

The Disparate Labor Market Impacts of Monetary Policy

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Abstract

This paper estimates Vector Autoregressive Regressions for March 1973 to September 2002 to identify monetary policy's disparate impacts on the labor market outcomes of teenagers, minorities, out-of-school youth, and the less-skilled.

I find that the employment-population ratio of minorities is more sensitive to disinflationary monetary policy than whites, falling due to an increase in unemployment and not a decline in labor force participation.

The employment-population ratios of out-of-school teenagers and 16 to 24 year old out-of-school male high school dropouts bear the brunt of disinflationary monetary policies through higher unemployment.

Disinflationary monetary policy increases the length of unemployment at all segments of the distribution. As a share of total unemployment, the increase is greatest among those with fewer than 5 weeks of unemployment.

Key Words:

Monetary Policy
Labor Market Outcomes
Teenagers, Minorities, and Out-of-School Youth

I. Introduction

Recent studies find that the 1990s economic expansion from March 1991 to March 2001 substantially improved the absolute and relative economic positions of less-skilled and less-educated Americans. The national unemployment rate started at 6.8 percent in 1991 and fell to 4.3 percent in 2001. For 34 months, from August 1998 to May 2001 the jobless rate was at or below 4.5 percent. Employment-population ratios of most demographic groups, especially youth and minorities reached historic highs, eroding some of the persistent and historical barriers to work. The economy's ability to reduce barriers to work can partly be attributed to the willingness of policy makers' decisions not to slow growth for fear of inflation.

However, even with estimates that the NAIRU had fallen, sentiments among policy makers and economists were that the low unemployment rates were unsustainable without the emergence of inflationary pressures. As insurance against the prospects of inflation, the Federal Reserve Board of Governors began a series of increases in the Federal Funds Rate on June 30, 1999.¹ At that date the rate was increased by 25 basis points to 5.0 percent. From that point to May 2000, the Board increased the Federal Funds Rate five times, raising the rate to 6.5 percent. For the remainder of 2000, the Board of Governors kept the Federal Funds Rate at 6.5 percent. Even though the Board began to see a moderation in economic activity, they still felt that "the risks continue to be weighted mainly toward conditions that may generate heightened inflation pressures in the foreseeable future." It was not until the Board of Governors' December 19th, 2000 meeting at which the economy had slowed enough to where they shifted their bias "toward conditions that may generate economic weakness in the foreseeable future."

In fact, by November 2001, the NBER Business Cycle Dating Committee felt that they had accumulated enough evidence to conclude that March 2001, three months after the Federal

Reserve shifted its bias was the beginning of a recession. To date, the Dating Committee has not declared the recession's end, but on July 7, 2002, they wrote that the recession might have ended at or around March 2002.

This paper examines the impact that monetary policy has on the labor market outcomes of teenagers, minorities and less-skilled workers. It builds on a large literature that identifies different relationships between aggregate demand, macroeconomic policies and the economic outcomes (e.g., poverty) of various socio-economic groups, and that attempts to explain the constant 2-to-1 ratio of the black-white unemployment rate.² Romer and Romer (1998) estimate the impact that a decrease in the Federal Funds Rate has on poverty and inequality. They find that a cyclical boom created by expansionary monetary policy is associated with lower poverty in the short run. They also find that low inflation and steady growth in aggregate demand is associated with lower poverty in the long run. Romer and Romer conclude that since the effects of monetary policy are “inherently temporary”, a strategy with the goals of low inflation and stable aggregate demand has the greatest chance to permanently lower poverty.

More recently, Thorbecke (2001) estimates differential impacts of monetary policy across racial and ethnic groups. Focusing solely on the unemployment rate, he finds that from March 1973 to December 1996, impulse-response functions from Vector Autoregressive Regressions (VARs) reveal that positive innovations in the Federal Funds Rate increased black and Hispanic unemployment rates by 50 to 90 percent more than whites. Using the disinflationary periods identified in Romer and Romer (1989, 1994) and their methodology, Thorbecke also finds that anti-inflationary policy shocks increase unemployment among nonwhites more than twice as much as they do among whites. Thorbecke concludes that the “Federal Reserve should take account of these effects when implementing disinflationary policy.”

This paper first re-estimates Thorbecke's model, but includes monthly data from January 1997 to September 2002. Doing this includes the Federal Reserve's most recent preemptive efforts to lessen growing inflationary pressures by starting a series of increases in the Federal Funds Rate in June, 1999. Instead of focusing solely on the unemployment rate, I then explore whether disinflationary policy lowers the employment-population ratio by acting primarily through raising the unemployment rate or reducing the labor force participation rate. I shift the focus to the employment-population ratio because it is well known that the employment-population ratio can be expressed as the product of the labor force participation rate and one minus the unemployment rate.³ Along with influencing job search decisions, monetary policy influences employment by affecting labor force attachment.

Third, I disaggregate the unemployment rate, employment-population ratio, and labor force participation rate by age to explore whether teenagers bear a larger share of disinflationary monetary policy. Limiting the sample to out-of-school youth (ages 16 to 24), I then examine whether increases in the Federal Funds Rate places a greater burden on teenagers, minorities and less educated men and women. The paper concludes by examining the impact that monetary policy has on the distribution of weeks unemployed.

The findings can be summarized as follows:

- Minority unemployment remains more sensitive to monetary policy than white unemployment.
- Disinflationary monetary policy typically lowers the employment-population ratios of minorities by increasing their unemployment rates and not decreasing their labor force participation rates.

- Out-of-school teenagers and out-of-school male high school dropouts ages 16 to 24 bear the brunt of disinflationary monetary policies through higher unemployment rates.
- An increase in the Federal Funds Rate raises the number of unemployed at all segments of the distribution. However, as a share of the total number of unemployed, the increase is greatest among those that have been unemployed fewer than 5 weeks.

The organization of this paper is as follows. Section II describes the methodology and Section III describes the data. Section IV describes the results. Section V concludes.

II. Methods

VAR Approach

To identify a component of monetary policy that is exogenous to the state of the economy, I estimate a VAR. A VAR is a regression of an $n \times 1$ vector of endogenous variables, y_t , on lagged values of itself:

$$1) \quad y_t = A_1 y_{t-1} + \dots + A_p y_{t-p} + \varepsilon_t, \quad E(\varepsilon_t \varepsilon_t) = \Omega.$$

As long as stability conditions are met, Equation (1) can be inverted and written as an infinite vector moving average process:

$$2) \quad y_t = \varepsilon_t + C_1 \varepsilon_{t-1} + C_2 \varepsilon_{t-2} + C_3 \varepsilon_{t-3} + \dots$$

Interpreting this equation is not easy because the individual error terms can be contemporaneously correlated. To obtain orthogonalized innovations, the Cholesky factorization can be used to create a lower triangular matrix P such that Ω is the variance-covariance matrix of ε_t . Doing this allows Equation (2) to be rewritten as:

$$\begin{aligned}
3) \quad y_t &= PP^{-1}\varepsilon_t + C_1PP^{-1}\varepsilon_{t-1} + C_2PP^{-1}\varepsilon_{t-2} + \dots \\
&= \Gamma_0v_t + \Gamma_1v_{t-1} + \Gamma_2v_{t-2} + \dots
\end{aligned}$$

where $\Gamma_i = C_iP$, $v_t = P^{-1}\varepsilon_t$, and $E[v_tv_t'] = I$. Equation (3) expresses the endogenous variables (y_t) as functions of the orthogonalized residuals (v_{t-l}). Suppose that one component of v_t represents shocks to monetary policy, impulse-response functions are useful because they can describe the impact that unanticipated policy changes have on the path that variables such as the unemployment rate take.

To be consistent with Thorbecke (2001), I measure monetary policy using the Federal Funds Rate. Bernanke and Blinder (1992), Christiano et al. (1996) and Friedman and Kuttner (1996) all conclude that the Federal Funds Rate is a good measure of monetary policy. A well developed relationship between aggregate demand and poverty, and the labor market outcomes of less-skilled, less-educated and minorities exists.⁴ With respect to poverty, Romer and Romer (1989) identify a link between the Federal Funds Rate and poverty. Expansionary monetary policy is associated with lower poverty. Thorbecke establishes differential links between the Federal Funds Rate and the unemployment rates of whites, blacks and Hispanics.

The variables in the VAR are ordered as follows: industrial production growth, the percent change in the Consumer Price Index for Urban Consumers, the log of the Commodity Research Board spot price index, a labor market outcome (e.g. unemployment rate or the number of people unemployed for less than 5 weeks), the Federal Funds Rate, the logarithm of nonborrowed reserves, and the logarithm of total reserves.

To estimate the disparate or differential impacts of monetary policy I estimate a VAR for each demographic group (e.g., 16 and over African Americans) and construct an impulse response function for each group. The functions simulate the effect of positive orthogonalized innovations in the Federal Funds Rate on the three major labor market outcomes: the

employment- population ratio, the unemployment rate and labor force participation rate.⁵ Because of these relations, we will determine whether a decrease in a demographic group's employment-population ratio is due to an increase in the unemployment rate (increased length of job search) or to a reduction in the group's labor force participation rate (departure from the labor force).

Isolating the Impact of Disinflationary Policy on Labor Market Outcomes

Figure 7 plots the Federal Funds Rate January 1989 to present. Over this period, the Federal Reserve has on two occasions slowed the economy with increases in the Federal Funds Rate. The first was a series of increases in January 1994 and the second was a series of increases that started in June 1999. I add these two disinflationary episodes to the list that Romer and Romer (1989, 1994) identified: 1947:10, 1955:09, 1968:12, 1974:04, 1978:08, 1979:10, and 1988:12. To identify the effect that these disinflationary episodes have on a particular demographic group, I estimate the model in Thorbecke (2001):

$$4) \quad y_t = A(L)u_{t-1} + B(L)\pi_{t-1} + C(L)D_{t-1},$$

where y_t denotes a labor market outcome for a given demographic group, $A(L)$ and $B(L)$ are unrestricted polynomials in the lag operator L , π_t denotes the percent change in the consumer price index for urban consumers, $C(L)$ is estimated as a fourth-order polynomial distributed lag, and D_t represents dummy variables for the Romer dates plus the two that I added. The $A(L)$ and $B(L)$ polynomials are specified to contain seven lags.

III. Data

Published monthly unemployment rates, labor force participation rates and employment-population ratios for ages 16 and over come from the Bureau of Labor Statistics (BLS). The series span from January 1948 to September 2002; however, data disaggregated by race and

ethnicity is first published in March 1973. Employment-population ratios, unemployment rates and labor force participation rates for out-of-school 16 to 24 year olds come from BLS's October Supplement of the Current Population Survey. Out-of-school data disaggregated by race becomes available in October 1970. Published data on non-enrolled Hispanics starts in October 1985. Out-of-school data disaggregated by educational attainment starts in 1970. The tradeoff for this additional demographic detail is that the data is only available for October of each year, considerably reducing the frequency of the time series. This weakness will be reflected in my ability to make strong conclusions about monetary policy's effect on out-of-school youth.

The series used to describe the structure of unemployment also comes from the Bureau of Labor Statistics. Data for all individuals 16 and over is available from January 1959 to September 2002. Series are available for the total number of people unemployed, the number unemployed for less than 5 weeks, the number unemployed from 5 to 14 weeks, the number unemployed 15 weeks or more, and the number unemployed 27 weeks or more. From these series, I create the share of unemployment at each segment of the distribution. Due to data availability, I am not able to disaggregate the data by race, ethnicity or out-of-school status.

Monthly time series data for the Federal Funds Rate, industrial production, total reserves, and nonborrowed reserves come from the Federal Reserve Board of Governors. Monthly values for the CPI-U come from the Bureau of Labor Statistics and the monthly spot price index comes from the Commodity Research Board. In the VAR specifications for the 16 and over population, growth in industrial production, and changes in consumer prices are measured as month to month changes. In the VARs that focus on out-of-school youth, I use the October values of the macro data. Growth in industrial production and the percent change in the CPI are calculated as October-to-October changes.

IV. Results

The Period from March 1973 to December 1996

Thorbecke finds that a one-standard deviation shock which equals a 54 basis point increase in the Federal Funds Rate has its largest impact on unemployment 12 to 24 months after the tightening. An unexpected increase in the Federal Funds Rate raises the white unemployment rate by 0.09 percentage points, the Hispanic jobless rate by 0.17 percentage points and the black unemployment rate by 0.14 percentage points. To identify whether the racial and ethnic differences are statistically significant, Thorbecke uses as the labor market outcome in the VARs the difference in unemployment rates between blacks and whites and Hispanics and whites. He finds that the Hispanic-white difference peaks at 0.06 percentage points after 14 months and the black-white difference peaks at 0.05 percentage points after 20 months. Figures 1 and 2 present my attempt to replicate his estimates. I find virtually identical results. During months 20 to 22 the black-white difference peaks at 0.06 percentage points with a standard error of 0.03. The Hispanic-white difference peaks at 0.05 percentage points with a standard error of 0.03 at the 13th month.

I now demonstrate the interrelation between changes in the employment-population ratio, unemployment rate and labor force participation rate. The first step is to assess monetary policy's impact on the employment-population ratio. The second step is to describe whether movements or changes in the employment-population ratio are driven by changes in unemployment and/or labor force participation. The evidence from the VARs indicates that monetary policy acts predominately through the unemployment rate.

Figure 3 shows that by the 22nd month, the white employment-population ratio falls by 0.10 percentage points. The Hispanic employment-population ratio also falls by 0.10 percentage

points, but reaches this maximum in the 10th month. The response of the black employment-population ratio also reaches a peak in the 12th month. Figure 4 shows that the black-white differential peaks in the 10th month and slowly falls over the next 12 months. Because the Hispanic and white employment-population ratios follow similar paths, the difference in ratios is not significantly different from zero. Figures 5 and 6 plot the impulse response functions for the labor force participation rates of each group and their differences. These figures indicate that unexpected monetary shocks have little if any impact on the labor force participation rates of whites, blacks and Hispanics. Thorbecke was correct to focus on the unemployment rate. However, along with replicating his work, this section is important because it places monetary policy's impacts into the broader labor market framework.

Extending the Period from 1996 to 2002

The period from January 1996 to September 2002 contains a distinct period of contractionary monetary policy that started June 1999. The tightening is significant because at that time, the unemployment rate was close to a historical low. The increases signaled policy makers' formal response to growing concerns that inflationary pressures were building and a preemptive strike was needed. Figure 7 plots the path of the Federal Funds Rate since 1996. It shows the period of contractionary policy, but also the aggressive easing that has occurred since the beginning of 2001.

To incorporate this variation in the VARs from the previous section, I extend the series from December 1996 through September 2002. Doing this increases the number of observations from 286 to 355. Table 1 compares summary statistics for the March 1973 to December 1996 and March 1973 to September 2002 series. Extending the data through September 2002 raises the averages of the employment-population ratio and the labor force participation rate. Adding

more recent data lowers the average unemployment rate. The average of the Federal Funds Rate falls from 7.9 to 7.3 percent. The standard deviation remains the same. However, I do find that a one-standard deviation increase in the residual Federal Funds Rate is not the same for each demographic group as shown in Thorbecke. Although not substantially different, some variation exists. The standard deviation in the Hispanic unemployment rate VAR is 0.551, compared to 0.582 in the VAR for the black labor force participation rate.

The impulse response functions in Figure 8 indicate that a one-standard deviation (58 basis points) increase in the Federal Funds Rate reaches its maximal effect of reducing the black employment-population ratio by 0.15 percentage points in the 27th month. The comparable figure for Hispanics is 0.08 percentage points with its maximum effect in the 23rd and 24th months and 0.07 percentage points for whites in the 25th month. Figure 9 indicates that blacks bear the brunt of monetary policy tightening. From months 9 to 30, the black employment-population ratio is 0.06 points below the white employment-population ratio. The standard errors range from 0.03 for months 9 to 17 to 0.04 for months 18 to 30. A Hispanic-white differential does not exist, again because whites and Hispanics have similar impulse response functions. When compared to the 1973 to 1996 period, the estimates and standard errors suggest that the sensitivity of black, whites and Hispanics to monetary policy has not changed over time.

To identify the labor market outcome that drives black's greater sensitivity to monetary policy, Figures 10 and 12 graph the impulse response functions for the unemployment and labor force participation rates. The maximal effect of increasing the black unemployment rate is 0.19 percentage points, with the effect not felt until the 27th month. The white and Hispanic responses reach their maximums effects in month 20 for whites and 23 for Hispanics. Blacks are the only demographic group whose labor force participation responds to a positive increase in the Federal

Funds Rate.

Figures 11 and 13 plot the effect of positive innovations in the Federal Funds Rate on the black-white and Hispanic-white differences in unemployment and labor force participation rates. A one-standard deviation increase in the Federal Funds Rate generates a maximum difference of 0.07 percentage points between the black and white unemployment rates and a 0.05 percentage point difference between the Hispanic and white unemployment rates. The standard errors are 0.04 and 0.03, respectively. The impulse response functions for the labor force participation rates are small and have little precision. Taken together, this evidence indicates that the decline in the employment-population ratio, particularly for minorities is solely due to an increase in unemployment.

As a first step to identifying whether less-skilled and less-educated Americans, especially minorities are more sensitive to monetary policy, I estimate VARs for all 16 to 19 year olds by race. BLS does not publish teenage statistics for Hispanics. The advantage to estimating models for teenagers is that I can observe using monthly data whether youth labor market outcomes, especially those of minority youth respond differently than white youth and the population in general. The major drawback to using the published monthly data for 16 to 19 year olds is that it mixes labor market and schooling decisions. In fact, estimates from the impulse response functions suggest that disinflationary monetary policy affects school enrollment.

An additional drawback to using the 16 to 19 year old series is that I can not identify the effects of monetary policy on out-of-school youth, such as young high school dropouts. They have the least education and skills and have signaled at least in the short term, little intention to re-enroll. Thus, they are at the greatest risk of being adversely impacted by contractionary monetary policy. If the assumption is accepted that the differences between the skills of in-and

out-of-school youth are not too large, then the impulse response functions of all teenagers will provide a fairly close estimate of monetary policy's impact on out-of-school youth.

With these caveats in mind, Table 1 presents summary statistics for the series. Teenagers have higher unemployment rates, lower employment-population ratios and lower labor force participation rates than the general population. The standard deviation of the residual Federal Funds Rate equals 0.58, similar to the standard deviation for the general population.

Figure 14 presents the effect of positive innovations in the Federal Funds Rate on the teenage employment-population ratio by race. Black and white teenagers are clearly impacted by disinflationary monetary policy. By the 26th month, a one-standard deviation (58 basis points) increase in the rate is associated with a 0.18 percentage point decrease in the teen black employment-population ratio, compared to a 0.15 percentage point decrease for white teenagers. The magnitudes of these teenage impacts exceed the estimated impacts for the general population (Figure 8).

Why are the teenage white and black impacts similar? The answer lies with the need to estimate separate VARs for unemployment and labor force participation. The unemployment rates of black and white teenagers increase, with maximal effects of 0.26 and 0.16 percentage points in the 26th month. Disinflationary monetary policy appears to increase the difficulty that teenagers face in finding employment, especially African American teenagers. Both labor force participation rates fall by approximately 0.08 percentage points in months 11 to 15; however, the impact of positive innovations in the Federal Funds Rate on the black labor force participation rate dissipates over time, while the white labor force participation rate continues to fall, reaching a maximum of 0.12 percentage points in the 37th month. If the departure from the labor force leads to school enrollment, then disinflationary monetary policy appears to influence the

schooling decisions of both black and white teenage populations, with the impacts larger for white teenagers. Another explanation for the results is that enrolled teenagers reduce their part-time employment.

Out-of-school Youth

I now shift to describing the impact that positive innovations in the Federal Funds Rate have on the labor market outcomes of out-of-school youth. My focus on out-of-school youth is motivated by the extensive research that has found that this demographic group's labor market outcomes are the most sensitive to macroeconomic changes. The evidence in this section extends previous research by identifying one of the policy mechanisms that create a link between aggregate demand and the labor market outcomes of out-of-school youth. The findings in this section should be interpreted with caution. The October-to-October variation considerably reduces the sample sizes, thus raising the standard errors and weakening the precision of the estimates.

Table 2 reports the summary statistics for the out-of-school youth time series. Older youth, ages 20 to 24 have higher employment-population ratios, higher labor force participation rates and lower unemployment rates than 16 to 19 year olds. Black 16 to 24 year olds have higher unemployment rates and lower employment-population ratios and lower labor force participation rates than white 16 to 24 year olds. Unemployment rates fall as educational attainment increases. As educational attainment increases, gender differences in the unemployment rate narrow. It is worthy to note that the average Federal Funds Rate in this series is 1.3 percentage points lower than the average rate in the longer monthly time series. Further, since the out-of-school series is based on October data in each year, the growth in industrial production and the percent change in the CPI-U are larger than the monthly values. The standard

deviation of the Federal Funds Rate spans from 1.5 to 1.6 percentage points, considerably higher than the standard deviation for the monthly time series.

The impulse response functions for out-of-school 16 to 19 and 20 to 24 year olds are shown in Panel A of Table 3. As a reminder, these estimates are generated from VARs with 2 lags because observations are only available each October from 1972 to 2001. The impulse response functions are estimated for eight periods. Although not measured with precision, the magnitude of the estimates suggests a decline in the employment-population ratio of 20 to 24 year olds. The employment-population ratio exhibits no systematic relationship for 16 to 19 year olds. Panels B and C illustrate that if any adverse impact exists, it is on the unemployment rate. A one-standard deviation increase (1.55 percentage points) in the Federal Funds Rate increases the unemployment rate of out-of-school teenagers (16 to 19 years old) by 1.19 percentage points in year 3, 0.75 and 0.90 percentage points in years 4 and 5. These estimates are statistically significant.

To make these estimates comparable to the monthly time series for the 16 and over population, I multiply the estimates in Panels B and C by 0.36 (the ratio of the standard deviations of the residual Federal Funds Rate: $0.58/1.60$). Doing this yields a maximal effect of a 58 basis point increase of 0.43 percentage points. The monetary shock increases the unemployment rate of 20 to 24 year olds by 0.46 percentage points in year 2. The comparable figure to a 58 basis point change in the 16 and over population is a 0.17 percentage point increase in the unemployment rate. The comparable figures for black and white teenagers are increases of 0.26 and 0.16 percentage points.

The impulse response functions for out-of-school youth by race yield no conclusive evidence. I attribute this to two data limitations: the frequency of the series and the inability to

disaggregate each race's series by educational attainment. Focusing on sign alone, the impulse response functions indicate that a one-standard deviation increase (1.5 percentage points) in the Federal Funds Rate raises the unemployment rate of blacks, but has no impact on out-of-school white youth.

The impulse response functions by education indicate that male high school dropouts bear the brunt of an unexpected monetary shock. With limited precision, Panel A of Table 4 indicates that a one-standard deviation (1.60 percentage points) increase in the funds rate lowers male high school dropout and graduate employment-population ratios by just over 0.50 percentage points, compared to having virtually no impact on the employment-population ratio of male college graduates. This figure translates into a 0.18 percentage point decline if the Federal Funds Rate increases by 58 basis points. Panels B and C indicate that the reductions in the employment-population ratios can be attributed to increases in their unemployment rates. The estimates for high school dropouts have the greatest precision. A one-standard deviation increase (1.55 percentage points) in the funds rate generates a maximum increase of 0.68 percentage points in the unemployment rate of high school dropouts. When made comparable to the monthly series, the estimate translates into a 0.25 percentage point increase in the high school dropout unemployment rate.

The impulse response functions for women by educational attainment yield an unexpected result. A one-standard deviation increase (1.5 percentage points) in the funds rate only impacts the labor market outcomes of less-educated women; however, the direction of the effects are opposite of what I expected. An increase in the Federal Funds Rate leads to an increase in the employment-population ratio by 0.78 percentage points in year 2, 0.88 percentage points in year 3, and a peak of 1.44 percentage points in year 4. Panel C reveals that these

increases are due to increases in their labor force participation. Efforts to detrend and first-difference the series, which would remove the effects of welfare reform and the general upward trend in the labor force participation of women that has occurred since the 1970s had no impact on these results.

In summary, even though the estimates in this section are derived from significantly smaller samples and annual data. They mildly suggest that out-of-school youth are more sensitive to monetary tightening than the general population and the population of all 16 to 19 years.

Future work needs to better understand the impulse response functions of less-educated women. For example, are there other structural changes in women's participation beyond the creation of time limits on welfare during the mid to late 1990s that are generating my results, or are the results simply a data problem, not having monthly or quarterly data.

Isolating Disinflationary Episodes

Tables 6, 7 and 8 present estimates of the sensitivity of the employment-population ratio, unemployment rate, labor force participation rate to a disinflationary episode. Columns (1) to (4) report estimates for whites and blacks for the March 1973 to December 1996 period. Columns (5) to (8) report estimates for whites and blacks for the March 1973 to September 2002 period. For both black and white employment-population ratios, the impact of a disinflationary episode may have weakened slightly since 1996; however, the black employment-population ratio still falls by over four times the drop in the white employment-population ratio. From March 1973 to December 1996, a disinflationary episode lowers the black employment-population ratio on average by 0.14 percentage points, compared to 0.05 percentage points for whites. Adding the

monthly data since December 1996 causes the average effect to fall to 0.13 and 0.03 percentage points.

The increase in the unemployment rate during a disinflationary episode plays a key role in reducing the employment-population ratio. The increase in the unemployment rate is larger for blacks than whites. From March 1973 to December 1996, the white unemployment rate increases by 0.07 percentage points, compared to a 0.34 percentage point increase in the black unemployment rate. Including the two most recent disinflationary episodes yield average increases in the unemployment rate of 0.04 and 0.25 percentage points for whites and blacks, respectively. Finally, labor force participation also responds to a disinflationary episode with blacks having a response that is twice the size of whites. For the March 1973 to December 1996 period, the white labor force participation rate exhibits an average decline of 0.04 percentage points, compared to a 0.09 percentage point decline for blacks. When the more recent disinflationary episodes are included in the data, the sensitivity of each group's labor force participation rate rises, but black's greater sensitivity does not increase. Similar to the VAR models, increases in the unemployment rate and not reductions in labor force participation are the primary channel through which disinflationary policy operates to reduce the employment-population ratio.

Monetary Policy's Impact on the Structure of Unemployment

The previous sections establish that an increase in the unemployment rate is the primary mechanism through which monetary policy reduces the employment-population ratio. This section explores how monetary policy alters the distribution of unemployment. Since monetary policy's effects are short-term in nature, do they only increase the number of short-term unemployed? The first answer to this question comes from VAR models where the labor market

outcome is the number of people in a particular month that are unemployed for a period of time: less than 5 weeks, 5 to 14 weeks, 15 or more weeks, and 27 or more weeks. VARs with the percent or share of individuals unemployed in these categories are also estimated. The second answer to the question of what portion of the distribution is most affected comes from estimates of the impact that a disinflationary episode has on the structure of unemployment.

The impulse response functions constructed from the VARs indicate that the number of unemployed rises at all segments of the distribution. However, in percentage terms, the VARs reveal that the largest increases in unemployment occur among those reporting less than 5 weeks of unemployment. The share of the unemployed searching for 5 or more weeks increases.

The specification that estimates the impact of a disinflationary episode generates what appear to be results that conflict with the VAR results. The average number of unemployed at all segments of the distribution increases after an episode; however, as a share of total unemployment, the average portion of reported unemployment that is less than 5 weeks falls, while the average portion of unemployment lasting for more than 5 weeks rises. I reconcile the differences between the VAR and disinflationary models by the fact that the impulse response functions trace over time the impact of an unexpected increase in the Federal Funds Rate, while the specification that utilizes the variation in identified disinflationary episodes measures the average impact of an episode.

Before presenting the regression results, Table 9 provides summary statistics for the series used in the estimation of the models. For comparability to my earlier results, the models are estimated with series that span from March 1973 to September 2002.⁶ Over this period the average monthly number of unemployed is 7,463,000 people. The average number of people unemployed for less than 5 weeks is 3,032,000 million, 5 to 14 weeks is 2,286,000, 15 or more

weeks is 2,145,000, and 27 or more weeks is 1,124,000 people. Clearly, the largest share of unemployment is concentrated among individuals with less than 5 weeks. Individuals with fewer than 5 weeks comprise 41.4 percent of the unemployed. The 5 to 14 group comprises 30.7 percent. The 15 or more and 27 weeks or more groups comprise 27.9 and 14.5 percent of the unemployed. The table also shows that the standard deviation of the residual Federal Funds Rate corresponds to 0.48 to 0.49 percentage points, implying that a one-standard deviation increase in the Federal Funds Rate corresponds to a 48 to 49 basis point increase. Thus, I need to multiply the coefficient estimates by 1.21, the ratio of 0.58 and 0.48 to construct the impact of a 58 basis point increase.

The impulse response functions for the VARs are shown in Table 10. These figures model the impact of a 48 basis point increases in the Federal Funds Rate. Converting them into the impact associated with a 58 basis points yields the following. The increase reaches its peak impact in months 24 to 32. At 5 weeks of unemployment or less, the number of unemployed increases by 33,517. At 5 to 14 weeks of unemployment, unemployment grows by 39,204 people. At 15 or more and 27 weeks or more (long-term unemployment), unemployment grows by 81,796 and 48,884.⁷ The VARs that use the percent of the total number of people unemployed reach their maximums much quicker. A one-standard deviation increase in the Federal Funds Rate has a maximum impact of 0.41 at 5 weeks or less, with the maximum reached by the 6th month. This estimate means that a 58 basis point increase in the Federal Funds Rate increases the share of unemployed that is less than 5 weeks by 0.41 percentage points. From 5 to 14 weeks of unemployment, the same increase in the Federal Funds Rate lowers this share by 0.237 percentage points. It reaches this value by the second month. For 15 or more weeks of unemployment, a one-standard deviation increase lowers the share of unemployment at this

segment by 0.46 percentage points. The maximum is achieved in the sixth month. Finally, the increase in the Federal Funds Rate lowers the share of unemployed more than 27 months by 0.29 percentage points.⁸ Monetary policy, whose effects are short-term, increases the number of unemployed at all segments of the distribution. Even the number of long-term unemployed rises. However, in percentage terms, monetary policy has its greatest effects at the 5 weeks or less segment of the distribution of unemployment. Monetary policy increases the number of new entrants into unemployment and slows the rate at which people exit unemployment.

Panel A of Table 11 presents the results from specifications that use the Romer and Romer disinflations plus the two identified in this paper. Similar to the VAR results, the table shows that on average the number of unemployed increases at all segments of the distribution, with the largest increases occurring at the 5 to 14 and 15 or more segments. A disinflationary episode is associated with an average increase of 15,060 people with less than 5 weeks of unemployment, 38,532 between 5 to 14 weeks, 35,149 with 15 or more weeks, and 25,462 with 27 or more weeks of unemployment. All estimates are significant at the 95 percent level, except the estimate for the less than 5 week segment of the distribution.

The specifications that use the share of the unemployed as the labor market outcome indicate that after a disinflationary episode, the share of unemployment that is less than five weeks falls on average by 0.57 percentage points, increases by 0.27, 0.37 and 0.25 percentage points at 5 to 14 weeks of unemployment, 15 or more weeks of unemployment, and 27 or more weeks of unemployment. All of the estimates except at 5 to 14 weeks are statistically significant at the 95 percent level. So, these estimates suggest that even though monetary policy's impacts are of a short nature on the broader economy, they do have real impacts on unemployment at all segments of the distribution. Since they are for the general population, if data were available for

teenagers, minorities and out-of-school youth, their estimates would be larger than those just presented for the general population.

V. Discussion

This paper presents estimates of the impact that monetary policy has on minorities, youth, and out-of-school less-educated Americans. I find that young out-of-school Americans, especially those without a high school diploma are the most sensitive demographic group to increases in the Federal Funds Rate. For young men that have not completed high school a one-standard deviation or 58 basis point increase in the Federal Funds Rate leads to a 0.18 percentage point decline in their employment-population ratio. The reduction is due to a 0.25 percentage point increase in the unemployment rate. The employment-population ratio of teenagers is more sensitive to contractionary monetary policy than the general population. The employment-population ratio of minorities continues to be more sensitive to disinflationary monetary policy than whites. For both demographic groups, increases in unemployment are the primary mechanism that reduces the employment-population ratio.

The paper concludes by describing how the structure of the unemployment distribution changes in response to monetary policy. I first show that a one-standard deviation increase in the Federal Funds Rate raises the number of unemployed at all segments of the distribution, with the largest effects in percentage terms occurring at the less than 5 weeks segment. I then show the average effects associated with a disinflationary episode. They too, reveal that the number of unemployed increases at all segments of the distribution; however, in percentage terms the average effects suggest these increases are largest at 5 to 14 and 15 or more weeks of unemployment.

Even though monetary policy's effects are short-term in nature, they have real and lasting effects on the structure of unemployment. These effects are felt throughout the distribution, both short and long-term. Short-term unemployment rises for a variety of reasons. Individuals with the least skills lose their jobs. Geographic areas, industries and occupations most sensitive to changes in the macroeconomy fire employees. Some individuals face increased workplace discrimination. Medium and long-term unemployment increases because individuals that were unemployed at the beginning of the contractionary policy, especially demographic groups and geographic areas with persistently high unemployment rates now have greater difficulty finding a job.

What are the implications of disinflationary monetary policy on social policy? They are not independent of one another. Disinflationary policy means a higher national unemployment rate, especially for youth, minorities, less-skilled and less-educated Americans. As a result, policy makers must respond by investing in the education and skills of individuals in these demographic groups and find fiscally responsible vehicles to stimulate aggregate demand, particularly for areas with persistently high unemployment. For former welfare recipients this means allowing the pursuit of education as a way to satisfy TANF's work requirements. For out-of-school youth it means fully funding the Department of Labor's Youth Opportunity Movement. More generally, it means further refining and strengthening TANF and the Workforce Investment Act (WIA) during their upcoming Congressional reauthorizations.

Finally, Thorbecke described disinflationary monetary policy as the Federal Reserve's insurance policy against inflation. He concluded that there may be situations in which the Federal Reserve should "consider foregoing inflation insurance or even stimulating the economy." A policy stance of this nature, will improve the short and long-term labor market outcomes of many

minorities, less-educated and less-skilled whites. I agree with this recommendation; however, I also recognize that there will be situations in which the Federal Reserve must file a claim against inflation.

When that occurs, policy responses that expand access to automatic stabilizers such as the Unemployment Insurance Program and other social safety nets must come from state governments, Congress and the President.⁹ These automatic stabilizers act as a short-term insurance policy against joblessness and poverty.

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Table 1: Summary Statistics for 16 and Over Models

Variable	March 1973 to December 1996		March 1973 to September 2002	
	Mean	Std. Dev.	Mean	Std. Dev.
White Unemployment Rate	5.9	1.2	5.6	1.3
White Employment-population Ratio	61.0	2.2	61.7	2.5
White Labor Force Participation Rate	64.8	2.0	65.3	2.0
Black Unemployment Rate	13.4	2.5	12.5	2.9
Black Employment-population Ratio	53.8	2.5	54.9	3.2
Black Labor Force Participation Rate	62.1	1.7	62.8	2.1
Hispanic Unemployment Rate	10.0	1.8	9.4	2.1
Hispanic Employment-population Ratio	58.1	2.6	59.1	3.2
Hispanic Labor Force Participation Rate	64.5	2.4	65.2	2.6
Industrial Production Growth (Monthly)	0.21	0.83	0.21	0.78
% Change in CPI-U (Monthly)	0.46	0.35	0.41	0.35
Logarithm of Commodity Spot Price	5.5	0.1	5.5	0.1
Federal Funds Rate	7.9	3.4	7.3	3.4
Logarithm of Non-borrowed Reserves	10.3	0.5	10.3	0.4
Logarithm of Total Reserves	10.3	0.4	10.4	0.4
Teenagers				
White Unemployment Rate	15.5	2.1	15.0	2.3
White Employment-population Ratio	48.7	2.1	48.5	2.2
White Labor Force Participation Rate	57.6	1.7	57.0	2.1
Black Unemployment Rate	39.0	2.4	38.9	2.3
Black Employment-population Ratio	24.2	2.8	24.9	3.0
Black Labor Force Participation Rate	38.0	5.0	36.1	6.0
Sample Size	286		355	
Standard Deviation of Residual Federal Funds Rate by Labor Market Outcome				
March 1973 to September 2002				
Variable	Unemployment Rate	Employment-population Ratio	Labor Force Participation Rate	
White	0.562	0.566	0.574	
Black	0.575	0.580	0.582	
Hispanic	0.551	0.571	0.577	
White Teenagers	0.578			
Black teenagers	0.578			
Notes: See text for detailed description.				

Table 2: Summary Statistics for Out-of-school Youth Models

Variable	16 to 19 Year Olds		20 to 24 Year Olds	
	Mean	Std. Dev.	Mean	Std. Dev.
Employment-population Ratio	61.137	2.109	70.747	5.366
Unemployment Rate	16.019	5.393	10.018	2.071
Labor Force Participation Rate	71.623	3.135	79.586	4.872
By Race	Black		White	
Employment-population Ratio	54.245	4.330	73.913	3.027
Unemployment Rate	24.788	5.292	10.053	1.840
Labor Force Participation Rate	72.106	2.125	82.178	2.951
High School Dropouts by Gender	Men		Women	
Employment-population Ratio	67.648	3.993	34.033	4.168
Unemployment Rate	19.159	4.086	25.906	4.543
Labor Force Participation Rate	83.694	2.572	45.922	4.720
High School Graduates by Gender	Men		Women	
Employment-population Ratio	83.036	3.170	65.416	3.573
Unemployment Rate	10.725	2.380	11.834	1.797
Labor Force Participation Rate	93.119	1.915	74.200	3.929
College Graduates by Gender	Men		Women	
Employment-population Ratio	90.670	2.252	87.827	3.878
Unemployment Rate	6.375	1.877	5.466	1.889
Labor Force Participation Rate	96.866	1.320	92.900	3.221
Macroeconomic Variables	Mean	Std. Dev.		
Federal Funds Rate	6.043	3.188		
Change in CPI-U*	0.041	0.030		
Industrial Production Percent Change*	0.036	0.051		
Logarithm of Non-borrowed reserves	10.040	0.578		
Logarithm of commodity spot price	5.163	0.438		
Logarithm of total reserves	10.077	0.564		
Federal Funds Residuals by Model	Std. Dev.			
16-19 year olds	1.55			
20-24 year olds	1.64			
White	1.54			
Black	1.54			
Male High School Dropouts	1.55			
Women High School Dropouts	1.49			
Male High School Graduates	1.56			
Women High School Graduates	1.55			
Male College Graduates	1.49			
Women College Graduates	1.54			

Notes: See text for detailed description.

*Figures are for October-to-October changes.

**Table 3: Impulse Response Functions Out-of-school Youth by age and race
(Standard Errors in Parenthesis)**

Panel A: Employment-population Ratio				
Year	16 to 19	20 to 24	White	Black
1	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
2	0.6269 (0.3570)	-0.4209 (0.2673)	-0.1856 (0.2325)	0.0131 (0.2981)
3	-0.0607 (0.3543)	-0.3897 (0.3465)	0.1742 (0.2491)	-0.2898 (0.3321)
4	0.1353 (0.2947)	-0.2242 (0.3893)	0.1085 (0.2317)	0.1204 (0.4416)
5	-0.1606 (0.2777)	0.0550 (0.4023)	0.2253 (0.2597)	-0.0903 (0.4665)
6	-0.0300 (0.2677)	0.1129 (0.3876)	0.0206 (0.2554)	0.0374 (0.4625)
7	0.0207 (0.2457)	0.0313 (0.3764)	-0.1318 (0.2245)	0.1816 (0.4079)
8	0.0078 (0.2105)	-0.0350 (0.3581)	-0.2729 (0.2462)	0.2176 (0.3786)

Panel B: Unemployment Rate				
Year	16 to 19	20 to 24	White	Black
1	0.0000 (0.000)	0.0000 (0.000)	0.0000 (0.000)	0.0000 (0.000)
2	0.4504 (0.3668)	0.4604 (0.2332)	0.1076 (0.1842)	0.4504 (0.4524)
3	1.1861 (0.3469)	0.1535 (0.2528)	-0.0333 (0.2295)	0.6650 (0.5225)
4	0.7490 (0.3738)	-0.0513 (0.2656)	0.0625 (0.2642)	0.0192 (0.5862)
5	0.9012 (0.4197)	-0.1605 (0.3245)	-0.0933 (0.2986)	0.3701 (0.6702)
6	0.3236 (0.4850)	-0.2314 (0.3424)	-0.0976 (0.2747)	-0.1841 (0.6776)
7	0.2123 (0.5274)	-0.3266 (0.3387)	-0.0514 (0.2295)	-0.4346 (0.5900)
8	-0.0575 (0.5607)	-0.3270 (0.3326)	0.0452 (0.2303)	-0.4535 (0.5476)

Notes: See end of table.

**Table 3 cont.: Impulse Response Functions Out-of-school Youth by age and race
(Standard Errors in Parenthesis)**

Panel C: Labor Force Participation Rate				
Year	16 to 19	20 to 24	White	Black
1	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
2	0.0959 (0.3326)	0.0606 (0.1340)	-0.0007 (0.1568)	0.6515 (0.3062)
3	0.3951 (0.3191)	-0.1135 (0.1459)	0.1199 (0.1244)	0.1869 (0.4299)
4	0.0970 (0.3377)	-0.0786 (0.1850)	0.0238 (0.1527)	0.2975 (0.4308)
5	0.6134 (0.3341)	-0.1209 (0.2106)	0.1654 (0.1611)	-0.1140 (0.4037)
6	0.2937 (0.3185)	-0.0772 (0.2288)	0.0723 (0.1558)	0.0177 (0.3579)
7	0.1910 (0.3318)	-0.1071 (0.2426)	0.0889 (0.1561)	-0.1506 (0.2960)
8	0.0159 (0.3332)	-0.1028 (0.2472)	0.0212 (0.1487)	-0.0314 (0.2385)

Notes: Estimates in Panel A are the effect of positive orthogonalized innovations in the Federal Funds Rate on employment-population ratio by age and race. Panel B presents estimates for the unemployment rate and Panel C presents estimates for the labor force participation rate. The estimates in each panel are constructed from a VAR with the variables ordered as follows: industrial production growth, the percent change in the Consumer Price Index for Urban Consumers, the log of the Commodity Research Board spot price index, a labor market outcome (e.g. unemployment rate), the Federal Funds Rate, the logarithm of nonborrowed reserves, and the logarithm of total reserves. For a more detailed explanation see the methods section of the text.

**Table 4: Impulse Response Functions Out-of-school Young Men by Educational Attainment
(Standard Errors in Parenthesis)**

Panel A: Employment-population Ratio			
Year	High School Dropout	High School Graduate	College Graduate
1	0.000 (0.0000)	0.000 (0.0000)	0.000 (0.0000)
2	-0.5032 (0.3937)	-0.5206 (0.3008)	-0.1039 (0.2717)
3	-0.1457 (0.4197)	-0.3910 (0.4050)	-0.0020 (0.2869)
4	-0.3413 (0.5105)	-0.1581 (0.4544)	0.0229 (0.2186)
5	0.1924 (0.5721)	0.3492 (0.4302)	0.0415 (0.2167)
6	0.2357 (0.5083)	0.4274 (0.3806)	0.1442 (0.1746)
7	0.2487 (0.4119)	0.3717 (0.3413)	0.0531 (0.1359)
8	0.1666 (0.3667)	0.0867 (0.3364)	0.0153 (0.1193)
Panel B: Unemployment Rate			
Year	High School Dropout	High School Graduate	College Graduate
1	0.0000 0.000	0.0000 0.000	0.0000 0.000
2	0.6785 (0.3600)	0.1943 (0.2652)	0.1228 (0.2916)
3	0.0611 (0.4831)	0.0675 (0.3068)	0.1301 (0.3066)
4	0.2776 (0.5849)	-0.1281 (0.3517)	-0.0107 (0.2535)
5	0.0741 (0.6612)	-0.2019 (0.3720)	0.0630 (0.2276)
6	-0.0524 (0.6136)	-0.2084 (0.3290)	-0.1394 (0.1805)
7	-0.2329 (0.5163)	-0.1140 (0.2694)	-0.0843 (0.1569)
8	-0.0096 (0.4784)	0.0324 (0.2522)	-0.0060 (0.1349)

Notes: See end of table.

**Table 4 cont.: Impulse Response Functions Out-of-school Young Men by Educational Attainment
(Standard Errors in Parenthesis)**

Panel C: Labor Force Participation Rate			
Year	High School Dropout	High School Graduate	College Graduate
1	0.0000	0.0000	0.0000
2	-0.1003 (0.2753)	0.0940 (0.2286)	-0.2016 (0.1893)
3	-0.1492 (0.2628)	0.0393 (0.2726)	0.1025 (0.1961)
4	0.0632 (0.2230)	-0.1122 (0.3257)	-0.1299 (0.1970)
5	0.3727 (0.2027)	0.0809 (0.2935)	0.1700 (0.1792)
6	0.1819 (0.1955)	0.1143 (0.2555)	-0.0063 (0.1787)
7	0.1277 (0.1784)	0.2331 (0.2246)	0.0591 (0.1514)
8	0.1064 (0.1746)	0.2258 (0.2162)	0.0001 (0.1317)

Notes: Estimates in Panel A are the effect of positive orthogonalized innovations in the Federal Funds Rate on employment-population ratio by educational attainment. Panel B presents estimates for the unemployment rate and Panel C presents estimates for the labor force participation rate. The estimates in each panel are constructed from a VAR with the variables ordered as follows: industrial production growth, the percent change in the Consumer Price Index for Urban Consumers, the log of the Commodity Research Board spot price index, a labor market outcome (e.g. unemployment rate), the Federal Funds Rate, the logarithm of nonborrowed reserves, and the logarithm of total reserves. For a more detailed explanation see the methods section of the text.

**Table 5: Impulse Response Functions Out-of-school Young Women by Educational Attainment
(Standard Errors in Parenthesis)**

Panel A: Employment-population Ratio				
Year	High School Dropout	High School Graduate	College Graduate	
1	0.000 (0.0000)	0.000 (0.0000)	0.000 (0.0000)	
2	0.7812 (0.5768)	0.0265 (0.2730)	-0.4088 (0.4739)	
3	0.8856 (0.6581)	0.2243 (0.2613)	0.1647 (0.4618)	
4	1.4355 (0.7324)	0.1921 (0.3589)	0.0196 (0.4138)	
5	0.9127 (0.8444)	0.5470 (0.3771)	-0.0628 (0.3819)	
6	0.6556 (0.9302)	0.0437 (0.3322)	0.0352 (0.3022)	
7	-0.1701 (0.9816)	-0.1165 (0.3391)	-0.0331 (0.2158)	
8	-0.9103 (1.1428)	-0.4120 (0.3645)	-0.0894 (0.2127)	
Panel B: Unemployment Rate				
Year	High School Dropout	High School Graduate	College Graduate	
1	0.0000 (0.000)	0.0000 (0.000)	0.0000 (0.000)	
2	-0.0558 (0.5327)	0.1331 (0.2070)	0.0595 (0.2687)	
3	-0.3557 (0.5587)	-0.0422 (0.2146)	-0.2373 (0.2612)	
4	-0.3694 (0.6691)	-0.0019 (0.2193)	-0.0278 (0.2221)	
5	-0.1013 (0.6900)	-0.2241 (0.2796)	0.0885 (0.2163)	
6	-0.0090 (0.6511)	-0.0680 (0.2479)	0.0091 (0.1720)	
7	-0.0350 (0.5482)	-0.1540 (0.2119)	-0.0588 (0.1385)	
8	0.1359 (0.4905)	-0.0676 (0.2092)	-0.0683 (0.1260)	

Notes: See end of table.

**Table 5 cont.: Impulse Response Functions Out-of-school Young Women
by Educational Attainment
(Standard Errors in Parenthesis)**

Panel C: Labor Force Participation Rate			
Year	High School Dropout	High School Graduate	College Graduate
1	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
2	0.9543 (0.5152)	-0.0841 (0.2271)	-0.4458 (0.3662)
3	0.9054 (0.6545)	0.1618 (0.2205)	0.0886 (0.3302)
4	1.2712 (0.6932)	-0.0510 (0.3108)	-0.0512 (0.3024)
5	0.9015 (0.7810)	0.2120 (0.3243)	0.0408 (0.2878)
6	0.7592 (0.8880)	-0.0027 (0.2822)	0.1748 (0.2511)
7	0.2710 (0.9839)	-0.0077 (0.2672)	0.0776 (0.2151)
8	-0.1531 (1.1607)	-0.2120 (0.2553)	0.0197 (0.1888)

Notes: Estimates in Panel A are the effect of positive orthogonalized innovations in the Federal Funds Rate on employment-population ratio by educational attainment. Panel B presents estimates for the unemployment rate and Panel C presents estimates for the labor force participation rate. The estimates in each panel are constructed from a VAR with the variables ordered as follows: industrial production growth, the percent change in the Consumer Price Index for Urban Consumers, the log of the Commodity Research Board spot price index, a labor market outcome (e.g. unemployment rate), the Federal Funds Rate, the logarithm of nonborrowed reserves, and the logarithm of total reserves. For a more detailed explanation see the methods section of the text.

Table 6: Response of Employment-Population Ratio by Race Following Disinflationary Episodes

Variable	Sample: 1973:03 1996:12				Sample: 1973:03 2002:09			
	White		Black		White		Black	
	Coef.	t-Stat.	Coef.	t-Stat.	Coef.	t-Stat.	Coef.	t-Stat.
D ₀	0.043	0.741	0.041	0.309	0.036	0.725	-0.031	-0.260
D ₋₁	0.030	0.642	0.021	0.200	0.032	0.787	-0.029	-0.290
D ₋₂	0.020	0.491	0.005	0.058	0.028	0.803	-0.027	-0.321
D ₋₃	0.012	0.307	-0.008	-0.096	0.025	0.756	-0.027	-0.350
D ₋₄	0.005	0.126	-0.019	-0.233	0.021	0.659	-0.028	-0.375
D ₋₅	-0.001	-0.025	-0.028	-0.341	0.017	0.539	-0.030	-0.400
D ₋₆	-0.005	-0.141	-0.035	-0.422	0.013	0.417	-0.033	-0.433
D ₋₇	-0.008	-0.226	-0.040	-0.482	0.010	0.300	-0.036	-0.475
D ₋₈	-0.011	-0.288	-0.044	-0.530	0.006	0.190	-0.040	-0.529
D ₋₉	-0.012	-0.333	-0.047	-0.570	0.003	0.084	-0.045	-0.595
D ₋₁₀	-0.013	-0.364	-0.049	-0.606	-0.001	-0.020	-0.050	-0.675
D ₋₁₁	-0.014	-0.386	-0.050	-0.639	-0.004	-0.123	-0.056	-0.768
D ₋₁₂	-0.014	-0.401	-0.051	-0.670	-0.007	-0.228	-0.062	-0.874
D ₋₁₃	-0.014	-0.409	-0.051	-0.699	-0.010	-0.334	-0.068	-0.991
D ₋₁₄	-0.013	-0.412	-0.051	-0.726	-0.013	-0.440	-0.074	-1.116
D ₋₁₅	-0.013	-0.411	-0.051	-0.751	-0.015	-0.545	-0.080	-1.245
D ₋₁₆	-0.013	-0.409	-0.051	-0.772	-0.018	-0.647	-0.086	-1.373
D ₋₁₇	-0.012	-0.406	-0.051	-0.792	-0.020	-0.742	-0.092	-1.496
D ₋₁₈	-0.012	-0.405	-0.052	-0.810	-0.022	-0.828	-0.097	-1.609
D ₋₁₉	-0.012	-0.409	-0.052	-0.829	-0.024	-0.905	-0.103	-1.711
D ₋₂₀	-0.012	-0.419	-0.053	-0.851	-0.025	-0.974	-0.108	-1.803
D ₋₂₁	-0.013	-0.439	-0.055	-0.879	-0.027	-1.034	-0.113	-1.887
D ₋₂₂	-0.014	-0.468	-0.057	-0.916	-0.028	-1.088	-0.117	-1.964
D ₋₂₃	-0.015	-0.510	-0.060	-0.964	-0.029	-1.137	-0.121	-2.038
D ₋₂₄	-0.016	-0.565	-0.063	-1.025	-0.030	-1.182	-0.125	-2.110
D ₋₂₅	-0.018	-0.634	-0.067	-1.098	-0.031	-1.225	-0.128	-2.180
D ₋₂₆	-0.020	-0.717	-0.071	-1.185	-0.031	-1.265	-0.130	-2.248
D ₋₂₇	-0.022	-0.815	-0.076	-1.284	-0.031	-1.302	-0.132	-2.311
D ₋₂₈	-0.024	-0.925	-0.081	-1.391	-0.031	-1.332	-0.133	-2.363
D ₋₂₉	-0.027	-1.042	-0.087	-1.499	-0.031	-1.353	-0.133	-2.398
D ₋₃₀	-0.029	-1.160	-0.092	-1.601	-0.031	-1.360	-0.133	-2.408
D ₋₃₁	-0.032	-1.269	-0.098	-1.688	-0.031	-1.349	-0.132	-2.386
D ₋₃₂	-0.035	-1.361	-0.104	-1.753	-0.030	-1.319	-0.131	-2.329
D ₋₃₃	-0.038	-1.430	-0.110	-1.793	-0.029	-1.269	-0.128	-2.240
D ₋₃₄	-0.040	-1.473	-0.116	-1.810	-0.028	-1.203	-0.125	-2.125

Variable	Sample: 1973:03 1996:12				Sample: 1973:03 2002:09			
	White		Black		White		Black	
	Coef.	t-Stat.	Coef.	t-Stat.	Coef.	t-Stat.	Coef.	t-Stat.
D ₋₃₅	-0.042	-1.493	-0.122	-1.811	-0.027	-1.128	-0.122	-1.994
D ₋₃₆	-0.044	-1.494	-0.127	-1.802	-0.026	-1.049	-0.117	-1.856
D ₋₃₇	-0.045	-1.479	-0.131	-1.788	-0.025	-0.971	-0.112	-1.721
D ₋₃₈	-0.046	-1.454	-0.135	-1.776	-0.024	-0.898	-0.106	-1.592
D ₋₃₉	-0.045	-1.418	-0.137	-1.766	-0.022	-0.832	-0.100	-1.471
D ₋₄₀	-0.044	-1.370	-0.138	-1.761	-0.021	-0.774	-0.093	-1.360
D ₋₄₁	-0.042	-1.303	-0.138	-1.756	-0.019	-0.721	-0.085	-1.254
D ₋₄₂	-0.038	-1.205	-0.136	-1.742	-0.018	-0.672	-0.077	-1.145
D ₋₄₃	-0.033	-1.055	-0.131	-1.698	-0.016	-0.619	-0.068	-1.022
D ₋₄₄	-0.027	-0.830	-0.125	-1.590	-0.015	-0.551	-0.059	-0.869
D ₋₄₅	-0.018	-0.526	-0.116	-1.385	-0.014	-0.464	-0.049	-0.678
D ₋₄₆	-0.008	-0.190	-0.103	-1.092	-0.012	-0.363	-0.039	-0.471
D ₋₄₇	0.005	0.110	-0.088	-0.771	-0.011	-0.268	-0.029	-0.284
D ₋₄₈	0.021	0.339	-0.069	-0.484	-0.010	-0.192	-0.018	-0.141
EPOP(-1)	0.901	14.746	0.825	13.569	0.886	16.264	0.819	14.855
EPOP(-2)	0.171	2.104	0.095	1.209	0.181	2.511	0.063	0.899
EPOP(-3)	0.086	1.050	0.164	2.091	0.091	1.247	0.156	2.201
EPOP(-4)	-0.157	-1.925	-0.184	-2.354	-0.173	-2.392	-0.110	-1.560
EPOP(-5)	0.027	0.331	-0.010	-0.129	0.055	0.756	0.004	0.063
EPOP(-6)	-0.037	-0.457	0.108	1.395	-0.025	-0.353	0.040	0.568
EPOP(-7)	-0.007	-0.115	-0.028	-0.462	-0.032	-0.594	0.008	0.142
%ΔCPI-U(-1)	0.326	0.080	-6.880	-0.754	2.738	0.769	-3.012	-0.357
%ΔCPI-U(-2)	-5.868	-1.357	6.385	0.650	-7.157	-1.892	0.586	0.064
%ΔCPI-U(-3)	-4.753	-1.088	-9.784	-0.986	-4.815	-1.261	-12.086	-1.322
%ΔCPI-U(-4)	-5.909	-1.355	7.306	0.735	-6.986	-1.835	5.248	0.573
%ΔCPI-U(-5)	-0.717	-0.164	-5.926	-0.595	0.853	0.223	1.432	0.156
%ΔCPI-U(-6)	-4.352	-0.997	-12.200	-1.231	-3.672	-0.958	-13.216	-1.438
%ΔCPI-U(-7)	4.281	1.021	-15.584	-1.648	2.042	0.555	-11.539	-1.315
Constant	1.041	2.634	1.830	2.669	1.120	3.327	1.326	2.579
Adj. R-squared	0.99		0.98		0.99		0.98	
SE of regression	0.17		0.40		0.17		0.41	
Sample Size	286		286		355		355	

Notes: The table shows the results from the employment ratio for 16 and over whites and blacks on seven own lags, seven lags for the percent change in the CPI-U, and 48 lags on the beginning of disinflationary episodes.

Table 7: Response of Unemployment by Race Following Disinflationary Episodes

Variable	Sample: 1973:03 1996:12				Sample: 1973:03 2002:09			
	White		Black		White		Black	
	Coeff.	t-Stat.	Coeff.	t-Stat.	Coeff.	t-Stat.	Coeff.	t-Stat.
D ₀	-0.058	-1.025	-0.001	-0.009	-0.043	-0.881	0.107	0.760
D ₋₁	-0.040	-0.878	0.036	0.280	-0.036	-0.917	0.099	0.862
D ₋₂	-0.026	-0.666	0.063	0.583	-0.031	-0.910	0.091	0.926
D ₋₃	-0.015	-0.416	0.083	0.837	-0.026	-0.847	0.083	0.924
D ₋₄	-0.006	-0.178	0.096	0.993	-0.022	-0.743	0.075	0.864
D ₋₅	0.000	0.011	0.102	1.057	-0.018	-0.627	0.067	0.775
D ₋₆	0.005	0.142	0.104	1.058	-0.015	-0.520	0.060	0.684
D ₋₇	0.008	0.225	0.101	1.022	-0.013	-0.429	0.053	0.605
D ₋₈	0.009	0.270	0.095	0.964	-0.011	-0.354	0.048	0.541
D ₋₉	0.010	0.287	0.088	0.894	-0.009	-0.290	0.043	0.494
D ₋₁₀	0.010	0.281	0.078	0.814	-0.007	-0.235	0.040	0.463
D ₋₁₁	0.008	0.258	0.068	0.728	-0.005	-0.185	0.038	0.449
D ₋₁₂	0.007	0.222	0.057	0.638	-0.004	-0.136	0.037	0.452
D ₋₁₃	0.005	0.174	0.047	0.545	-0.002	-0.087	0.037	0.472
D ₋₁₄	0.004	0.121	0.038	0.455	-0.001	-0.035	0.039	0.512
D ₋₁₅	0.002	0.065	0.030	0.371	0.001	0.021	0.042	0.570
D ₋₁₆	0.000	0.013	0.023	0.302	0.002	0.082	0.046	0.648
D ₋₁₇	-0.001	-0.029	0.019	0.253	0.004	0.148	0.052	0.744
D ₋₁₈	-0.002	-0.057	0.017	0.232	0.005	0.217	0.059	0.856
D ₋₁₉	-0.002	-0.065	0.018	0.243	0.007	0.291	0.067	0.983
D ₋₂₀	-0.001	-0.053	0.021	0.290	0.009	0.369	0.077	1.124
D ₋₂₁	0.000	-0.016	0.028	0.373	0.011	0.451	0.088	1.279
D ₋₂₂	0.001	0.044	0.037	0.495	0.013	0.538	0.099	1.448
D ₋₂₃	0.003	0.130	0.048	0.657	0.015	0.630	0.112	1.633
D ₋₂₄	0.006	0.242	0.063	0.858	0.017	0.730	0.125	1.832
D ₋₂₅	0.010	0.380	0.080	1.100	0.020	0.836	0.138	2.047
D ₋₂₆	0.014	0.547	0.099	1.381	0.022	0.949	0.152	2.275
D ₋₂₇	0.019	0.740	0.120	1.699	0.024	1.068	0.166	2.510
D ₋₂₈	0.024	0.956	0.143	2.042	0.027	1.189	0.180	2.745
D ₋₂₉	0.030	1.187	0.167	2.394	0.029	1.308	0.193	2.967
D ₋₃₀	0.035	1.422	0.191	2.732	0.031	1.418	0.206	3.159
D ₋₃₁	0.041	1.644	0.216	3.030	0.033	1.509	0.218	3.306
D ₋₃₂	0.047	1.838	0.241	3.267	0.035	1.576	0.228	3.397
D ₋₃₃	0.053	1.994	0.265	3.434	0.037	1.613	0.237	3.427
D ₋₃₄	0.059	2.108	0.286	3.532	0.038	1.621	0.244	3.402
D ₋₃₅	0.063	2.180	0.306	3.570	0.039	1.602	0.249	3.331
D ₋₃₆	0.068	2.216	0.322	3.562	0.040	1.562	0.252	3.226
D ₋₃₇	0.071	2.222	0.333	3.519	0.039	1.506	0.251	3.098
D ₋₃₈	0.073	2.203	0.340	3.448	0.039	1.437	0.246	2.955
D ₋₃₉	0.073	2.159	0.340	3.351	0.037	1.356	0.238	2.798
D ₋₄₀	0.072	2.087	0.333	3.224	0.035	1.260	0.226	2.624
D ₋₄₁	0.068	1.978	0.317	3.054	0.032	1.144	0.208	2.424
D ₋₄₂	0.062	1.813	0.291	2.817	0.028	0.997	0.185	2.179
D ₋₄₃	0.054	1.563	0.255	2.475	0.022	0.803	0.157	1.858
D ₋₄₄	0.042	1.199	0.206	1.981	0.015	0.550	0.122	1.431
D ₋₄₅	0.027	0.719	0.144	1.316	0.007	0.246	0.080	0.893

Variable	Sample: 1973:03 1996:12				Sample: 1973:03 2002:09			
	White		Black		White		Black	
	Coeff.	t-Stat.	Coeff.	t-Stat.	Coeff.	t-Stat.	Coeff.	t-Stat.
D ₋₄₆	0.008	0.183	0.066	0.544	-0.002	-0.063	0.031	0.306
D ₋₄₇	-0.016	-0.313	-0.028	-0.198	-0.013	-0.326	-0.027	-0.222
D ₋₄₈	-0.044	-0.705	-0.141	-0.801	-0.026	-0.517	-0.093	-0.624
URATE(-1)	0.941	15.366	0.651	10.550	0.943	17.272	0.649	11.892
URATE(-2)	0.176	2.092	0.349	4.730	0.173	2.299	0.347	5.321
URATE(-3)	-0.012	-0.148	0.018	0.229	-0.017	-0.223	0.034	0.491
URATE(-4)	0.065	0.773	-0.041	-0.528	0.052	0.685	-0.046	-0.676
URATE(-5)	-0.162	-1.928	-0.004	-0.052	-0.127	-1.691	0.006	0.093
URATE(-6)	0.040	0.471	-0.026	-0.345	0.036	0.479	-0.045	-0.672
URATE(-7)	-0.081	-1.353	0.020	0.331	-0.088	-1.631	0.030	0.550
%ΔCPI-U(-1)	4.157	1.038	4.559	0.409	3.224	0.938	-0.916	-0.092
%ΔCPI-U(-2)	1.759	0.409	-8.690	-0.724	3.689	0.995	-0.294	-0.027
%ΔCPI-U(-3)	4.155	0.961	8.484	0.704	3.855	1.036	10.777	1.000
%ΔCPI-U(-4)	8.216	1.919	7.548	0.626	5.505	1.492	0.189	0.018
%ΔCPI-U(-5)	2.078	0.481	5.792	0.480	3.394	0.912	4.235	0.391
%ΔCPI-U(-6)	-2.140	-0.498	7.929	0.663	-1.528	-0.410	9.639	0.894
%ΔCPI-U(-7)	-6.712	-1.638	9.163	0.811	-4.166	-1.177	12.061	1.184
Constant	0.138	2.046	0.179	0.931	0.094	2.169	0.072	0.566
Adj. R-squared	0.98		0.96		0.98		0.97	
SE of regression	0.17		0.48		0.16		0.48	
Sample Size	286		286		355		355	

Notes: The table shows the results from the unemployment rate for 16 and over whites and blacks on seven own lags, seven lags for the percent change in the CPI-U, and 48 lags on the beginning of disinflationary episodes.

Table 8: Response of Labor Force Participation by Race Following Disinflationary Episodes

Variable	Sample: 1973:03 1996:12				Sample: 1973:03 2002:09			
	White		Black		White		Black	
	Coef.	t-Stat.	Coef.	t-Stat.	Coef.	t-Stat.	Coef.	t-Stat.
D ₀	0.063	1.251	0.010	0.079	0.047	1.088	0.034	0.305
D ₋₁	0.053	1.287	0.018	0.177	0.043	1.207	0.036	0.393
D ₋₂	0.044	1.233	0.022	0.252	0.038	1.242	0.035	0.441
D ₋₃	0.035	1.076	0.022	0.281	0.033	1.165	0.031	0.428
D ₋₄	0.027	0.850	0.020	0.257	0.027	0.994	0.024	0.353
D ₋₅	0.019	0.607	0.015	0.191	0.021	0.776	0.016	0.237
D ₋₆	0.012	0.375	0.008	0.098	0.015	0.547	0.007	0.099
D ₋₇	0.005	0.164	-0.001	-0.012	0.009	0.321	-0.003	-0.049
D ₋₈	-0.001	-0.028	-0.010	-0.134	0.003	0.101	-0.014	-0.206
D ₋₉	-0.007	-0.205	-0.020	-0.267	-0.003	-0.114	-0.026	-0.370
D ₋₁₀	-0.012	-0.373	-0.031	-0.409	-0.009	-0.329	-0.037	-0.541
D ₋₁₁	-0.017	-0.534	-0.041	-0.560	-0.015	-0.544	-0.048	-0.719
D ₋₁₂	-0.021	-0.690	-0.050	-0.716	-0.020	-0.759	-0.058	-0.903
D ₋₁₃	-0.024	-0.839	-0.059	-0.874	-0.025	-0.974	-0.068	-1.087
D ₋₁₄	-0.028	-0.979	-0.067	-1.026	-0.029	-1.182	-0.077	-1.267
D ₋₁₅	-0.030	-1.105	-0.074	-1.164	-0.033	-1.379	-0.084	-1.433
D ₋₁₆	-0.032	-1.215	-0.079	-1.279	-0.037	-1.556	-0.090	-1.576
D ₋₁₇	-0.034	-1.303	-0.083	-1.364	-0.040	-1.708	-0.095	-1.689
D ₋₁₈	-0.036	-1.369	-0.085	-1.414	-0.042	-1.829	-0.098	-1.767
D ₋₁₉	-0.036	-1.414	-0.085	-1.428	-0.044	-1.919	-0.100	-1.807
D ₋₂₀	-0.037	-1.439	-0.084	-1.407	-0.045	-1.978	-0.099	-1.812
D ₋₂₁	-0.037	-1.447	-0.081	-1.354	-0.045	-2.009	-0.098	-1.784
D ₋₂₂	-0.037	-1.443	-0.076	-1.273	-0.045	-2.016	-0.094	-1.727
D ₋₂₃	-0.036	-1.429	-0.069	-1.165	-0.045	-2.002	-0.089	-1.644
D ₋₂₄	-0.035	-1.406	-0.060	-1.031	-0.043	-1.969	-0.083	-1.536
D ₋₂₅	-0.034	-1.377	-0.050	-0.872	-0.042	-1.918	-0.075	-1.405
D ₋₂₆	-0.032	-1.340	-0.039	-0.687	-0.039	-1.849	-0.065	-1.250
D ₋₂₇	-0.030	-1.293	-0.026	-0.474	-0.037	-1.759	-0.055	-1.068
D ₋₂₈	-0.028	-1.235	-0.013	-0.233	-0.033	-1.647	-0.043	-0.858
D ₋₂₉	-0.026	-1.164	0.002	0.030	-0.030	-1.509	-0.031	-0.621
D ₋₃₀	-0.024	-1.076	0.016	0.309	-0.026	-1.344	-0.018	-0.360
D ₋₃₁	-0.021	-0.971	0.031	0.588	-0.022	-1.153	-0.004	-0.084
D ₋₃₂	-0.019	-0.854	0.046	0.851	-0.018	-0.942	0.009	0.194
D ₋₃₃	-0.016	-0.729	0.060	1.081	-0.014	-0.723	0.023	0.458
D ₋₃₄	-0.014	-0.605	0.073	1.267	-0.010	-0.507	0.036	0.696

Variable	Sample: 1973:03 1996:12				Sample: 1973:03 2002:09			
	White		Black		White		Black	
	Coef.	t-Stat.	Coef.	t-Stat.	Coef.	t-Stat.	Coef.	t-Stat.
D ₋₃₅	-0.012	-0.488	0.085	1.406	-0.006	-0.306	0.047	0.896
D ₋₃₆	-0.010	-0.385	0.095	1.498	-0.003	-0.130	0.058	1.057
D ₋₃₇	-0.008	-0.297	0.102	1.549	0.000	0.017	0.067	1.177
D ₋₃₈	-0.006	-0.226	0.106	1.562	0.003	0.133	0.074	1.259
D ₋₃₉	-0.005	-0.171	0.107	1.537	0.005	0.217	0.078	1.303
D ₋₄₀	-0.004	-0.133	0.103	1.471	0.006	0.267	0.079	1.307
D ₋₄₁	-0.003	-0.112	0.095	1.353	0.007	0.279	0.077	1.265
D ₋₄₂	-0.003	-0.110	0.081	1.164	0.006	0.245	0.070	1.160
D ₋₄₃	-0.003	-0.128	0.061	0.878	0.004	0.155	0.059	0.971
D ₋₄₄	-0.004	-0.165	0.033	0.474	0.000	0.002	0.042	0.679
D ₋₄₅	-0.006	-0.213	-0.002	-0.022	-0.005	-0.199	0.020	0.295
D ₋₄₆	-0.009	-0.258	-0.045	-0.521	-0.012	-0.407	-0.009	-0.118
D ₋₄₇	-0.012	-0.290	-0.098	-0.927	-0.021	-0.582	-0.045	-0.482
D ₋₄₈	-0.016	-0.309	-0.162	-1.211	-0.032	-0.710	-0.090	-0.761
LFP(-1)	0.581	9.531	0.637	10.392	0.589	10.849	0.627	11.401
LFP(-2)	0.246	3.566	0.045	0.634	0.238	3.836	0.013	0.209
LFP(-3)	0.081	1.148	0.173	2.431	0.056	0.889	0.179	2.791
LFP(-4)	-0.113	-1.594	0.029	0.399	-0.097	-1.533	0.037	0.567
LFP(-5)	-0.079	-1.108	0.034	0.479	-0.042	-0.667	0.047	0.736
LFP(-6)	0.151	2.168	0.109	1.520	0.144	2.315	0.090	1.400
LFP(-7)	0.116	1.931	-0.054	-0.882	0.094	1.749	-0.018	-0.336
%ΔCPI-U(-1)	4.362	1.212	-2.465	-0.277	6.373	2.012	-3.267	-0.408
%ΔCPI-U(-2)	-1.307	-0.343	-6.257	-0.660	-1.799	-0.534	-5.560	-0.650
%ΔCPI-U(-3)	-1.610	-0.420	-3.119	-0.326	-1.244	-0.368	-5.964	-0.695
%ΔCPI-U(-4)	-0.746	-0.195	10.836	1.136	-4.353	-1.292	2.792	0.326
%ΔCPI-U(-5)	0.014	0.004	0.984	0.103	1.877	0.557	5.564	0.646
%ΔCPI-U(-6)	-5.627	-1.482	-5.305	-0.556	-2.734	-0.811	-6.098	-0.706
%ΔCPI-U(-7)	-0.945	-0.259	-10.954	-1.203	-1.710	-0.531	-3.616	-0.439
Constant	1.179	2.738	1.725	1.517	1.275	3.211	1.674	1.753
Adj. R-squared	0.99		0.95		0.99		0.97	
SE of regression	0.15		0.38		0.15		0.38	
Sample Size	286		286		355		355	

Notes: The table shows the results from the labor force participation rate for 16 and over whites and blacks on seven own lags, seven lags for the percent change in the CPI-U, and 48 lags on the beginning of disinflationary episodes.

Table 9: Summary Statistics for Distribution of Unemployment Models

Variable	March 1973 to September 2002			
	Mean	Maximum	Minimum	Std. Dev.
Federal Funds Rate	7.31	19.10	1.73	3.37
Change in CPI-U	0.41	1.81	-0.46	0.35
Change in Industrial Production	0.21	3.40	-4.16	0.78
Logarithm of Non-borrowed Reserves	10.35	11.01	9.55	0.44
Logarithm of Commodity Spot Prices	5.50	5.74	5.00	0.13
Logarithm of Total Reserves	10.38	11.02	9.72	0.41
Percent less than 5 weeks	41.38	53.39	31.09	5.11
Percent 5 to 14 weeks	30.73	35.77	26.40	1.59
Percent 15 or more weeks	27.90	41.08	17.36	5.59
Percent 27 or more weeks	14.45	26.03	6.50	4.26
Total Number of Unemployed	7,463	12,026	4,177	1,476
Number Less than 5 weeks (in thousands)	3,032	3,974	2,063	402
Number 5 to 14 weeks (in thousands)	2,286	3,518	1,248	426
Number 15 or more weeks (in thousands)	2,145	4,668	756	800
Number 27 or more weeks (in thousands)	1,124	2,885	282	515
Sample Size	355			
Standard Deviation of Federal Funds Residual				
Weeks Unemployed	Less than 5	5 to 14	15 or more	27 or more
Number	0.48	0.48	0.48	0.49
Percent of Total	0.49	0.49	0.49	0.49

Notes: See text for detailed description.

Table 10: Impulse Response Functions of Weeks Unemployed, 1973:3 to 2002:9
(Standard Errors in Parenthesis)

Period	Number of Unemployed				Percent of Total Unemployed			
	Less than 5	5 to 14	15 or more	27 or more	Less than 5	5 to 14	15 or more	27 or more
1	0	0	0	0	0	0	0	0
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	-0.22554	-20.3906	5.047662	1.960188	0.175586	-0.19653	0.030477	0.014928
	(6.3913)	(5.9665)	(5.4810)	(3.5477)	(0.0768)	(0.0608)	(0.0599)	(0.0414)
3	12.28302	-12.347	-7.16839	-2.85654	0.270996	-0.10873	-0.15215	-0.05804
	(6.8464)	(7.1085)	(8.0033)	(4.9357)	(0.0854)	(0.0629)	(0.0778)	(0.0541)
4	0.601484	-5.42118	-13.9428	-3.79376	0.188357	0.030908	-0.21177	-0.06114
	(7.5189)	(8.4482)	(10.1129)	(6.3119)	(0.1017)	(0.0672)	(0.0953)	(0.0671)
5	9.195914	-0.94295	-18.6772	-6.77738	0.281285	0.01384	-0.30726	-0.1176
	(7.7738)	(9.4055)	(12.4346)	(7.6795)	(0.1129)	(0.0674)	(0.1107)	(0.0791)
6	16.70303	2.86976	-21.3185	-13.5803	0.336316	0.037255	-0.38486	-0.21797
	(7.7010)	(10.2339)	(14.5075)	(8.9546)	(0.1230)	(0.0662)	(0.1245)	(0.0893)
7	20.49857	11.14058	-15.4687	-14.3288	0.245122	0.065168	-0.34547	-0.2404
	(6.7424)	(10.3497)	(16.2422)	(10.0744)	(0.1282)	(0.0574)	(0.1370)	(0.0987)
8	22.84371	16.9145	-7.05787	-10.7407	0.183125	0.083976	-0.30223	-0.22193
	(6.6559)	(10.4226)	(17.5733)	(11.0112)	(0.1369)	(0.0564)	(0.1472)	(0.1069)
9	23.67875	18.30722	1.839135	-7.67035	0.13814	0.057519	-0.22686	-0.20236
	(6.5980)	(10.6116)	(18.9709)	(12.0566)	(0.1456)	(0.0548)	(0.1579)	(0.1165)
10	21.33982	20.36043	7.931769	-4.30647	0.101251	0.051883	-0.18576	-0.17313
	(6.6908)	(10.7506)	(20.2056)	(12.9947)	(0.1526)	(0.0546)	(0.1676)	(0.1251)
11	20.90756	21.49732	13.73376	-1.56762	0.071435	0.044849	-0.15335	-0.16282
	(6.7944)	(10.9844)	(21.3618)	(13.8867)	(0.1595)	(0.0546)	(0.1764)	(0.1329)
12	21.9231	22.31981	18.40924	0.981936	0.066087	0.037813	-0.12992	-0.15243
	(6.8813)	(11.2063)	(22.4150)	(14.6885)	(0.1655)	(0.0547)	(0.1842)	(0.1399)
13	22.60282	24.10223	22.3026	3.760073	0.052598	0.039324	-0.11985	-0.14304
	(6.9741)	(11.3676)	(23.3480)	(15.4126)	(0.1708)	(0.0544)	(0.1913)	(0.1463)
14	23.44576	25.60856	26.58722	6.540975	0.037765	0.042164	-0.10876	-0.13446
	(7.0626)	(11.4945)	(24.1957)	(16.0660)	(0.1757)	(0.0542)	(0.1978)	(0.1519)
15	24.57385	26.66757	31.15627	9.643988	0.034933	0.035767	-0.09854	-0.12178
	(7.1408)	(11.5934)	(24.9740)	(16.6489)	(0.1801)	(0.0538)	(0.2039)	(0.1569)
16	25.24512	28.31331	35.76213	12.75978	0.01722	0.036352	-0.08399	-0.10999
	(7.2578)	(11.6583)	(25.6814)	(17.1838)	(0.1839)	(0.0535)	(0.2093)	(0.1615)
17	25.63243	29.56362	40.29747	15.86109	-0.00429	0.038263	-0.06326	-0.09348
	(7.3741)	(11.7111)	(26.3184)	(17.6624)	(0.1873)	(0.0531)	(0.2140)	(0.1655)
18	26.17249	30.25404	44.60876	18.88366	-0.02175	0.034286	-0.03855	-0.07472
	(7.4819)	(11.7346)	(26.8743)	(18.0823)	(0.1901)	(0.0526)	(0.2179)	(0.1688)
19	26.57831	30.99973	48.67469	21.74646	-0.04086	0.032437	-0.01166	-0.05612
	(7.5832)	(11.7259)	(27.3363)	(18.4345)	(0.1922)	(0.0520)	(0.2210)	(0.1714)
20	26.93117	31.5516	52.31199	24.43724	-0.05929	0.029186	0.014843	-0.0369
	(7.6820)	(11.6889)	(27.7072)	(18.7173)	(0.1937)	(0.0512)	(0.2233)	(0.1733)
21	27.27399	31.89523	55.56153	26.95409	-0.07356	0.024373	0.040032	-0.01838
	(7.7793)	(11.6255)	(27.9908)	(18.9341)	(0.1946)	(0.0504)	(0.2248)	(0.1746)
22	27.51459	32.23451	58.42704	29.31705	-0.08551	0.020487	0.062376	-0.00044
	(7.8829)	(11.5505)	(28.1910)	(19.0869)	(0.1949)	(0.0494)	(0.2256)	(0.1753)
23	27.62787	32.43462	60.89363	31.48099	-0.0967	0.01698	0.082049	0.016684
	(7.9899)	(11.4681)	(28.3123)	(19.1779)	(0.1947)	(0.0483)	(0.2257)	(0.1755)

Period	Number of Unemployed				Percent of Total Unemployed			
	Less than 5	5 to 14	15 or more	27 or more	Less than 5	5 to 14	15 or more	27 or more
24	27.71921 (8.0986)	32.45166 (11.3829)	62.97931 (28.3586)	33.42602 (19.2092)	-0.10507 (0.1939)	0.012803 (0.0471)	0.09923 (0.2251)	0.032659 (0.1750)
25	27.74922 (8.2117)	32.39723 (11.3033)	64.67248 (28.3366)	35.13097 (19.1845)	-0.11257 (0.1925)	0.009574 (0.0458)	0.114253 (0.2239)	0.04752 (0.1739)
26	27.68837 (8.3295)	32.21265 (11.2309)	65.96939 (28.2519)	36.59529 (19.1086)	-0.11966 (0.1907)	0.006981 (0.0444)	0.127538 (0.2220)	0.061291 (0.1723)
27	27.58212 (8.4504)	31.86944 (11.1653)	66.88684 (28.1119)	37.81766 (18.9873)	-0.12523 (0.1884)	0.004332 (0.0430)	0.1392 (0.2196)	0.073884 (0.1702)
28	27.41972 (8.5746)	31.45316 (11.1078)	67.4331 (27.9251)	38.79182 (18.8261)	-0.12976 (0.1857)	0.002139 (0.0415)	0.149344 (0.2166)	0.085219 (0.1677)
29	27.19944 (8.7015)	30.96546 (11.0588)	67.63134 (27.6996)	39.52422 (18.6304)	-0.13359 (0.1827)	0.000309 (0.0400)	0.157984 (0.2131)	0.095212 (0.1648)
30	26.94057 (8.8298)	30.39891 (11.0181)	67.51432 (27.4443)	40.02221 (18.4059)	-0.1363 (0.1793)	-0.00139 (0.0385)	0.165162 (0.2091)	0.103841 (0.1614)
31	26.64564 (8.9590)	29.79505 (10.9864)	67.11949 (27.1677)	40.30015 (18.1583)	-0.13801 (0.1757)	-0.00282 (0.0370)	0.170946 (0.2048)	0.111164 (0.1578)
32	26.31144 (9.0882)	29.15331 (10.9630)	66.48041 (26.8782)	40.3727 (17.8935)	-0.13912 (0.1718)	-0.00389 (0.0355)	0.175407 (0.2002)	0.117237 (0.1539)
33	25.94992 (9.2169)	28.46782 (10.9469)	65.62751 (26.5836)	40.25638 (17.6175)	-0.13951 (0.1677)	-0.00486 (0.0340)	0.178662 (0.1953)	0.12216 (0.1497)
34	25.56334 (9.3444)	27.75852 (10.9375)	64.58725 (26.2911)	39.96912 (17.3364)	-0.13928 (0.1635)	-0.0056 (0.0326)	0.18079 (0.1902)	0.126011 (0.1454)
35	25.15011 (9.4704)	27.02588 (10.9333)	63.3823 (26.0067)	39.52722 (17.0556)	-0.13863 (0.1593)	-0.0061 (0.0312)	0.181885 (0.1849)	0.128867 (0.1409)
36	24.71467 (9.5940)	26.26799 (10.9327)	62.0329 (25.7355)	38.94629 (16.7801)	-0.13749 (0.1549)	-0.00646 (0.0298)	0.182023 (0.1796)	0.130804 (0.1363)
37	24.25899 (9.7148)	25.49754 (10.9347)	60.5579 (25.4811)	38.24106 (16.5143)	-0.13589 (0.1505)	-0.00668 (0.0285)	0.181274 (0.1741)	0.131876 (0.1316)
38	23.78337 (9.8321)	24.71886 (10.9379)	58.97573 (25.2460)	37.42589 (16.2618)	-0.13393 (0.1461)	-0.00674 (0.0272)	0.179716 (0.1686)	0.132146 (0.1269)
39	23.29063 (9.9453)	23.93251 (10.9410)	57.30488 (25.0315)	36.51471 (16.0255)	-0.13161 (0.1417)	-0.00671 (0.0259)	0.177433 (0.1632)	0.131681 (0.1222)
40	22.78339 (10.0541)	23.14544 (10.9431)	55.56319 (24.8378)	35.52116 (15.8074)	-0.12896 (0.1373)	-0.0066 (0.0247)	0.174516 (0.1578)	0.130553 (0.1176)
41	22.26292 (10.1581)	22.36072 (10.9432)	53.7674 (24.6640)	34.45834 (15.6088)	-0.12607 (0.1330)	-0.00639 (0.0236)	0.171061 (0.1524)	0.128837 (0.1130)
42	21.73159 (10.2570)	21.57895 (10.9405)	51.93292 (24.5088)	33.33877 (15.4301)	-0.12298 (0.1288)	-0.00615 (0.0225)	0.167164 (0.1472)	0.126614 (0.1086)
43	21.19134 (10.3505)	20.80393 (10.9346)	50.07356 (24.3698)	32.17419 (15.2710)	-0.11972 (0.1246)	-0.00587 (0.0215)	0.162912 (0.1421)	0.123957 (0.1042)
44	20.64344 (10.4383)	20.03772 (10.9248)	48.20138 (24.2445)	30.97558 (15.1305)	-0.11635 (0.1206)	-0.00555 (0.0205)	0.158382 (0.1371)	0.12094 (0.1001)
45	20.0894 (10.5202)	19.28102 (10.9109)	46.32681 (24.1300)	29.75306 (15.0069)	-0.11289 (0.1167)	-0.00521 (0.0195)	0.153637 (0.1324)	0.117628 (0.0961)
46	19.53071 (10.5962)	18.53614 (10.8925)	44.45879 (24.0231)	28.51592 (14.8984)	-0.10937 (0.1128)	-0.00488 (0.0186)	0.14873 (0.1278)	0.11408 (0.0922)
47	18.96846 (10.6661)	17.80458 (10.8696)	42.60497 (23.9207)	27.27253 (14.8023)	-0.1058 (0.1091)	-0.00453 (0.0177)	0.143705 (0.1234)	0.11035 (0.0886)

Period	Number of Unemployed				Percent of Total Unemployed			
	Less than 5	5 to 14	15 or more	27 or more	Less than 5	5 to 14	15 or more	27 or more
48	18.40376 (10.7299)	17.08685 (10.8419)	40.77182 (23.8198)	26.03042 (14.7162)	-0.10221 (0.1056)	-0.0042 (0.0169)	0.138599 (0.1192)	0.106485 (0.0852)
49	17.83766 (10.7875)	16.38411 (10.8094)	38.96482 (23.7176)	24.79624 (14.6373)	-0.09861 (0.1021)	-0.00387 (0.0161)	0.133444 (0.1153)	0.102529 (0.0820)
50	17.27102 (10.8390)	15.69711 (10.7723)	37.18853 (23.6113)	23.57583 (14.5628)	-0.09501 (0.0988)	-0.00356 (0.0154)	0.128273 (0.1115)	0.098518 (0.0791)

Notes: See text for detailed description.

Table 11: Response of Weeks Unemployed to Disinflationary Episodes, March 1973 to September 2002

Panel A: Number of Weeks Unemployed		Less than 5 Weeks		5 to 14 Weeks		15 or more Weeks		27 or more weeks	
Variable	Coef.	t-Stat.	Coef.	t-Stat.	Coef.	t-Stat.	Coef.	t-Stat.	
D ₀	-57.419	-1.636	15.930	0.494	8.155	0.284	-7.032	-0.376	
D ₋₁	-50.197	-1.760	12.821	0.489	6.514	0.279	-4.105	-0.270	
D ₋₂	-43.538	-1.799	10.373	0.467	5.096	0.257	-1.785	-0.138	
D ₋₃	-37.409	-1.714	8.534	0.426	3.900	0.217	0.006	0.001	
D ₋₄	-31.777	-1.521	7.253	0.378	2.928	0.169	1.344	0.119	
D ₋₅	-26.612	-1.282	6.481	0.340	2.177	0.126	2.297	0.204	
D ₋₆	-21.886	-1.046	6.170	0.320	1.646	0.094	2.932	0.258	
D ₋₇	-17.570	-0.833	6.275	0.322	1.331	0.075	3.309	0.288	
D ₋₈	-13.637	-0.647	6.751	0.346	1.229	0.069	3.486	0.303	
D ₋₉	-10.062	-0.482	7.554	0.391	1.333	0.076	3.516	0.308	
D ₋₁₀	-6.821	-0.334	8.642	0.455	1.639	0.095	3.446	0.307	
D ₋₁₁	-3.889	-0.196	9.976	0.539	2.137	0.127	3.323	0.304	
D ₋₁₂	-1.246	-0.065	11.515	0.641	2.821	0.173	3.185	0.300	
D ₋₁₃	1.130	0.061	13.223	0.761	3.681	0.233	3.069	0.299	
D ₋₁₄	3.257	0.182	15.064	0.895	4.706	0.308	3.006	0.303	
D ₋₁₅	5.156	0.297	17.001	1.038	5.885	0.396	3.023	0.313	
D ₋₁₆	6.842	0.403	19.004	1.185	7.206	0.496	3.144	0.333	
D ₋₁₇	8.331	0.499	21.038	1.330	8.655	0.605	3.388	0.364	
D ₋₁₈	9.640	0.582	23.074	1.467	10.218	0.720	3.769	0.408	
D ₋₁₉	10.780	0.652	25.084	1.596	11.878	0.839	4.297	0.466	
D ₋₂₀	11.764	0.709	27.039	1.714	13.621	0.960	4.979	0.539	
D ₋₂₁	12.604	0.757	28.912	1.823	15.427	1.083	5.817	0.628	
D ₋₂₂	13.309	0.797	30.681	1.926	17.279	1.210	6.808	0.733	
D ₋₂₃	13.889	0.831	32.320	2.025	19.156	1.340	7.946	0.855	
D ₋₂₄	14.350	0.862	33.809	2.120	21.039	1.475	9.219	0.995	
D ₋₂₅	14.699	0.890	35.127	2.213	22.905	1.614	10.613	1.152	
D ₋₂₆	14.941	0.915	36.254	2.301	24.732	1.756	12.108	1.325	
D ₋₂₇	15.080	0.938	37.174	2.382	26.496	1.898	13.682	1.513	
D ₋₂₈	15.120	0.955	37.870	2.449	28.172	2.035	15.305	1.709	
D ₋₂₉	15.060	0.965	38.327	2.495	29.734	2.160	16.946	1.905	
D ₋₃₀	14.902	0.964	38.532	2.512	31.156	2.262	18.568	2.089	
D ₋₃₁	14.644	0.948	38.473	2.493	32.410	2.333	20.131	2.249	
D ₋₃₂	14.286	0.917	38.140	2.434	33.467	2.367	21.590	2.372	
D ₋₃₃	13.822	0.869	37.524	2.339	34.296	2.362	22.897	2.452	
D ₋₃₄	13.250	0.810	36.617	2.213	34.868	2.324	23.997	2.488	
D ₋₃₅	12.562	0.741	35.413	2.067	35.149	2.257	24.833	2.481	
D ₋₃₆	11.752	0.668	33.907	1.909	35.108	2.172	25.343	2.439	
D ₋₃₇	10.813	0.594	32.096	1.748	34.709	2.075	25.462	2.368	
D ₋₃₈	9.734	0.519	29.978	1.589	33.918	1.972	25.118	2.270	
D ₋₃₉	8.505	0.445	27.553	1.434	32.699	1.864	24.238	2.148	
D ₋₄₀	7.115	0.368	24.822	1.280	31.015	1.751	22.742	1.995	
D ₋₄₁	5.550	0.287	21.786	1.124	28.828	1.627	20.548	1.801	
D ₋₄₂	3.797	0.198	18.450	0.958	26.097	1.482	17.568	1.548	
D ₋₄₃	1.839	0.096	14.820	0.773	22.784	1.299	13.711	1.211	
D ₋₄₄	-0.339	-0.017	10.901	0.560	18.847	1.059	8.880	0.770	
D ₋₄₅	-2.755	-0.130	6.702	0.325	14.243	0.756	2.976	0.243	
D ₋₄₆	-5.429	-0.224	2.233	0.096	8.930	0.422	-4.105	-0.297	

Panel A: Number of Weeks Unemployed		Less than 5 Weeks		5 to 14 Weeks		15 or more Weeks		27 or more weeks	
Variable	Coef.	t-Stat.	Coef.	t-Stat.	Coef.	t-Stat.	Coef.	t-Stat.	
D ₋₄₇	-8.381	-0.285	-2.496	-0.090	2.863	0.114	-12.472	-0.757	
D ₋₄₈	-11.631	-0.316	-7.472	-0.218	-4.003	-0.129	-22.238	-1.092	
WK5L(-1)	0.376	6.894	0.695	12.684	1.086	20.001	0.994	18.257	
WK5L(-2)	0.424	7.303	0.300	4.495	-0.024	-0.298	0.122	1.576	
WK5L(-3)	0.099	1.583	0.054	0.791	0.085	1.050	0.023	0.291	
WK5L(-4)	0.026	0.415	-0.021	-0.297	-0.132	-1.616	-0.009	-0.112	
WK5L(-5)	-0.017	-0.272	-0.005	-0.068	0.001	0.012	-0.067	-0.864	
WK5L(-6)	0.022	0.376	-0.048	-0.686	0.099	1.220	-0.071	-0.929	
WK5L(-7)	0.030	0.549	-0.026	-0.461	-0.147	-2.669	-0.021	-0.384	
INFLATION(-1)	-902.925	-0.360	24.300	0.010	-2020.728	-0.979	-1953.922	-1.461	
INFLATION(-2)	3218.332	1.200	1348.366	0.539	1013.994	0.459	2991.176	2.074	
INFLATION(-3)	4287.102	1.593	1094.335	0.437	-1489.719	-0.673	-3925.656	-2.694	
INFLATION(-4)	5236.163	1.946	3070.711	1.239	-700.733	-0.317	365.848	0.250	
INFLATION(-5)	577.364	0.213	3050.521	1.221	1056.045	0.477	-757.745	-0.516	
INFLATION(-6)	-683.301	-0.252	-2493.656	-0.992	695.567	0.314	-64.795	-0.044	
INFLATION(-7)	-1751.154	-0.679	-2808.153	-1.178	2555.270	1.230	3016.494	2.205	
Constant	86.427	1.627	86.308	2.016	50.241	2.203	29.392	2.199	
Mean dependent variable	3031.831		2286.290		2145.090		1124.304		
Adjusted R-squared	0.911		0.932		0.985		0.984		
S.E. of regression	120.216		111.064		98.920		64.467		

Notes: See text for detailed description.

**Table 11 cont.: Response of Weeks Unemployed to Disinflationary Episodes,
March 1973 to September 2002**

Panel B: Percent of Weeks Unemployed								
Variable	Less than 5 Weeks		5 to 14 Weeks		15 or more Weeks		27 or more weeks	
	Coef.	t-Stat.	Coef.	t-Stat.	Coef.	t-Stat.	Coef.	t-Stat.
D ₀	-0.641	-1.567	0.482	1.482	0.125	0.403	-0.057	-0.266
D ₋₁	-0.569	-1.715	0.417	1.579	0.130	0.513	-0.021	-0.122
D ₋₂	-0.506	-1.797	0.363	1.619	0.133	0.618	0.008	0.052
D ₋₃	-0.451	-1.770	0.320	1.571	0.135	0.691	0.031	0.229
D ₋₄	-0.405	-1.649	0.285	1.453	0.136	0.724	0.049	0.375
D ₋₅	-0.366	-1.489	0.258	1.314	0.136	0.727	0.062	0.479
D ₋₆	-0.334	-1.340	0.238	1.195	0.136	0.718	0.071	0.545
D ₋₇	-0.309	-1.223	0.224	1.110	0.136	0.709	0.077	0.585
D ₋₈	-0.290	-1.142	0.215	1.061	0.136	0.707	0.081	0.610
D ₋₉	-0.277	-1.095	0.211	1.045	0.136	0.713	0.082	0.624
D ₋₁₀	-0.269	-1.079	0.210	1.056	0.137	0.728	0.081	0.633
D ₋₁₁	-0.265	-1.090	0.212	1.091	0.138	0.753	0.080	0.637
D ₋₁₂	-0.266	-1.125	0.217	1.145	0.140	0.786	0.078	0.638
D ₋₁₃	-0.271	-1.182	0.223	1.213	0.142	0.826	0.075	0.638
D ₋₁₄	-0.279	-1.255	0.231	1.288	0.146	0.873	0.073	0.637
D ₋₁₅	-0.290	-1.342	0.239	1.364	0.150	0.925	0.070	0.635
D ₋₁₆	-0.303	-1.437	0.246	1.436	0.155	0.979	0.069	0.635
D ₋₁₇	-0.319	-1.536	0.254	1.498	0.161	1.035	0.068	0.637
D ₋₁₈	-0.337	-1.636	0.261	1.546	0.169	1.090	0.068	0.645
D ₋₁₉	-0.356	-1.734	0.266	1.580	0.177	1.147	0.070	0.661
D ₋₂₀	-0.376	-1.830	0.270	1.600	0.186	1.205	0.073	0.687
D ₋₂₁	-0.396	-1.927	0.272	1.608	0.196	1.268	0.077	0.725
D ₋₂₂	-0.417	-2.025	0.272	1.605	0.207	1.337	0.083	0.776
D ₋₂₃	-0.438	-2.126	0.270	1.593	0.219	1.413	0.090	0.843
D ₋₂₄	-0.458	-2.231	0.266	1.573	0.232	1.499	0.098	0.926
D ₋₂₅	-0.478	-2.341	0.258	1.542	0.245	1.594	0.108	1.027
D ₋₂₆	-0.496	-2.453	0.249	1.501	0.258	1.699	0.119	1.144
D ₋₂₇	-0.513	-2.563	0.236	1.447	0.272	1.810	0.131	1.276
D ₋₂₈	-0.528	-2.667	0.222	1.376	0.285	1.924	0.144	1.421
D ₋₂₉	-0.541	-2.754	0.204	1.285	0.299	2.035	0.157	1.572
D ₋₃₀	-0.551	-2.815	0.184	1.171	0.312	2.134	0.171	1.720
D ₋₃₁	-0.559	-2.842	0.162	1.033	0.325	2.212	0.185	1.855
D ₋₃₂	-0.564	-2.828	0.138	0.874	0.337	2.262	0.198	1.967
D ₋₃₃	-0.565	-2.773	0.112	0.699	0.347	2.282	0.211	2.049
D ₋₃₄	-0.563	-2.683	0.084	0.514	0.357	2.273	0.223	2.098
D ₋₃₅	-0.557	-2.566	0.055	0.328	0.364	2.242	0.233	2.118
D ₋₃₆	-0.547	-2.434	0.025	0.145	0.370	2.195	0.240	2.111
D ₋₃₇	-0.533	-2.295	-0.005	-0.031	0.373	2.141	0.246	2.085
D ₋₃₈	-0.514	-2.155	-0.036	-0.199	0.373	2.084	0.247	2.043
D ₋₃₉	-0.490	-2.018	-0.066	-0.361	0.370	2.030	0.245	1.987
D ₋₄₀	-0.461	-1.883	-0.095	-0.519	0.364	1.976	0.239	1.915
D ₋₄₁	-0.427	-1.746	-0.123	-0.674	0.354	1.920	0.227	1.819
D ₋₄₂	-0.388	-1.596	-0.148	-0.824	0.339	1.852	0.209	1.685
D ₋₄₃	-0.343	-1.416	-0.170	-0.956	0.320	1.749	0.184	1.487
D ₋₄₄	-0.291	-1.186	-0.189	-1.042	0.295	1.583	0.152	1.199

Panel B: Percent of Weeks Unemployed								
Variable	Less than 5 Weeks		5 to 14 Weeks		15 or more Weeks		27 or more weeks	
	Coef.	t-Stat.	Coef.	t-Stat.	Coef.	t-Stat.	Coef.	t-Stat.
D ₋₄₅	-0.234	-0.899	-0.204	-1.045	0.264	1.330	0.111	0.818
D ₋₄₆	-0.171	-0.581	-0.214	-0.951	0.227	1.008	0.060	0.392
D ₋₄₇	-0.101	-0.287	-0.218	-0.795	0.182	0.678	0.000	-0.001
D ₋₄₈	-0.024	-0.056	-0.215	-0.624	0.131	0.392	-0.072	-0.312
PWK5L(-1)	0.485	8.971	0.301	5.555	0.865	15.974	0.877	16.156
PWK5L(-2)	0.458	7.584	0.305	5.388	0.210	2.920	0.209	2.868
PWK5L(-3)	0.132	2.042	0.151	2.594	-0.028	-0.387	0.044	0.603
PWK5L(-4)	0.006	0.097	0.054	0.923	-0.027	-0.376	-0.040	-0.543
PWK5L(-5)	-0.023	-0.352	0.015	0.250	0.038	0.524	-0.037	-0.494
PWK5L(-6)	-0.022	-0.370	0.005	0.082	0.008	0.117	-0.061	-0.839
PWK5L(-7)	-0.099	-1.808	-0.072	-1.311	-0.116	-2.141	-0.038	-0.703
INFLATION(-1)	28.959	0.972	0.600	0.026	-28.804	-1.281	-28.358	-1.834
INFLATION(-2)	4.068	0.129	7.897	0.313	-15.748	-0.653	28.327	1.695
INFLATION(-3)	35.072	1.113	-14.661	-0.582	-19.856	-0.821	-46.037	-2.735
INFLATION(-4)	20.023	0.637	17.160	0.685	-34.574	-1.440	-15.765	-0.933
INFLATION(-5)	-29.166	-0.923	33.522	1.330	11.113	0.460	-9.494	-0.559
INFLATION(-6)	-11.483	-0.363	-3.855	-0.152	22.319	0.925	10.200	0.601
INFLATION(-7)	-13.697	-0.460	-32.131	-1.352	37.115	1.629	32.765	2.064
Constant	2.704	3.298	7.246	4.375	1.347	3.095	0.704	3.146
Mean dependent variable	41.377		30.728		27.895		14.452	
Adjusted R-squared	0.925		0.503		0.963		0.970	
S.E. of regression	1.402		1.121		1.076		0.743	

Notes: See text for detailed description.

ENDNOTES

¹ See Blinder and Yellen (2001) for detailed description of the Federal Reserve's monetary policy actions during the 1990s.

² See, for example, Hoynes (2000), Romer and Romer (1998), Moorthy (1988), Korenman and Okun (1989), Spriggs and Williams (2000) and Blank and Blinder (1996), Shulman (1991), Wilson, Tienda and Wu (1991), Badgett (1994), and Clark and Summers (1981, 1990).

³ The employment-population ratio can be written as:

$$\frac{E}{P} = \frac{LF}{P} \times (1 - UR)$$

where E denotes employment, P denotes the civilian population, LF denotes the labor force (E + U), and UR denotes the unemployment rate.

⁴ See, for example, Reimers (2000), Freeman and Rodgers (2000), Freeman (2001), Hoynes, Hines and Krueger (2001). A second round of studies continues to find gains, but they have not made up the lost ground that occurred from the 1970s to 1980s (Holzer and Offner (2001) and Milanovich (2002)).

⁵ The employment-population ratio is defined as the share of the civilian population that is employed. The labor force participation rate is the share of the civilian population that is either employed or actively searching for a job. The unemployment rate is the share of the labor force (employed plus unemployed) that is actively searching for a job.

⁶ I do estimate the models for the period from July 1959 to September 2002. The results which are similar to those presented are available upon request.

⁷ The impulse response functions for the 1959:7 to 2002:9 series are similar. At less than 5 weeks of unemployment, the number of unemployed reaches its maximum of 22,900 in the 24th month. At 5 to 14 weeks, the maximum increase of 23,300 is reached in month 26. At 15 or more weeks, the number reaches its maximum of 42,980 by the 32nd month and 24,500 by the 35th month in the 27 weeks or more category.

⁸ The figures in the text were converted to a 58 basis point increase from a 48 basis point increase. The figures for a 48 basis point increase are as follows. An unexpected one-standard deviation (48 basis points) increase reaches its peak impact in months 24 to 32. At 5 weeks of unemployment or less, the number of unemployed increases by 27,700. At 5 to 14 weeks of unemployment, unemployment grows by 32,400 people. At 15 or more and 27 weeks or more (long-term unemployment), unemployment grows by 67,600 and 40,400. The VARs that use the percent of the total number of people unemployed reach their maximums much quicker. A one-standard deviation increase in the Federal Funds Rate has a maximum impact of 0.34 at 5 weeks or less, with the maximum reached by the 6 month. This estimate means that a 48 basis point increase in the Federal Funds Rate increases the share of unemployed that is less than 5 weeks by 0.34 percentage points. From 5 to 14 weeks of unemployment, the same increase in the Federal Funds Rate lowers this share by 0.196 percentage points. It reaches this value by the second month. For 15 or more weeks of unemployment, a one-standard deviation increase lowers the share of unemployment at this segment by 0.38 percentage points. The maximum is achieved in the sixth month. Finally, the increase in the Federal Funds Rate lowers the share of unemployed more than 27 months by 0.24 percentage points.

⁹ The Department of Labor explicitly states that Unemployment Insurance "provides benefits to eligible workers who become unemployed through no fault of their own and meet certain other eligibility requirements. Responsibility for becoming unemployed or having greater difficulty in finding a job because of tight monetary policy can not be placed on an individual. See <http://www.dol.gov/dol/topic/unemployment-insurance/index.htm>. States governments play a role because they set the specific monetary and nonmonetary eligibility conditions.