

Executive Summary of
CPS BRIDGE TEAM TECHNICAL REPORT 1

What Would the Unemployment Rate Have Been Had the Redesigned Current Population
Survey Been in Place from September 1992 to December 1993 ? :
A Measurement Error Analysis

February 1994

The official monthly labor force estimates from January 1994 onwards will be based on data from a comprehensively redesigned Current Population Survey (CPS). The redesign incorporates changes in the basic questionnaire and collection methodology. In addition, these estimates will be constructed using 1990-Census-based population controls rather than 1980-Census-based population controls.

To better understand the effect of the CPS redesign on published estimates, a Parallel Survey, intended to provide annual average labor force estimates, was conducted from July 1992 to December 1993 using a separate monthly sample of households approximately one-fifth the size of the regular CPS sample. Because of the small sample size, monthly estimates from the Parallel Survey are highly variable.

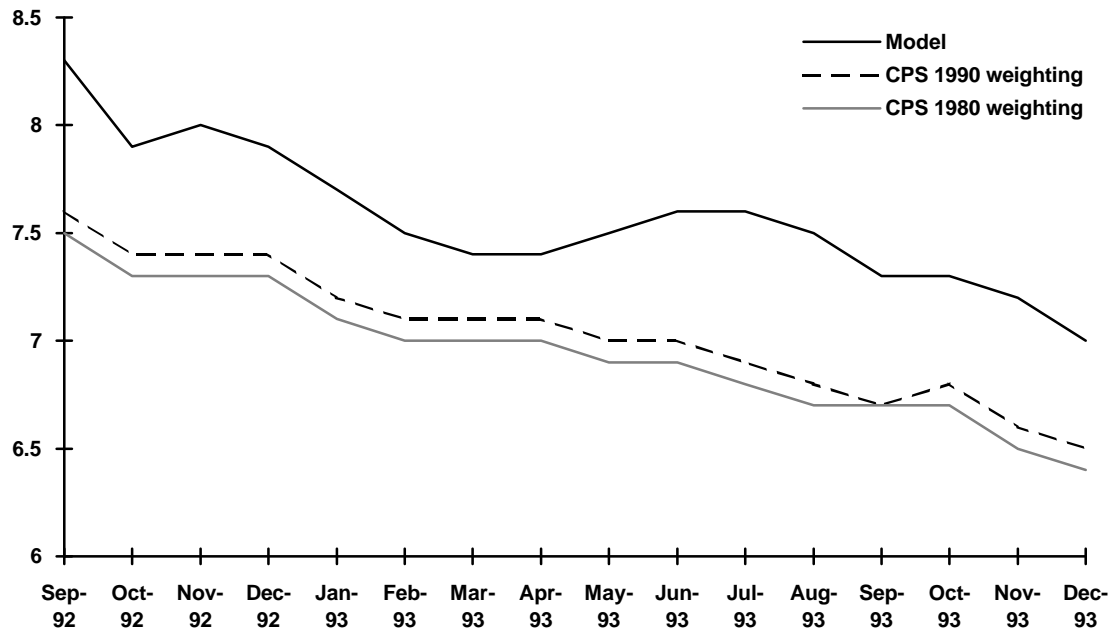
To help analysts interpret the 1994 monthly CPS estimates, the CPS Bridge team has modeled the Parallel Survey estimates from September 1992 through December 1993 for the purposes of producing more accurate estimates of what the CPS might have looked like during that period had the redesigned CPS been in place. The modeling has used only data from the Parallel Survey and the CPS and yields monthly estimates with approximately one-half the sampling variability of the monthly Parallel Survey estimates, but still about twice the variance of the regular CPS estimates. While the model estimates are less variable than the monthly estimates from the Parallel Survey, it should be noted that, because not all design differences could be taken into account, the model estimates may not provide a completely accurate picture of what the estimates from the redesigned CPS would have looked like during that period. The model estimates were seasonally adjusted with factors computed under the old CPS, so not all seasonality may be accounted for.

Several seasonally adjusted national unemployment rate series are shown below. The CPS *1980 weighted* estimates are the official seasonally adjusted rates as originally published. The CPS *1990 weighted* estimates show the effect on the original CPS estimates of switching to the 1990 Census adjusted population controls. The change to *1990 weighting* results in a 0.1 increase in the unemployment rate over the *1980 weighted* estimates. The model estimates are our estimates of what the unemployment rate would have been had the redesigned survey been in place. They are uniformly higher than both of the CPS estimates, averaging 0.6 higher than the *1980 weighted* estimates over the period. All three series show a decline in the unemployment rate of more than a percentage point between September 1992 and December 1993.

Seasonally Adjusted Unemployment Rates

Date	CPS 1980 weighting	CPS 1990 weighting	Model
1992: Sep.	7.5	7.6	8.3
Oct.	7.3	7.4	7.9
Nov.	7.3	7.4	8.0
Dec.	7.3	7.4	7.9
1993: Jan.	7.1	7.2	7.7
Feb.	7.0	7.1	7.5
Mar.	7.0	7.1	7.4
Apr.	7.0	7.1	7.4
May.	6.9	7.0	7.5
Jun.	6.9	7.0	7.6
Jul.	6.8	6.9	7.6
Aug.	6.7	6.8	7.5
Sep.	6.7	6.7	7.3
Oct.	6.7	6.8	7.3
Nov.	6.5	6.6	7.2
Dec.	6.4	6.5	7.0

Seasonally Adjusted Unemployment Rates



Contents

Twelve labor force series are modeled and used to construct unemployment rates for the period September 1992 to December 1993 which are comparable to the rates that will be produced from the redesigned CPS starting in January 1994. This report, which is the product of joint work between the Bureau of Labor Statistics and the Bureau of the Census, is laid out as follows. The *Background* section provides an introduction to the parallel survey used to evaluate the effect on annual average labor force estimates using the new questionnaire and collection procedures, as well as a discussion of the problems inherent in trying to develop an historical time series comparable to the estimates from the redesigned CPS. The *Summary of Statistical Methodology* section provides an overview of the methods used to produce the comparable series. The *Presentation of Selected Labor Force Series* section provides a summary of the *comparable data* to the official CPS data published during the same period. Finally, two *Appendices* provide additional details about the statistical modeling used.

Acknowledgments

The CPS Bridge Team consists of Chester E. Bowie, Shail J. Butani, Lawrence S. Cahoon, Cathryn S. Dippo, Robert E. Fay, Donna L. Kostanich, Elizabeth A. Martin, Stephen M. Miller, Anne E. Polivka, and N. Clyde Tucker. Other participants in the team's work included Katharine Abraham, Jack Bregger, Mick Couper, Thomas Plewes, and Jennifer Rothgeb. Outside consultants included Wayne Fuller, and Robert Groves. This report was prepared by Stephen Miller, who also was responsible for the modeling. Robert Fay computed variances for the Parallel Survey, and also provided CPS estimates for September 1992. Additional assistance was provided by Ken Robertson, Athar Malik, Ed Robison, and Janice Lent.