | 3.77492 | 5.56273 | .67861 |
| Agricultural employment, men 20 and over..... | 24.20399 | 23.47142 | 1.03121 | 21.47673 | 21.48753 | .99950 |
| Agricultural employment, women 20 and over..... | 12.35584 | 19.55341 | .63190 | 16.29673 | 27.03473 | .60281 |
| Nonagricultural employment, men 16 to 19..... | 27.95085 | 25.37551 | 1.10149 | 40.41658 | 34.85446 | 1.15958 |
| Nonagricultural employment, women 16 to 19..... | 21.94501 | 25.94867 | .84571 | 20.46542 | 33.69718 | .60733 |
| Nonagricultural employment, men 20 and over..... | 38.88552 | 49.94464 | .77857 | 27.52272 | 46.02825 | .59795 |
| Nonagricultural employment, women 20 and over..... | 63.67103 | 60.87292 | 1.04597 | 65.00577 | 60.40217 | 1.07622 |

Table 2.
Comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series,
1977-1982-Continued

1979

| | Root mean square revision of monthly levels | | | Root mean square revision of month-to-month changes | | |
|--|---|-------------------|----------------------------------|---|-------------------|----------------------------------|
| | Concurrent | Projected factors | Ratio of concurrent to projected | Concurrent | Projected factors | Ratio of concurrent to projected |
| Aggregated, indirectly adjusted series | | | | | | |
| Unemployment, both sexes 16 to 19..... | 23.39872 | 28.78657 | 0.81283 | 30.71509 | 44.27471 | 0.69374 |
| Unemployment, both sexes 20 and over..... | 67.07893 | 79.65445 | .84212 | 74.61903 | 88.68892 | .84136 |
| Agricultural employment, both sexes 16 to 19..... | 12.54658 | 11.76466 | 1.06646 | 15.95306 | 16.03223 | .99506 |
| Agricultural employment, both sexes 20 and over..... | 23.97221 | 34.09310 | .70314 | 30.73272 | 43.34192 | .70908 |
| Nonagricultural employment, both sexes 16 to 19..... | 49.48400 | 57.76028 | .85671 | 53.91506 | 71.72343 | .75171 |
| Nonagricultural employment, both sexes 20 and over..... | 107.98495 | 125.47033 | .86064 | 99.81775 | 131.11863 | .76128 |
| Civilian labor force, both sexes 16 to 19..... | 53.69590 | 50.55428 | 1.06214 | 65.02500 | 67.59051 | .96204 |
| Civilian labor force, both sexes 20 and over..... | 114.63784 | 133.64018 | .85781 | 125.49336 | 150.97020 | .83125 |
| Unemployment, total..... | 84.82875 | 101.04102 | .83955 | 96.28820 | 122.07885 | .78874 |
| Agricultural employment, total civilian..... | 23.75044 | 36.06057 | .65863 | 36.23304 | 47.00674 | .77081 |
| Nonagricultural employment, total civilian..... | 90.01157 | 121.20975 | .74261 | 99.96124 | 148.28060 | .67414 |
| Employment, total civilian..... | 95.56324 | 131.43847 | .72706 | 116.67440 | 162.24040 | .71915 |
| Civilian labor force, total..... | 111.44244 | 121.70095 | .91571 | 154.67547 | 176.99721 | .87389 |
| Unemployment rate(unrounded), total civilian..... | .07797 | .09482 | .82227 | .08679 | .11266 | .77035 |
| Unemployment rate(unrounded), both sexes 16 to 19..... | .21634 | .30896 | .70022 | .30111 | .47194 | .63801 |
| Unemployment rate(unrounded), men 20 years and over..... | .08506 | .09730 | .87425 | .08686 | .09784 | .88774 |
| Unemployment rate(unrounded), women 20 years and over..... | .09632 | .12560 | .76688 | .12282 | .16463 | .74608 |
| Unemployment rate(one decimal), total civilian..... | .08660 | .08660 | 1.00000 | .09574 | .10801 | .88641 |
| Unemployment rate(one decimal), both sexes 16 to 19..... | .19791 | .32016 | .61815 | .28137 | .49075 | .57334 |
| Unemployment rate(one decimal), men 20 years and over..... | .09129 | .10408 | .87706 | .09574 | .11180 | .85635 |
| Unemployment rate(one decimal), women 20 years and over..... | .11180 | .14142 | .79057 | .14434 | .18028 | .80064 |
| Directly adjusted component series | | | | | | |
| Unemployment, men 16 to 19..... | 13.53083 | 11.84272 | 1.14254 | 15.38127 | 18.49549 | .83162 |
| Unemployment, women 16 to 19..... | 13.79915 | 20.36132 | .67771 | 20.68010 | 29.30301 | .70573 |
| Unemployment, men 20 and over..... | 45.17189 | 51.49506 | .87721 | 46.62439 | 51.98587 | .89687 |
| Unemployment, women 20 and over..... | 32.52051 | 42.86627 | .75865 | 42.96510 | 58.60807 | .73309 |
| Agricultural employment, men 16 to 19..... | 11.13553 | 10.71686 | 1.03907 | 13.21615 | 13.90334 | .95057 |
| Agricultural employment, women 16 to 19..... | 3.50000 | 3.35842 | 1.04216 | 4.08248 | 4.22155 | .96706 |
| Agricultural employment, men 20 and over..... | 18.46167 | 25.71943 | .71781 | 24.55436 | 31.58173 | .77749 |
| Agricultural employment, women 20 and over..... | 12.56317 | 16.12422 | .77915 | 17.06605 | 21.87624 | .78012 |
| Nonagricultural employment, men 16 to 19..... | 41.44374 | 42.03570 | .98592 | 42.54605 | 50.82076 | .83718 |
| Nonagricultural employment, women 16 to 19..... | 13.41951 | 24.91820 | .53854 | 14.46836 | 28.70250 | .50408 |
| Nonagricultural employment, men 20 and over..... | 45.83303 | 54.17623 | .84600 | 56.07213 | 76.70297 | .73103 |
| Nonagricultural employment, women 20 and over..... | 90.19470 | 101.32860 | .89012 | 89.86657 | 98.13062 | .91579 |

Table 2. Comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series, 1977-1982-Continued

980

| | Root mean square revision of monthly levels | | | Root mean square revision of month-to-month changes | | |
|--|---|-------------------|----------------------------------|---|-------------------|----------------------------------|
| | Concurrent | Projected factors | Ratio of concurrent to projected | Concurrent | Projected factors | Ratio of concurrent to projected |
| Aggregated, indirectly adjusted series | | | | | | |
| employment, both sexes 16 to 19..... | 31.03493 | 33.69471 | 0.92106 | 40.58838 | 50.83470 | 0.79844 |
| employment, both sexes 20 and over..... | 117.24654 | 132.77769 | .88303 | 83.92656 | 120.77917 | .69488 |
| agricultural employment, both sexes 16 to 19..... | 9.69536 | 12.10933 | .80065 | 11.60819 | 14.83346 | .78257 |
| agricultural employment, both sexes 20 and over..... | 16.48737 | 22.32545 | .73850 | 19.14854 | 35.35260 | .54164 |
| nonagricultural employment, both sexes 16 to 19..... | 45.92294 | 49.40057 | .92960 | 35.72348 | 66.73455 | .53531 |
| nonagricultural employment, both sexes 20 and over..... | 176.00237 | 165.64630 | 1.06252 | 109.57760 | 146.09032 | .75007 |
| civilian labor force, both sexes 16 to 19..... | 56.70611 | 64.57474 | .87815 | 64.52777 | 94.61093 | .68203 |
| civilian labor force, both sexes 20 and over..... | 183.51771 | 212.15370 | .86502 | 131.19356 | 181.98339 | .72091 |
| employment, total..... | 135.01759 | 153.27438 | .88089 | 104.70793 | 152.90875 | .68477 |
| agricultural employment, total civilian..... | 19.85783 | 28.24283 | .70311 | 26.84368 | 46.09752 | .58232 |
| nonagricultural employment, total civilian..... | 192.05663 | 150.88757 | 1.27285 | 104.96626 | 135.79828 | .77296 |
| employment, total civilian..... | 202.14578 | 160.60324 | 1.25867 | 119.39849 | 160.60005 | .74345 |
| civilian labor force, total..... | 196.93315 | 219.63840 | .89662 | 160.85889 | 235.68188 | .68253 |
| employment rate(unrounded), total civilian..... | .12345 | .13386 | .92225 | .09114 | .13144 | .69342 |
| employment rate(unrounded), both sexes 16 to 19..... | .27376 | .29719 | .92115 | .34001 | .45663 | .74461 |
| employment rate(unrounded), men 20 years and over..... | .17131 | .16722 | 1.02441 | .09900 | .14368 | .68900 |
| employment rate(unrounded), women 20 years and over..... | .10215 | .14933 | .68406 | .11797 | .18091 | .65206 |
| employment rate(one decimal), total civilian..... | .12583 | .12910 | .97468 | .10801 | .13844 | .78019 |
| employment rate(one decimal), both sexes 16 to 19..... | .27689 | .30957 | .89444 | .36515 | .47871 | .76279 |
| employment rate(one decimal), men 20 years and over..... | .18028 | .16583 | 1.08711 | .11180 | .15275 | .73192 |
| employment rate(one decimal), women 20 years and over..... | .09129 | .15000 | .60858 | .10408 | .17559 | .59275 |
| Directly adjusted component series | | | | | | |
| employment, men 16 to 19..... | 22.03596 | 19.78846 | 1.11358 | 27.87920 | 26.13905 | 1.06657 |
| employment, women 16 to 19..... | 15.71358 | 18.54050 | .84753 | 20.34699 | 28.86607 | .70488 |
| employment, men 20 and over..... | 89.42082 | 89.26688 | 1.00172 | 52.30758 | 75.56428 | .69223 |
| employment, women 20 and over..... | 35.58558 | 54.26436 | .65578 | 43.07842 | 66.96840 | .64326 |
| agricultural employment, men 16 to 19..... | 8.95824 | 9.73081 | .92061 | 9.41630 | 11.53896 | .81604 |
| agricultural employment, women 16 to 19..... | 3.77492 | 5.92649 | .63696 | 5.07445 | 6.43303 | .78881 |
| agricultural employment, men 20 and over..... | 15.97655 | 19.91966 | .80205 | 20.79663 | 28.45083 | .73097 |
| agricultural employment, women 20 and over..... | 14.47699 | 17.17239 | .84304 | 13.31040 | 24.12873 | .55164 |
| nonagricultural employment, men 16 to 19..... | 37.02139 | 48.29251 | .76661 | 29.25036 | 50.10655 | .58376 |
| nonagricultural employment, women 16 to 19..... | 21.51356 | 25.18763 | .85413 | 19.15942 | 30.02776 | .63806 |
| nonagricultural employment, men 20 and over..... | 79.12543 | 59.33214 | 1.33360 | 67.91784 | 73.84690 | .91971 |
| nonagricultural employment, women 20 and over..... | 111.39270 | 127.60761 | .87293 | 80.03489 | 121.07585 | .66103 |

Table 2.
Comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series,
1977-1982-Continued

1981

| | Root mean square revision of monthly levels | | | Root mean square revision of month-to-month changes | | |
|--|--|----------------------|---|--|----------------------|---|
| | Concurrent | Projected factors | Ratio of concurrent to projected | Concurrent | Projected factors | Ratio of concurrent to projected |
| Aggregated, indirectly adjusted series | | | | | | |
| Unemployment, both sexes 16 to 19..... | 25.98397 | 38.12917 | 0.68147 | 35.82829 | 50.71078 | 0.70652 |
| Unemployment, both sexes 20 and over..... | 103.59295 | 131.63027 | .78700 | 104.31443 | 129.79788 | .80367 |
| Agricultural employment, both sexes 16 to 19..... | 11.17288 | 11.49458 | .97201 | 13.75076 | 14.30584 | .96120 |
| Agricultural employment, both sexes 20 and over..... | 21.75814 | 19.98211 | 1.08888 | 25.91010 | 29.22331 | .88662 |
| Nonagricultural employment, both sexes 16 to 19..... | 42.83106 | 41.49598 | 1.03217 | 54.69004 | 53.31432 | 1.02580 |
| Nonagricultural employment, both sexes 20 and over..... | 233.58260 | 223.18689 | 1.04658 | 117.44644 | 147.28575 | .79741 |
| Civilian labor force, both sexes 16 to 19..... | 52.84253 | 63.11425 | .83725 | 54.44493 | 86.84455 | .62692 |
| Civilian labor force, both sexes 20 and over..... | 202.78827 | 213.79698 | .94851 | 132.01389 | 186.79887 | .70672 |
| Unemployment, total..... | 116.47675 | 157.52158 | .73943 | 124.41664 | 159.94120 | .77789 |
| Agricultural employment, total civilian..... | 30.03470 | 28.19357 | 1.06530 | 33.30540 | 37.80872 | .88089 |
| Nonagricultural employment, total civilian..... | 244.04235 | 227.78891 | 1.07135 | 119.18613 | 148.50635 | .80257 |
| Employment, total civilian..... | 256.82793 | 245.81877 | 1.04479 | 127.40323 | 172.06959 | .74042 |
| Civilian labor force, total..... | 221.06353 | 222.88983 | .99181 | 138.75848 | 219.82766 | .63121 |
| Unemployment rate(unrounded), total civilian..... | .10864 | .14214 | .76437 | .10981 | .13829 | .79405 |
| Unemployment rate(unrounded), both sexes 16 to 19..... | .24656 | .34674 | .71109 | .37224 | .43897 | .84799 |
| Unemployment rate(unrounded), men 20 years and over..... | .17886 | .20211 | .88493 | .16418 | .18104 | .90687 |
| Unemployment rate(unrounded), women 20 years and over..... | .09348 | .11548 | .80943 | .09975 | .14642 | .68128 |
| Unemployment rate(one decimal), total civilian..... | .11180 | .13229 | .84515 | .11547 | .13844 | .83406 |
| Unemployment rate(one decimal), both sexes 16 to 19..... | .25166 | .34521 | .72903 | .38514 | .44064 | .87405 |
| Unemployment rate(one decimal), men 20 years and over..... | .18028 | .20412 | .88318 | .15811 | .18930 | .83527 |
| Unemployment rate(one decimal), women 20 years and over..... | .09129 | .10801 | .84515 | .07638 | .11902 | .64169 |
| Directly adjusted component series | | | | | | |
| Unemployment, men 16 to 19..... | 16.17611 | 21.58510 | .74941 | 19.12677 | 27.89265 | .68573 |
| Unemployment, women 16 to 19..... | 15.51881 | 20.62967 | .75226 | 22.30844 | 28.01636 | .79626 |
| Unemployment, men 20 and over..... | 91.38381 | 103.64260 | .88172 | 85.60617 | 94.71712 | .90381 |
| Unemployment, women 20 and over..... | 33.02777 | 43.25410 | .76358 | 38.87909 | 57.13417 | .68049 |
| Agricultural employment, men 16 to 19..... | 10.38829 | 12.08562 | .85956 | 11.80748 | 12.57959 | .93862 |
| Agricultural employment, women 16 to 19..... | 2.53311 | 4.24163 | .59720 | 3.95811 | 6.19662 | .63875 |
| Agricultural employment, men 20 and over..... | 23.34167 | 27.05099 | .86288 | 20.77659 | 30.73925 | .67590 |
| Agricultural employment, women 20 and over..... | 19.75896 | 16.14577 | 1.22379 | 20.54669 | 13.45928 | 1.52658 |
| Nonagricultural employment, men 16 to 19..... | 31.87214 | 37.55219 | .84874 | 39.95831 | 46.77517 | .85426 |
| Nonagricultural employment, women 16 to 19..... | 29.76295 | 34.92969 | .85208 | 25.57016 | 28.59779 | .89413 |
| Nonagricultural employment, men 20 and over..... | 104.01442 | 103.96205 | 1.00050 | 61.01776 | 84.00282 | .72638 |
| Nonagricultural employment, women 20 and over..... | 139.11446 | 133.07448 | 1.04539 | 81.06890 | 94.72951 | .85579 |

Table 2.
Comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series,
1977-1982-Continued

982

| | Root mean square revision of monthly levels | | | Root mean square revision of month-to-month changes | | |
|--|---|-------------------|----------------------------------|---|-------------------|----------------------------------|
| | Concurrent | Projected factors | Ratio of concurrent to projected | Concurrent | Projected factors | Ratio of concurrent to projected |
| Aggregated, indirectly adjusted series | | | | | | |
| Unemployment, both sexes 16 to 19..... | 25.51470 | 27.87024 | 0.91548 | 32.83799 | 39.57272 | 0.82981 |
| Unemployment, both sexes 20 and over..... | 40.95221 | 85.61814 | .47831 | 60.44695 | 107.65147 | .56151 |
| Agricultural employment, both sexes 16 to 19..... | 12.54658 | 13.49473 | .92974 | 13.76590 | 17.55591 | .78412 |
| Agricultural employment, both sexes 20 and over..... | 23.88514 | 28.64043 | .83397 | 19.20720 | 27.99076 | .68620 |
| Nonagricultural employment, both sexes 16 to 19..... | 35.43421 | 33.70584 | 1.05128 | 49.47979 | 46.44082 | 1.06544 |
| Nonagricultural employment, both sexes 20 and over..... | 132.60373 | 148.02076 | .89585 | 83.40763 | 100.64548 | .82873 |
| Civilian labor force, both sexes 16 to 19..... | 35.06185 | 34.61248 | 1.01298 | 55.99033 | 52.70103 | 1.06241 |
| Civilian labor force, both sexes 20 and over..... | 131.23960 | 163.95446 | .80046 | 107.75783 | 151.58411 | .71088 |
| Unemployment, total..... | 56.45573 | 105.87838 | .53321 | 83.66401 | 138.91520 | .60227 |
| Agricultural employment, total civilian..... | 34.14308 | 37.60369 | .90797 | 28.35636 | 38.71941 | .73236 |
| Nonagricultural employment, total civilian..... | 129.04457 | 147.05502 | .87753 | 110.68913 | 114.87553 | .96356 |
| Unemployment, total civilian..... | 138.44223 | 168.55211 | .82136 | 124.00336 | 133.39734 | .92958 |
| Civilian labor force, total..... | 133.40227 | 179.99919 | .74113 | 135.83200 | 188.15255 | .72192 |
| Unemployment rate(unrounded), total civilian..... | .05145 | .09093 | .56587 | .07228 | .11564 | .62499 |
| Unemployment rate(unrounded), both sexes 16 to 19..... | .29257 | .29728 | .98418 | .34521 | .41190 | .83810 |
| Unemployment rate(unrounded), men 20 years and over..... | .09100 | .15184 | .59933 | .11598 | .17997 | .64442 |
| Unemployment rate(unrounded), women 20 years and over..... | .07409 | .07761 | .95467 | .06087 | .07819 | .77843 |
| Unemployment rate(one decimal), total civilian..... | .07071 | .09129 | .77459 | .11180 | .13540 | .82572 |
| Unemployment rate(one decimal), both sexes 16 to 19..... | .27839 | .27689 | 1.00542 | .31491 | .37639 | .83666 |
| Unemployment rate(one decimal), men 20 years and over..... | .10000 | .17078 | .58554 | .14434 | .19791 | .72933 |
| Unemployment rate(one decimal), women 20 years and over..... | .08660 | .07071 | 1.22474 | .07071 | .08660 | .81650 |
| Directly adjusted component series | | | | | | |
| Unemployment, men 16 to 19..... | 15.69766 | 18.64806 | .84179 | 20.07278 | 23.74167 | .84547 |
| Unemployment, women 16 to 19..... | 13.01602 | 14.22439 | .91505 | 16.88441 | 22.30471 | .75699 |
| Unemployment, men 20 and over..... | 46.85972 | 79.46526 | .58969 | 60.95080 | 95.83087 | .63602 |
| Unemployment, women 20 and over..... | 28.65164 | 29.26992 | .97888 | 22.15852 | 29.47804 | .75170 |
| Agricultural employment, men 16 to 19..... | 9.86154 | 12.13021 | .81297 | 10.69268 | 14.72044 | .72638 |
| Agricultural employment, women 16 to 19..... | 4.60072 | 3.74477 | 1.22857 | 5.62731 | 4.82771 | 1.16563 |
| Agricultural employment, men 20 and over..... | 24.44040 | 30.36115 | .80499 | 16.24551 | 25.06104 | .64824 |
| Agricultural employment, women 20 and over..... | 16.39105 | 21.51910 | .76170 | 14.27702 | 16.80198 | .84972 |
| Nonagricultural employment, men 16 to 19..... | 27.63753 | 23.27373 | 1.18750 | 34.54828 | 31.65175 | 1.09151 |
| Nonagricultural employment, women 16 to 19..... | 17.46186 | 25.28998 | .69047 | 26.26468 | 29.72793 | .88350 |
| Nonagricultural employment, men 20 and over..... | 48.03731 | 38.51590 | 1.24721 | 25.10810 | 39.06126 | .64279 |
| Nonagricultural employment, women 20 and over..... | 99.81483 | 121.09733 | .82425 | 72.53218 | 81.21778 | .89306 |

Table 2:
Comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series,
1977-1982-Continued

Six-year average, 1977-82, All months

| | Root mean square revision of monthly levels | | | Root mean square revision of month-to-month changes | | |
|--|--|----------------------|---|--|----------------------|---|
| | Concurrent | Projected factors | Ratio of concurrent to projected | Concurrent | Projected factors | Ratio of concurrent to projected |
| Aggregated, indirectly adjusted series | | | | | | |
| Unemployment, both sexes 16 to 19..... | 25.66613 | 31.39135 | 0.81762 | 35.60372 | 46.64270 | 0.76333 |
| Unemployment, both sexes 20 and over..... | 76.91689 | 94.58706 | .81319 | 77.28303 | 99.62325 | .77575 |
| Agricultural employment, both sexes 16 to 19..... | 10.79995 | 12.37680 | .87260 | 13.75631 | 16.55712 | .83084 |
| Agricultural employment, both sexes 20 and over..... | 24.81459 | 28.09566 | .88322 | 28.05179 | 36.60243 | .76639 |
| Nonagricultural employment, both sexes 16 to 19..... | 41.98015 | 44.55957 | .94211 | 47.74847 | 56.83346 | .84015 |
| Nonagricultural employment, both sexes 20 and over..... | 143.77012 | 142.92170 | 1.00594 | 91.85753 | 115.14710 | .79774 |
| Civilian labor force, both sexes 16 to 19..... | 46.11037 | 49.37166 | .93394 | 55.72901 | 68.13825 | .81788 |
| Civilian labor force, both sexes 20 and over..... | 136.08662 | 153.61263 | .88591 | 107.86830 | 145.05328 | .74365 |
| Unemployment, total..... | 91.86078 | 113.65356 | .80825 | 100.12430 | 130.66580 | .76626 |
| Agricultural employment, total civilian..... | 29.39081 | 34.17648 | .85997 | 34.01225 | 43.83121 | .77598 |
| Nonagricultural employment, total civilian..... | 149.15517 | 142.85539 | 1.04410 | 99.12716 | 123.27514 | .80411 |
| Employment, total civilian..... | 159.36122 | 157.36663 | 1.01267 | 113.82333 | 145.66097 | .78143 |
| Civilian labor force, total..... | 144.58057 | 160.98532 | .89810 | 129.30127 | 178.19174 | .72563 |
| Unemployment rate(unrounded), total civilian..... | .08590 | .10248 | .83825 | .09109 | .11606 | .78492 |
| Unemployment rate(unrounded), both sexes 16 to 19..... | .25568 | .31141 | .82106 | .35247 | .45618 | .77265 |
| Unemployment rate(unrounded), men 20 years and over..... | .12012 | .13668 | .87885 | .10788 | .13616 | .79231 |
| Unemployment rate(unrounded), women 20 years and over..... | .10213 | .12217 | .83599 | .12381 | .15188 | .81519 |
| Unemployment rate(one decimal), total civilian..... | .09280 | .10000 | .92796 | .10992 | .12247 | .89753 |
| Unemployment rate(one decimal), both sexes 16 to 19..... | .25304 | .30912 | .81858 | .35060 | .45506 | .77043 |
| Unemployment rate(one decimal), men 20 years and over..... | .12528 | .14337 | .87379 | .11785 | .15092 | .78087 |
| Unemployment rate(one decimal), women 20 years and over..... | .10274 | .12416 | .82746 | .12304 | .15230 | .80790 |
| Directly adjusted component series | | | | | | |
| Unemployment, men 16 to 19..... | 17.51150 | 19.87600 | .88104 | 21.14993 | 26.38787 | .80150 |
| Unemployment, women 16 to 19..... | 14.49665 | 17.93584 | .80825 | 20.01041 | 26.41233 | .75762 |
| Unemployment, men 20 and over..... | 61.79615 | 70.93487 | .87117 | 56.07745 | 71.03630 | .78942 |
| Unemployment, women 20 and over..... | 34.73311 | 42.76428 | .81220 | 43.01179 | 54.09113 | .79517 |
| Agricultural employment, men 16 to 19..... | 9.73111 | 11.00339 | .88437 | 11.58603 | 13.94796 | .83066 |
| Agricultural employment, women 16 to 19..... | 3.32081 | 4.71982 | .70359 | 4.29470 | 5.56612 | .77158 |
| Agricultural employment, men 20 and over..... | 21.32780 | 25.24227 | .84492 | 20.72740 | 27.31318 | .75888 |
| Agricultural employment, women 20 and over..... | 15.34239 | 17.49625 | .87690 | 17.61549 | 21.20569 | .83070 |
| Nonagricultural employment, men 16 to 19..... | 31.55749 | 34.35133 | .91867 | 35.25325 | 40.76389 | .86482 |
| Nonagricultural employment, women 16 to 19..... | 21.60536 | 27.77214 | .77795 | 22.77395 | 32.02668 | .71109 |
| Nonagricultural employment, men 20 and over..... | 66.68833 | 67.31051 | .99076 | 51.43348 | 68.20089 | .75415 |
| Nonagricultural employment, women 20 and over..... | 95.78615 | 103.24053 | .92780 | 72.66103 | 88.54515 | .82061 |

Table 3.
Comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series,
1977-1982-Continued

1977

| | Root mean square proportional revision of monthly levels | | | Root mean square revision of month-to-month percentage change | | |
|--|--|-------------------|----------------------------------|---|-------------------|----------------------------------|
| | Concurrent | Projected factors | Ratio of concurrent to projected | Concurrent | Projected factors | Ratio of concurrent to projected |
| Aggregated, indirectly adjusted series | | | | | | |
| Unemployment, both sexes 16 to 19..... | 0.01269 | 0.00988 | 1.28448 | 0.01904 | 0.01406 | 1.35475 |
| Unemployment, both sexes 20 and over..... | .00872 | .00856 | 1.01927 | .01212 | .01126 | 1.07622 |
| Agricultural employment, both sexes 16 to 19..... | .02037 | .02886 | .70580 | .03331 | .04242 | .78527 |
| Agricultural employment, both sexes 20 and over..... | .00941 | .00973 | .96755 | .01253 | .01368 | .91591 |
| Nonagricultural employment, both sexes 16 to 19..... | .00477 | .00585 | .81671 | .00506 | .00696 | .72660 |
| Nonagricultural employment, both sexes 20 and over..... | .00086 | .00098 | .87493 | .00073 | .00103 | .70914 |
| Civilian labor force, both sexes 16 to 19..... | .00310 | .00390 | .79560 | .00314 | .00448 | .70018 |
| Civilian labor force, both sexes 20 and over..... | .00047 | .00071 | .65746 | .00058 | .00108 | .53826 |
| Unemployment, total..... | .00888 | .00718 | 1.23604 | .01285 | .01063 | 1.20915 |
| Agricultural employment, total civilian..... | .00881 | .01055 | .83450 | .01210 | .01356 | .89250 |
| Nonagricultural employment, total civilian..... | .00097 | .00109 | .88852 | .00096 | .00123 | .78237 |
| Employment, total civilian..... | .00105 | .00117 | .90438 | .00120 | .00148 | .81187 |
| Civilian labor force, total..... | .00052 | .00089 | .58592 | .00062 | .00122 | .51331 |
| Unemployment rate(unrounded), total civilian..... | .00914 | .00737 | 1.24081 | .01285 | .01059 | 1.21256 |
| Unemployment rate(unrounded), both sexes 16 to 19..... | .01314 | .01232 | 1.06654 | .01902 | .01654 | 1.15006 |
| Unemployment rate(unrounded), men 20 years and over..... | .01379 | .01557 | .88572 | .01516 | .01872 | .80989 |
| Unemployment rate(unrounded), women 20 years and over..... | .01803 | .01572 | 1.14683 | .02168 | .01834 | 1.18226 |
| Unemployment rate(one decimal), total civilian..... | .00997 | .00820 | 1.21472 | .01607 | .01051 | 1.52938 |
| Unemployment rate(one decimal), both sexes 16 to 19..... | .01365 | .01253 | 1.09009 | .01926 | .01683 | 1.14463 |
| Unemployment rate(one decimal), men 20 years and over..... | .01587 | .01828 | .86815 | .01843 | .02265 | .81332 |
| Unemployment rate(one decimal), women 20 years and over..... | .01630 | .01600 | 1.01868 | .02095 | .02064 | 1.01509 |
| Directly adjusted component series | | | | | | |
| Unemployment, men 16 to 19..... | .02050 | .01650 | 1.24299 | .02306 | .02350 | .98135 |
| Unemployment, women 16 to 19..... | .01613 | .01608 | 1.00276 | .02035 | .02158 | .94298 |
| Unemployment, men 20 and over..... | .01292 | .01470 | .87859 | .01426 | .01754 | .81299 |
| Unemployment, women 20 and over..... | .01698 | .01541 | 1.10235 | .02069 | .01786 | 1.15835 |
| Agricultural employment, men 16 to 19..... | .02442 | .02465 | .99054 | .03657 | .03977 | .91948 |
| Agricultural employment, women 16 to 19..... | .03674 | .07266 | .50572 | .04179 | .08595 | .48621 |
| Agricultural employment, men 20 and over..... | .00859 | .01018 | .84380 | .00840 | .01077 | .77974 |
| Agricultural employment, women 20 and over..... | .02673 | .02454 | 1.08960 | .03934 | .03736 | 1.05294 |
| Nonagricultural employment, men 16 to 19..... | .00477 | .00513 | .93025 | .00513 | .00583 | .88120 |
| Nonagricultural employment, women 16 to 19..... | .00638 | .00837 | .76186 | .00813 | .01169 | .69540 |
| Nonagricultural employment, men 20 and over..... | .00125 | .00160 | .78528 | .00114 | .00159 | .71623 |
| Nonagricultural employment, women 20 and over..... | .00101 | .00108 | .92937 | .00102 | .00178 | .57643 |

Table 3.
Comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series,
1977-1982-Continued

1978

| | Root mean square proportional revision of monthly levels | | | Root mean square revision of month-to-month percentage change | | |
|--|--|-------------------|----------------------------------|---|-------------------|----------------------------------|
| | Concurrent | Projected factors | Ratio of concurrent to projected | Concurrent | Projected factors | Ratio of concurrent to projected |
| Aggregated, indirectly adjusted series | | | | | | |
| Unemployment, both sexes 16 to 19..... | 0.01648 | 0.02492 | 0.66111 | 0.02556 | 0.04134 | 0.61826 |
| Unemployment, both sexes 20 and over..... | .01141 | .01169 | .97665 | .01409 | .01455 | .96822 |
| Agricultural employment, both sexes 16 to 19..... | .02552 | .03385 | .75385 | .03526 | .04539 | .77684 |
| Agricultural employment, both sexes 20 and over..... | .01080 | .01103 | .97970 | .01077 | .01397 | .77056 |
| Nonagricultural employment, both sexes 16 to 19..... | .00538 | .00492 | 1.09307 | .00679 | .00617 | 1.10031 |
| Nonagricultural employment, both sexes 20 and over..... | .00077 | .00043 | 1.80161 | .00079 | .00057 | 1.39141 |
| Civilian labor force, both sexes 16 to 19..... | .00436 | .00384 | 1.13624 | .00590 | .00492 | 1.19971 |
| Civilian labor force, both sexes 20 and over..... | .00070 | .00049 | 1.43153 | .00078 | .00061 | 1.26497 |
| Unemployment, total..... | .01116 | .01174 | .95057 | .01529 | .01852 | .82546 |
| Agricultural employment, total civilian..... | .01062 | .01148 | .92514 | .01091 | .01406 | .77613 |
| Nonagricultural employment, total civilian..... | .00075 | .00050 | 1.51613 | .00071 | .00066 | 1.07786 |
| Employment, total civilian..... | .00092 | .00074 | 1.24248 | .00082 | .00100 | .81242 |
| Civilian labor force, total..... | .00068 | .00050 | 1.37814 | .00093 | .00073 | 1.28179 |
| Unemployment rate(unrounded), total civilian..... | .01105 | .01156 | .95606 | .01462 | .01805 | .81003 |
| Unemployment rate(unrounded), both sexes 16 to 19..... | .01609 | .02386 | .67422 | .02433 | .03887 | .62586 |
| Unemployment rate(unrounded), men 20 years and over..... | .01391 | .01330 | 1.04602 | .01544 | .01598 | .96622 |
| Unemployment rate(unrounded), women 20 years and over..... | .01677 | .02065 | .81220 | .02319 | .02624 | .88371 |
| Unemployment rate(one decimal), total civilian..... | .01271 | .01351 | .94071 | .01823 | .02037 | .89503 |
| Unemployment rate(one decimal), both sexes 16 to 19..... | .01591 | .02282 | .69729 | .02395 | .03783 | .63308 |
| Unemployment rate(one decimal), men 20 years and over..... | .01286 | .01479 | .86961 | .01638 | .02318 | .70688 |
| Unemployment rate(one decimal), women 20 years and over..... | .01753 | .02103 | .83355 | .02362 | .02577 | .91688 |
| Directly adjusted component series | | | | | | |
| Unemployment, men 16 to 19..... | .02250 | .03715 | .60559 | .02738 | .05359 | .51091 |
| Unemployment, women 16 to 19..... | .02067 | .02548 | .81126 | .02960 | .03874 | .76417 |
| Unemployment, men 20 and over..... | .01368 | .01262 | 1.08400 | .01529 | .01539 | .99354 |
| Unemployment, women 20 and over..... | .01559 | .01919 | .81221 | .02241 | .02476 | .90508 |
| Agricultural employment, men 16 to 19..... | .03042 | .03938 | .77242 | .03767 | .05053 | .74554 |
| Agricultural employment, women 16 to 19..... | .03354 | .06208 | .54030 | .05105 | .06336 | .80565 |
| Agricultural employment, men 20 and over..... | .01015 | .00985 | 1.02997 | .00912 | .00916 | .99644 |
| Agricultural employment, women 20 and over..... | .02112 | .03335 | .63344 | .02808 | .04768 | .58901 |
| Nonagricultural employment, men 16 to 19..... | .00691 | .00624 | 1.10735 | .00996 | .00861 | 1.15753 |
| Nonagricultural employment, women 16 to 19..... | .00599 | .00706 | .84878 | .00559 | .00914 | .61184 |
| Nonagricultural employment, men 20 and over..... | .00078 | .00100 | .77261 | .00055 | .00093 | .59717 |
| Nonagricultural employment, women 20 and over..... | .00181 | .00173 | 1.04916 | .00186 | .00174 | 1.06974 |

Table 3.
Comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series, 1977-1982-Continued

979

| | Root mean square proportional revision of monthly levels | | | Root mean square revision of month-to-month percentage change | | |
|--|--|-------------------|----------------------------------|---|-------------------|----------------------------------|
| | Concurrent | Projected factors | Ratio of concurrent to projected | Concurrent | Projected factors | Ratio of concurrent to projected |
| Aggregated, indirectly adjusted series | | | | | | |
| Unemployment, both sexes 16 to 19..... | 0.01518 | 0.01870 | 0.81183 | 0.01940 | 0.02784 | 0.69679 |
| Unemployment, both sexes 20 and over..... | .01502 | .01777 | .84482 | .01674 | .01978 | .84636 |
| Agricultural employment, both sexes 16 to 19..... | .03185 | .03151 | 1.01080 | .04243 | .04474 | .94838 |
| Agricultural employment, both sexes 20 and over..... | .00804 | .01140 | .70513 | .01031 | .01432 | .71992 |
| Nonagricultural employment, both sexes 16 to 19..... | .00645 | .00755 | .85471 | .00716 | .00949 | .75457 |
| Nonagricultural employment, both sexes 20 and over..... | .00123 | .00143 | .86065 | .00114 | .00150 | .76013 |
| Civilian labor force, both sexes 16 to 19..... | .00562 | .00530 | 1.05983 | .00687 | .00720 | .95504 |
| Civilian labor force, both sexes 20 and over..... | .00120 | .00140 | .85820 | .00132 | .00159 | .83096 |
| Unemployment, total..... | .01420 | .01687 | .84218 | .01598 | .02014 | .79343 |
| Agricultural employment, total civilian..... | .00710 | .01079 | .65823 | .01081 | .01381 | .78233 |
| Nonagricultural employment, total civilian..... | .00094 | .00127 | .74169 | .00105 | .00156 | .67407 |
| Unemployment, total civilian..... | .00097 | .00133 | .72605 | .00118 | .00164 | .71981 |
| Civilian labor force, total..... | .00106 | .00116 | .91743 | .00148 | .00170 | .87458 |
| Unemployment rate(unrounded), total civilian..... | .01362 | .01652 | .82406 | .01503 | .01939 | .77505 |
| Unemployment rate(unrounded), both sexes 16 to 19..... | .01343 | .01920 | .69969 | .01844 | .02866 | .64349 |
| Unemployment rate(unrounded), men 20 years and over..... | .02015 | .02272 | .88686 | .02068 | .02309 | .89563 |
| Unemployment rate(unrounded), women 20 years and over..... | .01579 | .02088 | .75633 | .02049 | .02746 | .74633 |
| Unemployment rate(one decimal), total civilian..... | .01503 | .01503 | 1.00000 | .01652 | .01859 | .88838 |
| Unemployment rate(one decimal), both sexes 16 to 19..... | .01227 | .01984 | .61871 | .01726 | .02985 | .57810 |
| Unemployment rate(one decimal), men 20 years and over..... | .02131 | .02404 | .88663 | .02260 | .02572 | .87872 |
| Unemployment rate(one decimal), women 20 years and over..... | .01832 | .02342 | .78229 | .02348 | .02985 | .78663 |
| Directly adjusted component series | | | | | | |
| Unemployment, men 16 to 19..... | .01708 | .01499 | 1.13896 | .01889 | .02214 | .85296 |
| Unemployment, women 16 to 19..... | .01848 | .02754 | .67108 | .02781 | .03955 | .70312 |
| Unemployment, men 20 and over..... | .02011 | .02258 | .89059 | .02090 | .02314 | .90331 |
| Unemployment, women 20 and over..... | .01432 | .01911 | .74926 | .01920 | .02610 | .73570 |
| Agricultural employment, men 16 to 19..... | .03386 | .03488 | .97063 | .04114 | .04680 | .87899 |
| Agricultural employment, women 16 to 19..... | .06060 | .05502 | 1.10148 | .07172 | .07845 | .91420 |
| Agricultural employment, men 20 and over..... | .00773 | .01075 | .71892 | .01024 | .01311 | .78048 |
| Agricultural employment, women 20 and over..... | .02062 | .02683 | .76880 | .02682 | .03438 | .77997 |
| Nonagricultural employment, men 16 to 19..... | .01038 | .01053 | .98546 | .01084 | .01293 | .83788 |
| Nonagricultural employment, women 16 to 19..... | .00359 | .00670 | .53583 | .00396 | .00779 | .50752 |
| Nonagricultural employment, men 20 and over..... | .00090 | .00106 | .84501 | .00110 | .00151 | .72998 |
| Nonagricultural employment, women 20 and over..... | .00244 | .00274 | .88864 | .00244 | .00268 | .91201 |

Table 3.
Comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series,
1977-1982-Continued

1980

| | Root mean square proportional revision of monthly levels | | | Root mean square revision of month-to-month percentage change | | |
|--|--|-------------------|----------------------------------|---|-------------------|----------------------------------|
| | Concurrent | Projected factors | Ratio of concurrent to projected | Concurrent | Projected factors | Ratio of concurrent to projected |
| Aggregated, indirectly adjusted series | | | | | | |
| Unemployment, both sexes 16 to 19..... | 0.01802 | 0.01969 | 0.91515 | 0.02308 | 0.02980 | 0.77429 |
| Unemployment, both sexes 20 and over..... | .02114 | .02293 | .92199 | .01581 | .02183 | .72443 |
| Agricultural employment, both sexes 16 to 19..... | .02536 | .03216 | .78871 | .03087 | .04212 | .73293 |
| Agricultural employment, both sexes 20 and over..... | .00548 | .00752 | .72840 | .00636 | .01177 | .54045 |
| Nonagricultural employment, both sexes 16 to 19..... | .00621 | .00684 | .90842 | .00493 | .00940 | .52465 |
| Nonagricultural employment, both sexes 20 and over..... | .00199 | .00187 | 1.06370 | .00124 | .00165 | .74959 |
| Civilian labor force, both sexes 16 to 19..... | .00604 | .00690 | .87548 | .00678 | .01008 | .67280 |
| Civilian labor force, both sexes 20 and over..... | .00188 | .00218 | .86546 | .00135 | .00186 | .72178 |
| Unemployment, total..... | .01857 | .02041 | .91009 | .01467 | .02083 | .70395 |
| Agricultural employment, total civilian..... | .00584 | .00837 | .69830 | .00793 | .01367 | .58037 |
| Nonagricultural employment, total civilian..... | .00201 | .00157 | 1.27480 | .00110 | .00142 | .77106 |
| Employment, total civilian..... | .00204 | .00162 | 1.26056 | .00120 | .00162 | .74142 |
| Civilian labor force, total..... | .00184 | .00205 | .89678 | .00150 | .00220 | .68255 |
| Unemployment rate(unrounded), total civilian..... | .01806 | .01902 | .94929 | .01360 | .01917 | .70956 |
| Unemployment rate(unrounded), both sexes 16 to 19..... | .01504 | .01651 | .91081 | .01856 | .02535 | .73235 |
| Unemployment rate(unrounded), men 20 years and over..... | .03021 | .02747 | 1.09959 | .01881 | .02517 | .74716 |
| Unemployment rate(unrounded), women 20 years and over..... | .01507 | .02190 | .68825 | .01763 | .02726 | .64666 |
| Unemployment rate(one decimal), total civilian..... | .01844 | .01836 | 1.00436 | .01626 | .02003 | .81139 |
| Unemployment rate(one decimal), both sexes 16 to 19..... | .01511 | .01720 | .87831 | .01992 | .02654 | .75077 |
| Unemployment rate(one decimal), men 20 years and over..... | .03155 | .02735 | 1.15344 | .01965 | .02691 | .73009 |
| Unemployment rate(one decimal), women 20 years and over..... | .01320 | .02194 | .60190 | .01498 | .02632 | .56898 |
| Directly adjusted component series | | | | | | |
| Unemployment, men 16 to 19..... | .02322 | .02149 | 1.08042 | .02993 | .02928 | 1.02219 |
| Unemployment, women 16 to 19..... | .02136 | .02426 | .88017 | .02620 | .03648 | .71818 |
| Unemployment, men 20 and over..... | .02975 | .02767 | 1.07495 | .01892 | .02499 | .75721 |
| Unemployment, women 20 and over..... | .01382 | .02085 | .66254 | .01681 | .02631 | .63900 |
| Agricultural employment, men 16 to 19..... | .02857 | .03147 | .90775 | .03087 | .03976 | .77646 |
| Agricultural employment, women 16 to 19..... | .05402 | .08078 | .66871 | .07823 | .09437 | .82892 |
| Agricultural employment, men 20 and over..... | .00666 | .00833 | .79894 | .00862 | .01177 | .73293 |
| Agricultural employment, women 20 and over..... | .02531 | .02910 | .86960 | .02445 | .04300 | .56850 |
| Nonagricultural employment, men 16 to 19..... | .00962 | .01285 | .74849 | .00781 | .01374 | .56838 |
| Nonagricultural employment, women 16 to 19..... | .00608 | .00708 | .85803 | .00532 | .00839 | .63439 |
| Nonagricultural employment, men 20 and over..... | .00156 | .00117 | 1.33570 | .00133 | .00145 | .91888 |
| Nonagricultural employment, women 20 and over..... | .00294 | .00336 | .87401 | .00211 | .00319 | .66099 |

Table 3.
Comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series,
1977-1982-Continued

981

| | Root mean square proportional revision of monthly levels | | | Root mean square revision of month-to-month percentage change | | |
|--|--|-------------------|----------------------------------|---|-------------------|----------------------------------|
| | Concurrent | Projected factors | Ratio of concurrent to projected | Concurrent | Projected factors | Ratio of concurrent to projected |
| Aggregated, indirectly adjusted series | | | | | | |
| Unemployment, both sexes 16 to 19..... | 0.01478 | 0.02178 | 0.67831 | 0.02042 | 0.02817 | 0.72479 |
| Unemployment, both sexes 20 and over..... | .01523 | .01882 | .80919 | .01620 | .02002 | .80911 |
| Agricultural employment, both sexes 16 to 19..... | .02941 | .02973 | .98942 | .03445 | .03650 | .94403 |
| Agricultural employment, both sexes 20 and over..... | .00724 | .00676 | 1.07091 | .00840 | .00958 | .87677 |
| Nonagricultural employment, both sexes 16 to 19..... | .00633 | .00614 | 1.03027 | .00805 | .00769 | 1.04739 |
| Nonagricultural employment, both sexes 20 and over..... | .00259 | .00247 | 1.04779 | .00130 | .00163 | .79944 |
| Civilian labor force, both sexes 16 to 19..... | .00584 | .00699 | .83477 | .00596 | .00931 | .63980 |
| Civilian labor force, both sexes 20 and over..... | .00204 | .00215 | .94962 | .00133 | .00188 | .71040 |
| Unemployment, total..... | .01360 | .01816 | .74871 | .01538 | .01958 | .78559 |
| Agricultural employment, total civilian..... | .00892 | .00849 | 1.05132 | .00956 | .01103 | .86652 |
| Nonagricultural employment, total civilian..... | .00252 | .00235 | 1.07189 | .00123 | .00153 | .80438 |
| Employment, total civilian..... | .00256 | .00245 | 1.04461 | .00127 | .00171 | .74133 |
| Civilian labor force, total..... | .00204 | .00205 | .99402 | .00128 | .00201 | .63786 |
| Unemployment rate(unrounded), total civilian..... | .01393 | .01783 | .78090 | .01469 | .01836 | .80008 |
| Unemployment rate(unrounded), both sexes 16 to 19..... | .01254 | .01747 | .71792 | .01965 | .02301 | .85412 |
| Unemployment rate(unrounded), men 20 years and over..... | .02493 | .02687 | .92786 | .02433 | .02649 | .91853 |
| Unemployment rate(unrounded), women 20 years and over..... | .01278 | .01570 | .81408 | .01377 | .02019 | .68227 |
| Unemployment rate(one decimal), total civilian..... | .01455 | .01678 | .86709 | .01559 | .01847 | .84381 |
| Unemployment rate(one decimal), both sexes 16 to 19..... | .01279 | .01732 | .73824 | .02031 | .02307 | .88021 |
| Unemployment rate(one decimal), men 20 years and over..... | .02562 | .02778 | .92218 | .02378 | .02867 | .82916 |
| Unemployment rate(one decimal), women 20 years and over..... | .01241 | .01449 | .85621 | .01048 | .01625 | .64517 |
| Directly adjusted component series | | | | | | |
| Unemployment, men 16 to 19..... | .01699 | .02265 | .74994 | .02060 | .02900 | .71033 |
| Unemployment, women 16 to 19..... | .01964 | .02568 | .76490 | .02806 | .03441 | .81559 |
| Unemployment, men 20 and over..... | .02369 | .02582 | .91753 | .02379 | .02608 | .91199 |
| Unemployment, women 20 and over..... | .01137 | .01491 | .76304 | .01366 | .02002 | .68205 |
| Agricultural employment, men 16 to 19..... | .03288 | .03850 | .85425 | .03650 | .04011 | .91007 |
| Agricultural employment, women 16 to 19..... | .03857 | .06418 | .60104 | .05386 | .08304 | .64852 |
| Agricultural employment, men 20 and over..... | .00985 | .01143 | .86177 | .00862 | .01286 | .67005 |
| Agricultural employment, women 20 and over..... | .03202 | .02688 | 1.19104 | .03012 | .02254 | 1.33616 |
| Nonagricultural employment, men 16 to 19..... | .00917 | .01072 | .85515 | .01160 | .01331 | .87144 |
| Nonagricultural employment, women 16 to 19..... | .00898 | .01070 | .83898 | .00760 | .00850 | .89436 |
| Nonagricultural employment, men 20 and over..... | .00203 | .00203 | 1.00103 | .00120 | .00164 | .72728 |
| Nonagricultural employment, women 20 and over..... | .00357 | .00341 | 1.04810 | .00206 | .00241 | .85590 |

Table 3.
Comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series,
1977-1982-Continued

982

| | Root mean square proportional revision of monthly levels | | | Root mean square revision of month-to-month percentage change | | |
|--|--|-------------------|----------------------------------|---|-------------------|----------------------------------|
| | Concurrent | Projected factors | Ratio of concurrent to projected | Concurrent | Projected factors | Ratio of concurrent to projected |
| Aggregated, indirectly adjusted series | | | | | | |
| Unemployment, both sexes 16 to 19..... | 0.01296 | 0.01422 | 0.91080 | 0.01700 | 0.02052 | 0.82839 |
| Unemployment, both sexes 20 and over..... | .00486 | .00974 | .49915 | .00763 | .01309 | .58304 |
| Agricultural employment, both sexes 16 to 19..... | .03101 | .03531 | .87819 | .03859 | .04900 | .78752 |
| Agricultural employment, both sexes 20 and over..... | .00786 | .00943 | .83349 | .00635 | .00939 | .67646 |
| Nonagricultural employment, both sexes 16 to 19..... | .00578 | .00554 | 1.04384 | .00796 | .00755 | 1.05322 |
| Nonagricultural employment, both sexes 20 and over..... | .00147 | .00164 | .89592 | .00092 | .00112 | .82631 |
| Civilian labor force, both sexes 16 to 19..... | .00415 | .00405 | 1.02350 | .00658 | .00610 | 1.07880 |
| Civilian labor force, both sexes 20 and over..... | .00129 | .00162 | .79848 | .00106 | .00150 | .70804 |
| Unemployment, total..... | .00551 | .00988 | .55788 | .00856 | .01366 | .62679 |
| Agricultural employment, total civilian..... | .00989 | .01096 | .90274 | .00828 | .01152 | .71900 |
| Nonagricultural employment, total civilian..... | .00134 | .00153 | .87754 | .00115 | .00119 | .96032 |
| Employment, total civilian..... | .00139 | .00169 | .82113 | .00124 | .00134 | .92546 |
| Civilian labor force, total..... | .00121 | .00164 | .74022 | .00123 | .00171 | .71954 |
| Unemployment rate(unrounded), total civilian..... | .00547 | .00930 | .58862 | .00809 | .01252 | .64635 |
| Unemployment rate(unrounded), both sexes 16 to 19..... | .01269 | .01283 | .98888 | .01535 | .01847 | .83109 |
| Unemployment rate(unrounded), men 20 years and over..... | .00918 | .01491 | .61536 | .01295 | .01964 | .65958 |
| Unemployment rate(unrounded), women 20 years and over..... | .00772 | .00888 | .86982 | .00682 | .00903 | .75602 |
| Unemployment rate(one decimal), total civilian..... | .00722 | .00931 | .77592 | .01185 | .01453 | .81509 |
| Unemployment rate(one decimal), both sexes 16 to 19..... | .01207 | .01191 | 1.01341 | .01410 | .01689 | .83482 |
| Unemployment rate(one decimal), men 20 years and over..... | .00992 | .01658 | .59821 | .01602 | .02111 | .75881 |
| Unemployment rate(one decimal), women 20 years and over..... | .00922 | .00802 | 1.14943 | .00812 | .01005 | .80785 |
| Directly adjusted component series | | | | | | |
| Unemployment, men 16 to 19..... | .01461 | .01726 | .84658 | .01891 | .02212 | .85471 |
| Unemployment, women 16 to 19..... | .01453 | .01623 | .89536 | .01895 | .02630 | .72033 |
| Unemployment, men 20 and over..... | .00891 | .01486 | .59990 | .01283 | .01973 | .65023 |
| Unemployment, women 20 and over..... | .00750 | .00835 | .89737 | .00621 | .00850 | .73092 |
| Agricultural employment, men 16 to 19..... | .02990 | .03802 | .78634 | .03578 | .04830 | .74075 |
| Agricultural employment, women 16 to 19..... | .06951 | .05529 | 1.25709 | .10100 | .08952 | 1.12824 |
| Agricultural employment, men 20 and over..... | .01011 | .01256 | .80460 | .00679 | .01050 | .64693 |
| Agricultural employment, women 20 and over..... | .02719 | .03555 | .76472 | .02463 | .02818 | .87390 |
| Nonagricultural employment, men 16 to 19..... | .00903 | .00764 | 1.18207 | .01152 | .01039 | 1.10807 |
| Nonagricultural employment, women 16 to 19..... | .00565 | .00824 | .68586 | .00834 | .00946 | .88155 |
| Nonagricultural employment, men 20 and over..... | .00096 | .00076 | 1.25350 | .00050 | .00077 | .64265 |
| Nonagricultural employment, women 20 and over..... | .00252 | .00307 | .82333 | .00184 | .00206 | .89150 |

Table 3.
Comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series,
1977-1982-Continued
Six-year average, 1977-82, All months

| | Root mean square proportional revision of monthly levels | | | Root mean square revision of month-to-month percentage change | | |
|--|--|-------------------|----------------------------------|---|-------------------|----------------------------------|
| | Concurrent | Projected factors | Ratio of concurrent to projected | Concurrent | Projected factors | Ratio of concurrent to projected |
| Aggregated, indirectly adjusted series | | | | | | |
| Unemployment, both sexes 16 to 19..... | 0.01513 | 0.01886 | 0.80257 | 0.02094 | 0.02824 | 0.74149 |
| Unemployment, both sexes 20 and over..... | .01375 | .01581 | .86943 | .01412 | .01722 | .82018 |
| Agricultural employment, both sexes 16 to 19..... | .02754 | .03198 | .86115 | .03601 | .04353 | .82738 |
| Agricultural employment, both sexes 20 and over..... | .00831 | .00946 | .87782 | .00940 | .01229 | .76529 |
| Nonagricultural employment, both sexes 16 to 19..... | .00585 | .00620 | .94399 | .00677 | .00797 | .85013 |
| Nonagricultural employment, both sexes 20 and over..... | .00162 | .00161 | 1.00590 | .00104 | .00131 | .79814 |
| Civilian labor force, both sexes 16 to 19..... | .00497 | .00534 | .93035 | .00601 | .00732 | .82098 |
| Civilian labor force, both sexes 20 and over..... | .00139 | .00156 | .88640 | .00111 | .00149 | .74558 |
| Unemployment, total..... | .01268 | .01482 | .85591 | .01402 | .01763 | .79504 |
| Agricultural employment, total civilian..... | .00868 | .01018 | .85304 | .01004 | .01300 | .77272 |
| Nonagricultural employment, total civilian..... | .00156 | .00149 | 1.04323 | .00105 | .00130 | .80376 |
| Unemployment, total civilian..... | .00161 | .00159 | 1.01217 | .00116 | .00149 | .78188 |
| Civilian labor force, total..... | .00135 | .00150 | .89859 | .00122 | .00167 | .72891 |
| Unemployment rate(unrounded), total civilian..... | .01252 | .01430 | .87569 | .01336 | .01671 | .79952 |
| Unemployment rate(unrounded), both sexes 16 to 19..... | .01388 | .01747 | .79446 | .01941 | .02620 | .74077 |
| Unemployment rate(unrounded), men 20 years and over..... | .02003 | .02096 | .95604 | .01830 | .02183 | .83822 |
| Unemployment rate(unrounded), women 20 years and over..... | .01475 | .01786 | .82591 | .01814 | .02240 | .80985 |
| Unemployment rate(one decimal), total civilian..... | .01348 | .01403 | .96097 | .01587 | .01744 | .90994 |
| Unemployment rate(one decimal), both sexes 16 to 19..... | .01371 | .01736 | .78956 | .01937 | .02623 | .73845 |
| Unemployment rate(one decimal), men 20 years and over..... | .02090 | .02208 | .94662 | .01969 | .02485 | .79254 |
| Unemployment rate(one decimal), women 20 years and over..... | .01484 | .01827 | .81250 | .01802 | .02250 | .80077 |
| Directly adjusted component series | | | | | | |
| Unemployment, men 16 to 19..... | .01941 | .02291 | .84696 | .02351 | .03189 | .73717 |
| Unemployment, women 16 to 19..... | .01863 | .02301 | .80942 | .02548 | .03351 | .76052 |
| Unemployment, men 20 and over..... | .01951 | .02057 | .94855 | .01809 | .02150 | .84110 |
| Unemployment, women 20 and over..... | .01362 | .01682 | .80963 | .01735 | .02152 | .80633 |
| Agricultural employment, men 16 to 19..... | .03016 | .03486 | .86519 | .03655 | .04444 | .82246 |
| Agricultural employment, women 16 to 19..... | .05064 | .06565 | .77129 | .06918 | .08304 | .83312 |
| Agricultural employment, men 20 and over..... | .00894 | .01060 | .84381 | .00869 | .01145 | .75945 |
| Agricultural employment, women 20 and over..... | .02579 | .02963 | .87046 | .02935 | .03652 | .80350 |
| Nonagricultural employment, men 16 to 19..... | .00853 | .00926 | .92087 | .00976 | .01117 | .87316 |
| Nonagricultural employment, women 16 to 19..... | .00631 | .00814 | .77541 | .00669 | .00925 | .72361 |
| Nonagricultural employment, men 20 and over..... | .00132 | .00134 | .98620 | .00102 | .00136 | .75273 |
| Nonagricultural employment, women 20 and over..... | .00252 | .00271 | .92938 | .00194 | .00236 | .81952 |

Table 4.

Ratios of concurrent to projected for six comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series, by major aggregate series and year, 1977-1982

| | Average absolute revision of monthly levels | Average absolute revision of month-to-month changes | Root mean square revision of monthly levels | Root mean square revision of month-to-month changes | Root mean square proportional revision of monthly levels | Root mean square revision of month-to-month percentage change |
|--|---|---|---|---|--|---|
| Unemployment rate(one decimal), total civilian | | | | | | |
| All years, all months, 1977-82.. | 0.88000 | 0.86765 | 0.92796 | 0.89753 | 0.96097 | 0.90994 |
| All months, 1977..... | 1.00000 | 1.14285 | 1.22474 | 1.51185 | 1.21472 | 1.52938 |
| All months, 1978..... | .83333 | 1.00000 | .93541 | .88852 | .94071 | .89503 |
| All months, 1979..... | 1.00000 | .90000 | 1.00000 | .88641 | 1.00000 | .88838 |
| All months, 1980..... | 1.08333 | .66667 | .97468 | .78019 | 1.00436 | .81139 |
| All months, 1981..... | .69231 | .76923 | .84515 | .83406 | .86709 | .84381 |
| All months, 1982..... | .75000 | .91666 | .77459 | .82572 | .77592 | .81509 |
| Unemployment rate(unrounded), total civilian | | | | | | |
| All years, all months, 1977-82.. | 0.82778 | 0.78107 | 0.83825 | 0.78492 | 0.87569 | 0.79952 |
| All months, 1977..... | 1.20660 | .92837 | 1.21094 | 1.16975 | 1.24081 | 1.21256 |
| All months, 1978..... | .85547 | .90113 | .95646 | .82277 | .95606 | .81003 |
| All months, 1979..... | .88638 | .81008 | .82227 | .77035 | .82406 | .77505 |
| All months, 1980..... | .98327 | .78604 | .92225 | .69342 | .94929 | .70956 |
| All months, 1981..... | .70580 | .72673 | .76437 | .79405 | .78090 | .80008 |
| All months, 1982..... | .51216 | .60651 | .56587 | .62499 | .58862 | .64635 |
| Civilian labor force, total | | | | | | |
| All years, all months, 1977-82.. | 0.94087 | 0.72562 | 0.89810 | 0.72563 | 0.89859 | 0.72891 |
| All months, 1977..... | .58129 | .55993 | .58422 | .51281 | .58592 | .51331 |
| All months, 1978..... | 1.29402 | 1.14358 | 1.37796 | 1.28066 | 1.37814 | 1.28179 |
| All months, 1979..... | .92300 | .82987 | .91571 | .87389 | .91743 | .87458 |
| All months, 1980..... | .95275 | .70404 | .89662 | .68253 | .89678 | .68255 |
| All months, 1981..... | 1.18470 | .60585 | .99181 | .63121 | .99402 | .63786 |
| All months, 1982..... | .76004 | .71103 | .74113 | .72192 | .74022 | .71954 |

Table 4.
 Ratios of concurrent to projected for six comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series, by major aggregate series and year, 1977-1982-Continued

| | Average absolute revision of monthly levels | Average absolute revision of month-to-month changes | Root mean square revision of monthly levels | Root mean square revision of month-to-month changes | Root mean square proportional revision of monthly levels | Root mean square revision of month-to-month percentage change |
|--|---|---|---|---|--|---|
| Unemployment, total | | | | | | |
| All years, all months, 1977-82.. | 0.80050 | 0.76904 | 0.80825 | 0.76626 | 0.85591 | 0.79504 |
| All months, 1977..... | 1.22707 | .96834 | 1.20762 | 1.16375 | 1.23604 | 1.20915 |
| All months, 1978..... | .87325 | .91263 | .95038 | .83635 | .95057 | .82546 |
| All months, 1979..... | .88444 | .80634 | .83955 | .78874 | .84218 | .79343 |
| All months, 1980..... | .93790 | .79248 | .88089 | .68477 | .91009 | .70395 |
| All months, 1981..... | .65257 | .70488 | .73943 | .77789 | .74871 | .78559 |
| All months, 1982..... | .51846 | .57415 | .53321 | .60227 | .55788 | .62679 |
| Employment, total civilian | | | | | | |
| All years, all months, 1977-82.. | 0.95040 | 0.77012 | 1.01267 | 0.78143 | 1.01217 | 0.78188 |
| All months, 1977..... | .91641 | .70665 | .90124 | .80940 | .90438 | .81187 |
| All months, 1978..... | 1.04528 | .77726 | 1.24383 | .81303 | 1.24248 | .81242 |
| All months, 1979..... | .63878 | .70997 | .72706 | .71915 | .72605 | .71981 |
| All months, 1980..... | 1.24683 | .93433 | 1.25867 | .74345 | 1.26056 | .74142 |
| All months, 1981..... | 1.07934 | .69457 | 1.04479 | .74042 | 1.04461 | .74133 |
| All months, 1982..... | .74176 | .82434 | .82136 | .92958 | .82113 | .92546 |
| Nonagricultural employment, total civilian | | | | | | |
| All years, all months, 1977-82.. | 1.02134 | 0.79645 | 1.04410 | 0.80411 | 1.04323 | 0.80376 |
| All months, 1977..... | .92044 | .72169 | .88928 | .77947 | .88852 | .78237 |
| All months, 1978..... | 1.46214 | 1.16528 | 1.52099 | 1.08131 | 1.51613 | 1.07786 |
| All months, 1979..... | .64626 | .56866 | .74261 | .67414 | .74169 | .67407 |
| All months, 1980..... | 1.36071 | .91495 | 1.27285 | .77296 | 1.27480 | .77106 |
| All months, 1981..... | 1.11791 | .78560 | 1.07135 | .80257 | 1.07189 | .80438 |
| All months, 1982..... | .82296 | .85022 | .87753 | .96356 | .87754 | .96032 |

Table 4.
 Ratios of concurrent to projected for six comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series, by major aggregate series and month, 1977-1982

| | Average absolute revision of monthly levels | Average absolute revision of month-to-month changes | Root mean square revision of monthly levels | Root mean square revision of month-to-month changes | Root mean square proportional revision of monthly levels | Root mean square revision of month-to-month percentage change |
|--|---|---|---|---|--|---|
| Unemployment rate(one decimal), total civilian | | | | | | |
| All years, all months, 1977-82.. | 0.88000 | 0.86765 | 0.92796 | 0.89753 | 0.96097 | 0.90994 |
| January, all years..... | .75000 | .88889 | 1.11804 | .90749 | 1.23275 | 1.00878 |
| February, all years..... | 1.00000 | .66666 | 1.00000 | .81650 | 1.00000 | .74041 |
| March, all years..... | .66667 | 1.25000 | .81650 | 1.11803 | .79561 | 1.13485 |
| April, all years..... | .60000 | .62500 | .77460 | .64550 | .77495 | .63123 |
| May, all years..... | .77778 | 1.33333 | .82717 | 1.09545 | .88901 | 1.07611 |
| June, all years..... | .80000 | .91667 | .89442 | .94054 | .83322 | .95194 |
| July, all years..... | 2.99998 | .25000 | 1.73204 | .50000 | 1.54655 | .47667 |
| August, all years..... | 1.33333 | 1.50000 | 1.09545 | 1.22474 | 1.07969 | 1.11242 |
| September, all years..... | .75000 | .60000 | 1.11803 | .77460 | 1.15363 | .83288 |
| October, all years..... | .33333 | .57143 | .57735 | .67937 | .53731 | .67695 |
| November, all years..... | 2.99998 | 1.00000 | 1.73204 | 1.00000 | 1.94790 | .94829 |
| December, all years..... | .85714 | 1.16667 | .81650 | 1.04881 | .91306 | 1.15187 |
| Unemployment rate(unrounded), total civilian | | | | | | |
| All years, all months, 1977-82.. | 0.82778 | 0.78107 | 0.83825 | 0.78492 | 0.87569 | 0.79952 |
| January, all years..... | .75853 | .81902 | .93143 | .83756 | .97284 | .85176 |
| February, all years..... | .93491 | .94205 | .96503 | .89753 | .95978 | .88606 |
| March, all years..... | .84459 | 1.09573 | .92811 | 1.06375 | .91044 | 1.08004 |
| April, all years..... | .56814 | .63616 | .57161 | .63675 | .65842 | .66657 |
| May, all years..... | .60429 | .65055 | .66838 | .69590 | .74487 | .71795 |
| June, all years..... | .86645 | .73154 | .83921 | .74481 | .79227 | .78417 |
| July, all years..... | 1.26713 | .49801 | 1.02086 | .62024 | .97165 | .55984 |
| August, all years..... | 1.18601 | 1.27669 | 1.15009 | 1.14231 | 1.14634 | 1.22510 |
| September, all years..... | 1.10072 | .69884 | 1.28455 | .73441 | 1.32479 | .70845 |
| October, all years..... | .71520 | .77955 | .75467 | .80345 | .73879 | .80366 |
| November, all years..... | .64869 | .88386 | .79009 | .84348 | .87213 | .93951 |
| December, all years..... | .90131 | .97452 | .83630 | 1.04038 | .93981 | 1.12511 |

Table 4. Ratios of concurrent to projected for six comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series, by major aggregate series and month, 1977-1982-Continued

| | Average absolute revision of monthly levels | Average absolute revision of month-to-month changes | Root mean square revision of monthly levels | Root mean square revision of month-to-month changes | Root mean square proportional revision of monthly levels | Root mean square revision of month-to-month percentage change |
|----------------------------------|---|---|---|---|--|---|
| Civilian labor force, total | | | | | | |
| All years, all months, 1977-82.. | 0.94087 | 0.72562 | 0.89810 | 0.72563 | 0.89859 | 0.72891 |
| January, all years..... | .78933 | .83856 | 1.00484 | .85455 | .99741 | .84267 |
| February, all years..... | .90526 | .81676 | .91030 | .84895 | .91211 | .84913 |
| March, all years..... | .76405 | 1.03965 | .83020 | 1.09559 | .82570 | 1.09791 |
| April, all years..... | 1.27890 | .88675 | 1.27090 | .89924 | 1.28790 | .90568 |
| May, all years..... | .74180 | .55280 | .71789 | .56232 | .72743 | .56865 |
| June, all years..... | 1.34827 | .72750 | 1.24415 | .74124 | 1.21642 | .74991 |
| July, all years..... | .91767 | .64557 | .92592 | .68087 | .92411 | .68533 |
| August, all years..... | .94996 | .60175 | .94106 | .81406 | .94115 | .80457 |
| September, all years..... | .99470 | .57518 | .94522 | .58351 | .94186 | .57931 |
| October, all years..... | 1.12196 | .76618 | .93846 | .77941 | .92879 | .77857 |
| November, all years..... | .92167 | .68123 | .92862 | .70207 | .90808 | .68461 |
| December, all years..... | 1.03108 | .76058 | .92535 | .67549 | .90243 | .67514 |
| Unemployment, total | | | | | | |
| All years, all months, 1977-82.. | 0.80050 | 0.76904 | 0.80825 | 0.76626 | 0.85591 | 0.79504 |
| January, all years..... | .66624 | .82702 | .92120 | .84826 | .96012 | .85719 |
| February, all years..... | .92325 | .92336 | .95257 | .90558 | .95259 | .88783 |
| March, all years..... | .75635 | 1.10508 | .88818 | 1.05929 | .87050 | 1.09393 |
| April, all years..... | .53301 | .65520 | .54824 | .64500 | .63012 | .67429 |
| May, all years..... | .58644 | .58442 | .61799 | .64360 | .72097 | .69212 |
| June, all years..... | .81731 | .68946 | .79259 | .69648 | .74802 | .77033 |
| July, all years..... | 1.09076 | .47993 | .96944 | .63016 | .91385 | .58226 |
| August, all years..... | 1.19471 | 1.28598 | 1.16002 | 1.15603 | 1.15254 | 1.23983 |
| September, all years..... | 1.07726 | .73738 | 1.19663 | .73612 | 1.28757 | .72551 |
| October, all years..... | .75036 | .78240 | .75750 | .80148 | .74508 | .80577 |
| November, all years..... | .63998 | .81376 | .76392 | .76291 | .85697 | .89037 |
| December, all years..... | .96589 | 1.06589 | .85970 | 1.09615 | .97496 | 1.18841 |

Table 4. Ratios of concurrent to projected for six comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series, by major aggregate series and month, 1977-1982-Continued

| | Average absolute revision of monthly levels | Average absolute revision of month-to-month changes | Root mean square revision of monthly levels | Root mean square revision of month-to-month changes | Root mean square proportional revision of monthly levels | Root mean square revision of month-to-month percentage change |
|--|---|---|---|---|--|---|
| Employment, total civilian | | | | | | |
| All years, all months, 1977-82.. | 0.95040 | 0.77012 | 1.01267 | 0.78143 | 1.01217 | 0.78188 |
| January, all years..... | .75867 | .60487 | 1.11070 | .57995 | 1.10224 | .57231 |
| February, all years..... | .77117 | .78681 | 1.00766 | .63943 | 1.00593 | .65919 |
| March, all years..... | .99358 | 1.17640 | 1.08583 | .91748 | 1.07976 | .89771 |
| April, all years..... | 1.21581 | .92956 | 1.05766 | .89815 | 1.05731 | .90235 |
| May, all years..... | 1.25002 | .73816 | 1.22155 | .78603 | 1.24722 | .78260 |
| June, all years..... | 1.14972 | 1.08967 | 1.16943 | 1.10415 | 1.14648 | 1.09843 |
| July, all years..... | 1.00466 | .62554 | .99927 | .62610 | 1.00084 | .63010 |
| August, all years..... | 1.03288 | .78679 | 1.03899 | .55501 | 1.03885 | .55028 |
| September, all years..... | 1.13485 | .50940 | 1.15038 | .62805 | 1.14808 | .63302 |
| October, all years..... | .65337 | .79313 | .78266 | .79130 | .78911 | .79130 |
| November, all years..... | .91169 | 1.07396 | .99163 | .95459 | .99452 | .90920 |
| December, all years..... | .44594 | .49684 | .58781 | .54738 | .58507 | .54937 |
| Nonagricultural employment, total civilian | | | | | | |
| All years, all months, 1977-82.. | 1.02134 | 0.79645 | 1.04410 | 0.80411 | 1.04323 | 0.80376 |
| January, all years..... | .76063 | .79173 | 1.05215 | .69690 | 1.04710 | .69477 |
| February, all years..... | .82180 | .88911 | 1.04099 | .88867 | 1.03829 | .90145 |
| March, all years..... | 1.08612 | .93453 | 1.16145 | .90681 | 1.14866 | .90644 |
| April, all years..... | 1.21219 | .88705 | 1.06753 | .98329 | 1.04603 | .97236 |
| May, all years..... | 1.48203 | .69355 | 1.27510 | .76434 | 1.30519 | .76279 |
| June, all years..... | 1.19299 | 1.24891 | 1.23525 | 1.27443 | 1.21257 | 1.26135 |
| July, all years..... | 1.04513 | .63511 | .96879 | .63119 | .97198 | .63712 |
| August, all years..... | 1.06265 | .46150 | 1.06332 | .46193 | 1.06397 | .46911 |
| September, all years..... | 1.22631 | .73585 | 1.27405 | .74746 | 1.27116 | .76071 |
| October, all years..... | .73593 | .80005 | .91008 | .79471 | .90377 | .79496 |
| November, all years..... | 1.23842 | 1.11157 | 1.14284 | .94753 | 1.14756 | .90854 |
| December, all years..... | .55328 | .53656 | .61112 | .60804 | .61114 | .60528 |

TABLE 7

- 1 -

Ratios of concurrent to projected for six comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series, by major aggregate series and year, 1977-1982

| | Average absolute revision of monthly levels | Average absolute revision of month-to-month changes | Root mean square revision of monthly levels | Root mean square revision of month-to-month changes | Root mean square proportional revision of monthly levels | Root mean square revision of month-to-month percentage change |
|--|---|---|---|---|--|---|
| Unemployment rate(one decimal), total civilian | | | | | | |
| All years, all months, 1977-82.. | 0.88000 | 0.86765 | 0.92796 | 0.89753 | 0.96097 | 0.90994 |
| All months, 1977..... | 1.00000 | 1.14285 | 1.22474 | 1.51185 | 1.21472 | 1.52938 |
| All months, 1978..... | .83333 | 1.00000 | .93541 | .88852 | .94071 | .89503 |
| All months, 1979..... | 1.00000 | .90000 | 1.00000 | .88641 | 1.00000 | .88838 |
| All months, 1980..... | 1.08333 | .66667 | .97468 | .78019 | 1.00436 | .81139 |
| All months, 1981..... | .69231 | .76923 | .84515 | .83406 | .86709 | .84381 |
| All months, 1982..... | .75000 | .91666 | .77459 | .82572 | .77592 | .81509 |
| Unemployment rate(unrounded), total civilian | | | | | | |
| All years, all months, 1977-82.. | 0.82778 | 0.78107 | 0.83825 | 0.78492 | 0.87569 | 0.79952 |
| All months, 1977..... | 1.20660 | .92837 | 1.21094 | 1.16975 | 1.24081 | 1.21256 |
| All months, 1978..... | .85547 | .90113 | .95646 | .82277 | .95606 | .81003 |
| All months, 1979..... | .88638 | .81008 | .82227 | .77035 | .82406 | .77505 |
| All months, 1980..... | .98327 | .78604 | .92225 | .69342 | .94929 | .70956 |
| All months, 1981..... | .70580 | .72673 | .76437 | .79405 | .78090 | .80008 |
| All months, 1982..... | .51216 | .60651 | .56587 | .62499 | .58862 | .64635 |
| Civilian labor force, total | | | | | | |
| All years, all months, 1977-82.. | 0.94087 | 0.72562 | 0.89810 | 0.72563 | 0.89859 | 0.72891 |
| All months, 1977..... | .58129 | .55993 | .58422 | .51281 | .58592 | .51331 |
| All months, 1978..... | 1.29402 | 1.14358 | 1.37796 | 1.28066 | 1.37814 | 1.28179 |
| All months, 1979..... | .92300 | .82987 | .91571 | .87389 | .91743 | .87458 |
| All months, 1980..... | .95275 | .70404 | .89662 | .68253 | .89678 | .68255 |
| All months, 1981..... | 1.18470 | .60585 | .99181 | .63121 | .99402 | .63786 |
| All months, 1982..... | .76004 | .71103 | .74113 | .72192 | .74022 | .71954 |

See footnotes at end of table.

Ratios of concurrent to projected for six comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series, by major aggregate series and year, 1977-1982-Continued

| | Average absolute revision of monthly levels | Average absolute revision of month-to-month changes | Root mean square revision of monthly levels | Root mean square revision of month-to-month changes | Root mean square proportional revision of monthly levels | Root mean square revision of month-to-month percentage change |
|--|---|---|---|---|--|---|
| Unemployment, total | | | | | | |
| All years, all months, 1977-82.. | 0.80050 | 0.76904 | 0.80825 | 0.76626 | 0.85591 | 0.79504 |
| All months, 1977..... | 1.22707 | .96834 | 1.20762 | 1.16375 | 1.23604 | 1.20915 |
| All months, 1978..... | .87325 | .91263 | .95038 | .83635 | .95057 | .82546 |
| All months, 1979..... | .88444 | .80634 | .83955 | .78874 | .84218 | .79343 |
| All months, 1980..... | .93790 | .79248 | .88089 | .68477 | .91009 | .70395 |
| All months, 1981..... | .65257 | .70488 | .73943 | .77789 | .74871 | .78559 |
| All months, 1982..... | .51846 | .57415 | .53321 | .60227 | .55788 | .62679 |
| Employment, total civilian | | | | | | |
| All years, all months, 1977-82.. | 0.95040 | 0.77012 | 1.01267 | 0.78143 | 1.01217 | 0.78188 |
| All months, 1977..... | .91641 | .70665 | .90124 | .80940 | .90438 | .81187 |
| All months, 1978..... | 1.04528 | .77726 | 1.24383 | .81303 | 1.24248 | .81242 |
| All months, 1979..... | .63878 | .70997 | .72706 | .71915 | .72605 | .71981 |
| All months, 1980..... | 1.24683 | .93433 | 1.25867 | .74345 | 1.26056 | .74142 |
| All months, 1981..... | 1.07934 | .69457 | 1.04479 | .74042 | 1.04461 | .74133 |
| All months, 1982..... | .74176 | .82434 | .82136 | .92958 | .82113 | .92546 |
| Nonagricultural employment, total civilian | | | | | | |
| All years, all months, 1977-82.. | 1.02134 | 0.79645 | 1.04410 | 0.80411 | 1.04323 | 0.80376 |
| All months, 1977..... | .92044 | .72169 | .88928 | .77947 | .88852 | .78237 |
| All months, 1978..... | 1.46214 | 1.16528 | 1.52099 | 1.08131 | 1.51613 | 1.07786 |
| All months, 1979..... | .64626 | .56866 | .74261 | .67414 | .74169 | .67407 |
| All months, 1980..... | 1.36071 | .91495 | 1.27285 | .77296 | 1.27480 | .77106 |
| All months, 1981..... | 1.11791 | .78560 | 1.07135 | .80257 | 1.07189 | .80438 |
| All months, 1982..... | .82296 | .85022 | .87753 | .96356 | .87754 | .96032 |

Ratio of concurrent to projected for six comparison statistics for evaluating concurrent versus 6-month-projected-factor
 seasonal adjustment of major labor force series, by major aggregate series and month, 1977-1982

| | Average absolute revision of monthly levels | Average absolute revision of month-to-month changes | Root mean square revision of monthly levels | Root mean square revision of month-to-month changes | Root mean square proportional revision of monthly levels | Root mean square revision of month-to-month percentage change |
|---|--|---|--|---|--|--|
| Unemployment rate(one decimal), total civilian | | | | | | |
| All years, all months, 1977-82.. | 0.88000 | 0.86765 | 0.92796 | 0.89753 | 0.96097 | 0.90994 |
| January, all years..... | .75000 | .88889 | 1.11804 | .90749 | 1.23275 | 1.00878 |
| February, all years..... | 1.00000 | .66666 | 1.00000 | .81650 | 1.00000 | .74041 |
| March, all years..... | .66667 | 1.25000 | .81650 | 1.11803 | .79561 | 1.13485 |
| April, all years..... | .60000 | .62500 | .77460 | .64550 | .77495 | .63123 |
| May, all years..... | .77778 | 1.33333 | .82717 | 1.09545 | .88901 | 1.07611 |
| June, all years..... | .80000 | .91667 | .89442 | .94054 | .83322 | .95194 |
| July, all years..... | 2.99998 | .25000 | 1.73204 | .50000 | 1.54655 | .47667 |
| August, all years..... | 1.33333 | 1.50000 | 1.09545 | 1.22474 | 1.07969 | 1.11242 |
| September, all years..... | .75000 | .60000 | 1.11803 | .77460 | 1.15363 | .83288 |
| October, all years..... | .33333 | .57143 | .57735 | .67937 | .53731 | .67695 |
| November, all years..... | 2.99998 | 1.00000 | 1.73204 | 1.00000 | 1.94790 | .94829 |
| December, all years..... | .85714 | 1.16667 | .81650 | 1.04881 | .91306 | 1.15187 |
| Unemployment rate(unrounded), total civilian | | | | | | |
| All years, all months, 1977-82.. | 0.82778 | 0.78107 | 0.83825 | 0.78492 | 0.87569 | 0.79952 |
| January, all years..... | .75853 | .81902 | .93143 | .83756 | .97284 | .85176 |
| February, all years..... | .93491 | .94205 | .96503 | .89753 | .95978 | .88606 |
| March, all years..... | .84459 | 1.09573 | .92811 | 1.06375 | .91044 | 1.08004 |
| April, all years..... | .56814 | .63616 | .57161 | .63675 | .65842 | .66657 |
| May, all years..... | .60429 | .65055 | .66838 | .69590 | .74487 | .71795 |
| June, all years..... | .86645 | .73154 | .83921 | .74481 | .79227 | .78417 |
| July, all years..... | 1.26713 | .49801 | 1.02086 | .62024 | .97165 | .55984 |
| August, all years..... | 1.18601 | 1.27669 | 1.15009 | 1.14231 | 1.14634 | 1.22510 |
| September, all years..... | 1.10072 | .69884 | 1.28455 | .73441 | 1.32479 | .70845 |
| October, all years..... | .71520 | .77955 | .75467 | .80345 | .73879 | .80366 |
| November, all years..... | .64869 | .88386 | .79009 | .84348 | .87213 | .93951 |
| December, all years..... | .90131 | .97452 | .83630 | 1.04038 | .93981 | 1.12511 |

See footnotes at end of table.

Ratios of concurrent to projected for six comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series, by major aggregate series and month, 1977-1982-Continued

| | Average absolute revision of monthly levels | Average absolute revision of month-to-month changes | Root mean square revision of monthly levels | Root mean square revision of month-to-month changes | Root mean square proportional revision of monthly levels | Root mean square revision of month-to-month percentage change |
|----------------------------------|---|---|---|---|--|---|
| Civilian labor force, total | | | | | | |
| All years, all months, 1977-82.. | 0.94087 | 0.72562 | 0.89810 | 0.72563 | 0.89859 | 0.72891 |
| January, all years..... | .78933 | .83856 | 1.00484 | .85455 | .99741 | .84267 |
| February, all years..... | .90526 | .81676 | .91030 | .84895 | .91211 | .84913 |
| March, all years..... | .76405 | 1.03965 | .83020 | 1.09559 | .82570 | 1.09791 |
| April, all years..... | 1.27890 | .88675 | 1.27090 | .89924 | 1.28790 | .90568 |
| May, all years..... | .74180 | .55280 | .71789 | .56232 | .72743 | .56865 |
| June, all years..... | 1.34827 | .72750 | 1.24415 | .74124 | 1.21642 | .74991 |
| July, all years..... | .91767 | .64557 | .92592 | .68087 | .92411 | .68533 |
| August, all years..... | .94996 | .60175 | .94106 | .81406 | .94115 | .80457 |
| September, all years..... | .99470 | .57518 | .94522 | .58351 | .94186 | .57931 |
| October, all years..... | 1.12196 | .76618 | .93846 | .77941 | .92879 | .77857 |
| November, all years..... | .92167 | .68123 | .92862 | .70207 | .90808 | .68461 |
| December, all years..... | 1.03108 | .76058 | .92535 | .67549 | .90243 | .67514 |
| Unemployment, total | | | | | | |
| All years, all months, 1977-82.. | 0.80050 | 0.76904 | 0.80825 | 0.76626 | 0.85591 | 0.79504 |
| January, all years..... | .66624 | .82702 | .92120 | .84826 | .96012 | .85719 |
| February, all years..... | .92325 | .92336 | .95257 | .90558 | .95259 | .88783 |
| March, all years..... | .75635 | 1.10508 | .88818 | 1.05929 | .87050 | 1.09393 |
| April, all years..... | .53301 | .65520 | .54824 | .64500 | .63012 | .67429 |
| May, all years..... | .58644 | .58442 | .61799 | .64360 | .72097 | .69212 |
| June, all years..... | .81731 | .68946 | .79259 | .69648 | .74802 | .77033 |
| July, all years..... | 1.09076 | .47993 | .96944 | .63016 | .91385 | .58226 |
| August, all years..... | 1.19471 | 1.28598 | 1.16002 | 1.15603 | 1.15254 | 1.23983 |
| September, all years..... | 1.07726 | .73738 | 1.19663 | .73612 | 1.28757 | .72551 |
| October, all years..... | .75036 | .78240 | .75750 | .80148 | .74508 | .80577 |
| November, all years..... | .63998 | .81376 | .76392 | .76291 | .85697 | .89037 |
| December, all years..... | .96589 | 1.06589 | .85970 | 1.09615 | .97496 | 1.18841 |

See footnotes at end of table.

Ratios of concurrent to projected for six comparison statistics for evaluating concurrent versus 6-month-projected-factor seasonal adjustment of major labor force series, by major aggregate series and month, 1977-1982-Continued

| | Average absolute revision of monthly levels | Average absolute revision of month-to-month changes | Root mean square revision of monthly levels | Root mean square revision of month-to-month changes | Root mean square proportional revision of monthly levels | Root mean square revision of month-to-month percentage change |
|--|---|---|---|---|--|---|
| Employment, total civilian | | | | | | |
| All years, all months, 1977-82.. | 0.95040 | 0.77012 | 1.01267 | 0.78143 | 1.01217 | 0.78188 |
| January, all years..... | .75867 | .60487 | 1.11070 | .57995 | 1.10224 | .57231 |
| February, all years..... | .77117 | .78681 | 1.00766 | .63943 | 1.00593 | .65919 |
| March, all years..... | .99358 | 1.17640 | 1.08583 | .91748 | 1.07976 | .89771 |
| April, all years..... | 1.21581 | .92956 | 1.05766 | .89815 | 1.05731 | .90235 |
| May, all years..... | 1.25002 | .73816 | 1.22155 | .78603 | 1.24722 | .78260 |
| June, all years..... | 1.14972 | 1.08967 | 1.16943 | 1.10415 | 1.14648 | 1.09843 |
| July, all years..... | 1.00466 | .62554 | .99927 | .62610 | 1.00084 | .63010 |
| August, all years..... | 1.03288 | .78679 | 1.03899 | .55501 | 1.03885 | .55028 |
| September, all years..... | 1.13485 | .50940 | 1.15038 | .62805 | 1.14808 | .63302 |
| October, all years..... | .65337 | .79313 | .78266 | .79130 | .78911 | .79130 |
| November, all years..... | .91169 | 1.07396 | .99163 | .95459 | .99452 | .90920 |
| December, all years..... | .44594 | .49684 | .58781 | .54738 | .58507 | .54937 |
| Nonagricultural employment, total civilian | | | | | | |
| All years, all months, 1977-82.. | 1.02134 | 0.79645 | 1.04410 | 0.80411 | 1.04323 | 0.80376 |
| January, all years..... | .76063 | .79173 | 1.05215 | .69690 | 1.04710 | .69477 |
| February, all years..... | .82180 | .88911 | 1.04099 | .88867 | 1.03829 | .90145 |
| March, all years..... | 1.08612 | .93453 | 1.16145 | .90681 | 1.14866 | .90644 |
| April, all years..... | 1.21219 | .88705 | 1.06753 | .98329 | 1.04603 | .97236 |
| May, all years..... | 1.48203 | .69355 | 1.27510 | .76434 | 1.30519 | .76279 |
| June, all years..... | 1.19299 | 1.24891 | 1.23525 | 1.27443 | 1.21257 | 1.26135 |
| July, all years..... | 1.04513 | .63511 | .96879 | .63119 | .97198 | .63712 |
| August, all years..... | 1.06265 | .46150 | 1.06332 | .46193 | 1.06397 | .46911 |
| September, all years..... | 1.22631 | .73585 | 1.27405 | .74746 | 1.27116 | .76071 |
| October, all years..... | .73593 | .80005 | .91008 | .79471 | .90377 | .79496 |
| November, all years..... | 1.23842 | 1.11157 | 1.14284 | .94753 | 1.14756 | .90854 |
| December, all years..... | .55328 | .53656 | .61112 | .60804 | .61114 | .60528 |