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Research Report

Who pays for disinflation? Disinflationary monetary policy and the distribution of income

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The Jerome Levy Economics Institute of Bard College

Public Policy Brief

Who Pays for Disinflation?

Disinflationary Monetary Policy and the
Distribution of Income

Willem Thorbecke

LEVY INSTITUTE

No. 38, 1997

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Summary

Some economic observers have proposed that the Federal Reserve should not only continue to set policy aimed at keeping inflation at its current low level, but should seek to reduce it further. They argue that low inflation allows resources to be allocated more efficiently, thus yielding substantial economic gains. But Research Associate Willem Thorbecke asserts that such a proposal does not take into account how the costs and benefits of disinflationary monetary policy are distributed; the burden of the policy falls on low-income families and its benefits accrue to high-income families.

Thorbecke has found that theoretical predictions, econometric results, and the example of the Volcker disinflation of 1979 to 1982 present a consistent picture of the distributional effects of contractionary monetary policy. Unemployment increases, especially among lower-wage workers, with urban workers, workers not covered by union contracts, and minorities faring worst. For example, during the disinflationary period from 1979 to 1982 African American unemployment increased 9.5 percent, Hispanic unemployment increased 7.1 percent, while white unemployment increased 4.5 percent. Research on the effect of disinflationary policies on various industries and businesses indicates that small firms suffer more than large firms and that durable manufacturing and construction industries suffer more than other industries when interest rates rise. As interest rates rise during a contraction, however, returns on bonds increase. Therefore, since most bond market investors are among the wealthiest 10 percent of Americans, it is those households with high-income that tend to benefit from contractionary policies, while lower-income and minority households tend to pay the costs. This redistribution from poorer to wealthier households contributes to the growing wealth inequality in the United States.

Thorbecke argues that, because of these distributional consequences, engineering a disinflationary recession now would be inappropriate. The central argument against expansionary monetary policy is that it leads to

a rise in inflation, but the recent decline in the unemployment rate has not resulted in higher inflation; workers today seem willing to forgo higher wage increases in exchange for job security. The combination of the facts that lower-income families, interest-sensitive industries, and small firms are burdened disproportionately and at the same time the risks of inflation are low indicates that rather than causing the economy to contract, the Fed should let it expand. Allowing employment to grow would benefit those most at risk for shrinking income.

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Preface

Despite the strong economy, the gap between rich and poor has continued to grow in the United States. As Research Associate Willem Thorbecke notes, in the past 20 years the income of those on the upper end of the income distribution has increased steadily, while the income of those in the poorest decile has decreased almost 30 percent. Some researchers and policymakers view this growing disparity as a social injustice and a threat to social stability, and they have proposed several ways to close the gap between rich and poor, such as training and education for workers so that they can move into higher-skilled, higher-paid jobs and economic policies that promote the creation of stable, well-paid jobs.

In the search for ways to close the income gap, however, many observers fail to consider that a solution might be found in monetary policy. Although monetary policy is a potent policy tool that affects a variety of economic variables, policymakers generally focus on only two—inflation and unemployment. But, monetary policy has an effect on economic growth generally; its influence is felt throughout the economy. One of the variables it can have repercussions on is the degree of poverty and wealth experienced by different portions of the economy at any point in time. In this brief Thorbecke argues that the distribution of income and wealth is widened by contractionary monetary policies and that abandoning these policies would result in a narrowing of the income gap. Clearly, then, monetary policy should be viewed not just as a means of wringing another fraction of a percentage point of inflation out of the economy; it can be used as a tool to overcome widening economic inequities.

Federal Reserve policymakers have appeared reluctant to promote direct policies that might further reduce the unemployment rate for fear that a

tight labor market will lead to upward wage pressures and thus a rise in inflation. However, a number of economists now question this view of the relationship between unemployment and inflation, challenging the long-held belief that low rates of inflation and unemployment cannot exist simultaneously. In recent months even the Fed has seemed willing to test the waters for the sensitivity of inflation to declining unemployment. If it continues its current policy of non-contraction, the Fed will be able to gauge the extent of such sensitivity and at the same time can assist in closing the income gap.

Thorbecke's research on the effects on workers and firms of higher interest rates—the Fed's common method for controlling inflation—bolsters the view that because lower-income households are most hurt by higher interest rates, disinflationary monetary policy not only contributes to the growing income gap, but also may counter other government policies that seek to close the income gap. We hope that his research opens the door to further discussion about the many economic repercussions of monetary policy and the role of the Fed in promoting economic change.

Dimitri B. Papadimitriou
Executive Director
December 1997

Disinflationary Monetary Policy and the Distribution of Income

Inflation over the last five years has remained below 3 percent. Many economic observers argue that, as a result, inflation has ceased to matter much in the decisions of consumers and businesses. Some, such as Martin Feldstein (1997), W. Lee Hoskins (1991), and Jerry Jordan (1993), argue that further gains are needed on the inflationary front. Feldstein, for instance, asserts that reducing the inflation rate to zero would produce substantial gains to the economy. He estimates that, to achieve price stability, the Federal Reserve would have to engineer a recession that reduces real gross domestic product by 5 percent, but holds that these costs would be far outweighed by the benefits that would accrue from reducing the misallocation of resources (in jargon, the deadweight losses) due to inflation. What Feldstein overlooks in his analysis is how the costs and benefits of such a policy would be distributed. Who would bear the burden of disinflationary monetary policy? Who would reap the benefits? Would such distributional consequences be desirable in the present economic environment?

This brief attempts to answer these questions. It first reviews what economic theory predicts will be the effect of disinflationary policy on different sectors. The traditional textbook story (called the “money” channel of monetary policy) implies that when the Fed raises interest rates, employment in interest-sensitive industries should fall more than in other industries. Recent research emphasizing the interaction between monetary policy and financial markets (called the “credit” channel of monetary policy) implies that small, financially constrained firms should be hurt more than large, financially stable firms. A slowdown in aggregate activity working through either the money or the credit channel would burden low-income workers more than high-income workers. Since minorities tend to have lower wages than whites, disinflationary policy should disproportionately affect them. Lenders such as bondholders would gain by an unanticipated decrease in inflation.

The brief next examines evidence concerning the distributional effects of contractionary policy. Econometric results are consistent with the theoretical predictions. They indicate that interest-sensitive industries, such as construction and durable goods, and small firms are harmed disproportionately. Tracing the effects of a slowdown in construction and durable goods through the economy indicates that the burden falls especially on low-income urban workers, with unemployment among blacks and Hispanics increasing approximately twice as much as unemployment among whites. Evidence also indicates that Treasury bond prices are driven primarily by news of inflation and will appreciate as inflation declines.

Corroboration of these econometric results is obtained by examining the period from 1979 to 1982, during which the Fed raised interest rates and caused a contraction of economic activity while reducing inflation. Employment in durable manufacturing and construction dropped, profits of small firms declined much more than profits of large firms, and unemployment among blacks rose while unemployment among whites increased less than half as much. Meanwhile, bond prices soared, benefiting the wealthiest 10 percent of households, who held almost 95 percent of all bonds and trusts (Moore 1989; Niggle 1989).

Finally the brief considers the policy implications of these findings—whether now would be a good time to engineer a monetary disinflation, which would have the ultimate effect of redistributing income from poorer to wealthier individuals. Over the past 20 years incomes of those on the upper tail of the income distribution have increased steadily, while incomes of the poorest decile have decreased almost 30 percent and of the second poorest decile almost 20 percent (Bradbury 1996). Commenting on this trend, the chairman of the Federal Reserve, Alan Greenspan, stated that it could be a major threat to our society, and the president of the Federal Reserve Bank of New York, William McDonough, warned that it could endanger our ability to go forward together as a unified society.¹ Faced with these distributional problems, it seems that now would be a particularly bad time to engineer a monetary disinflation. Rather, the fact that inflation has remained quiescent while unemployment has stayed below 6 percent since September 1994 suggests that now would be a good time for the Fed to try letting unemployment fall. Even if the monetary authorities do not stimulate the economy, abstaining from tightening following positive employment news would be helpful. Allowing the jobless rate to fall in this way would especially benefit those most at risk in our society—poorer families, minorities, and inner-city workers.

Economic Theory and the Distributional Effects of Monetary Policy

Interest-Sensitive Industries and Small Firms

In traditional textbook models disinflationary monetary policy slows the economy by raising interest rates. The Fed directly controls the federal funds interest rate, the rate on one-day loans between banks. By increasing current and expected future values of the funds rate, according to the models, the Fed can raise longer-term interest rates and reduce stock prices. These changes increase the interest cost of using capital; as the cost of capital rises, spending on capital goods, houses, and durables decreases; the reduction in spending then causes output in these sectors to fall. As output and thus the incomes of those working in these industries decline, other sectors of the economy are harmed. The largest burden, though, is borne by interest-sensitive industries, such as construction and durable goods.

This direct effect of contractionary monetary policy on interest-sensitive industries can be amplified by its effect on firms' access to credit. As Bernanke (1993) and Gertler and Gilchrist (1994) discuss, firms with strong balance sheet positions can finance their activities either directly using their own funds or indirectly using their net worth as collateral to obtain credit. Firms that have weak balance sheets or that are otherwise constrained in their access to capital markets are more dependent on banks to finance inventory investment and capital formation. For these credit-constrained firms, a monetary contraction can severely curtail their ability to operate. A monetary tightening, by increasing interest rates, can worsen cash flow net of interest and thus firms' balance sheet positions (Gertler and Gilchrist 1994). As Bernanke and Blinder (1988) show, a monetary contraction engineered through an open market sale by the Federal Reserve can decrease bank loans (assuming that bonds and bank loans are imperfect substitutes). The reduction in collateralizable net worth and in bank loans caused by a monetary contraction restricts working capital and thus economic activity among firms with limited access to capital markets.

Gertler and Gilchrist argue that smaller firms are more likely to be constrained in their access to credit. They are more likely to obtain funds from banks than from equity, bonds, or commercial paper and are less likely to be well collateralized. Further, the effect of changes in

monetary policy on small firms is greater in bad times than in good times, that is, a monetary contraction when the economy is in a recession can have a much greater effect on small firms than would a monetary expansion when the economy is growing. Thus, if credit constraints help propagate monetary policy, small firms should be disproportionately burdened by disinflationary monetary policy, especially during recessions.

Low-Income Workers

There are many reasons why contractionary policy should hurt low-income individuals more than high-income individuals. Blanchard and Katz (1997) argue that a negative macroeconomic shock such as a tightening of monetary policy will harm those on lower rungs of the occupational ladder much more than those on higher rungs because the elasticity of labor supply is greater for unskilled workers than for skilled workers. The wages of unskilled workers tend to be low, and small decreases can reduce wages below the level at which these workers are willing to work (in jargon, below their reservation wages). The wages of skilled workers tend to be higher, and small decreases can leave wages high enough that the workers will still prefer to work. Thus a business cycle downturn that reduces wages can sharply reduce employment among unskilled workers, but have little effect on employment among skilled workers. Fischer, Dornbusch, and Schmalensee (1988) find that blue-collar jobs tend to be affected much more than white-collar jobs by economywide slowdowns.

Blinder and Esaki (1978) assert that negative macroeconomic shocks that increase the unemployment rate by one percentage point take about 0.28 percent of national income away from the lowest 40 percent of the income distribution and give it to the richest 20 percent. An explanation for Blinder and Esaki's finding is that poorer families receive more of their income from cyclically sensitive sources, such as low-paying jobs, whereas high-income families receive more of their income from stable sources, such as interest payments. Thus low-income, low-skilled individuals suffer more from a monetary contraction.

It is readily apparent that African Americans tend to have lower incomes than whites (see, for example, Bound and Freeman 1992). The reasons for this wage gap are less clear. As Card and Lemieux (1994)

discuss, the gap could reflect factors such as discrimination, productivity differences, and differential access to job information. The implication of the wage gap for monetary policy, however, is clear. The brunt of contractionary monetary policy falls on blacks and other minorities earning lower wages rather than on whites.

Bondholders

Another way to shed light on the distributional effects of disinflationary monetary policy is to examine benefits to bond market investors and other creditors. In order to hold a bond, lenders require not only an expected real return but also compensation for expected inflation. Assume, for instance, that to hold a given bond, wealth holders require a 2 percent expected real return and a 3 percent inflation premium. The anticipated nominal return on the bond would thus be 5 percent. If inflation declined unexpectedly to 1 percent and the nominal return remained at 5 percent, the real return on the bond would actually be 4 percent and lenders would receive a 2 percentage point higher real return than they required—an increase in return provided involuntarily by borrowers. Thus, a decline in inflation would produce a redistribution to creditors from debtors. Since it is wealthier households that are creditors and businesses, government, and poorer households that are debtors, an unanticipated disinflation can be expected to help wealthier households at the expense of other sectors.

Evidence on the Distributional Effects of Monetary Policy

Economic theory predicts that disinflationary monetary policy will have differential effects across the economy; it will disproportionately harm interest-sensitive industries, small firms, low-income individuals, and minorities and it will benefit bondholders. This section presents evidence on these distributional effects.

Econometric Evidence

To calculate the effect of monetary policy on employment by industry and race and on small firms, the impulse-response methodology of Sims (1980) is useful. This technique involves measuring unexpected changes

in monetary policy (the impulse) in month t and predicting the effect on employment and other variables in months t , $t + 1$, $t + 2$, etc. (the responses). Unexpected changes in monetary policy can be measured using unexpected changes in the federal funds rate, a method similar to that employed by Bernanke and Blinder (1992) and Christiano, Eichenbaum, and Evans (1994). The funds rate has often been used as the Fed's instrument in implementing monetary policy. Christiano, Eichenbaum, and Evans note that including an index of sensitive commodity prices along with variables such as GDP and the GDP deflator in a prediction equation for the funds rate produces a credible measure of monetary policy in that it is correlated in the expected way with variables such as bank reserves, real GDP, employment, and prices. Unexpected changes in the federal funds rate are calculated by regressing the funds rate on a constant, six lags of itself, six lags of aggregate industrial production growth, the inflation rate, the log of a commodity price index, the log of nonborrowed reserves, the log of total reserves, and the log of employment. The portion of the funds rate that cannot be predicted using these variables (the residual) is treated as the unexpected change in the funds rate. The predicted responses of employment and other variables to these funds rate shocks are then noted.²

Table 1 presents the employment responses by industry to a shock in the funds rate after 18 months. For all the industries examined the response peaked after 18 months. The two sectors that are most harmed are construction and durable goods. As discussed above, these are sectors that one would expect to be affected by monetary policy because they are interest sensitive. For construction, an unexpected increase in the federal funds rate of one standard deviation (equal to 0.55 percentage points) decreases employment after 18 months on average by 0.7 percent; for durable manufacturing, the shock decreases employment on average by 0.5 percent. (The following section will help put these response magnitudes in perspective by examining the changes in employment in these industries during the period of monetary contraction from 1979 to 1982.) Table 1 further indicates that employment in sectors such as nondurable goods, government, transportation, and mining is barely affected. Thus, contractionary monetary policy disproportionately affects employment in sectors such as construction and durable goods.

To shed further light on the types of workers affected by declines in these industries, a social accounting matrix (SAM) is useful. This brief uses the

Table 1 Impulse-Response of Sectoral Employment after 18 Months to One Standard Deviation Shock to the Federal Funds Rate

Sector	Response to One Standard Deviation Shock to FF	(Standard Error)
Construction	-0.00693**	(0.00235)
Durable goods	-0.00491**	(0.00169)
Retail trade	-0.00261**	(0.00076)
Wholesale trade	-0.00241**	(0.00080)
Finance, insurance, real estate	-0.00182**	(0.00070)
Services	-0.00151**	(0.00057)
Nondurable goods	-0.00110*	(0.00072)
Government	-0.00090*	(0.00054)
Transportation	-0.00086	(0.00085)
Mining	0.00070	(0.00307)

*Significant at the 10 percent level.

**Significant at the 5 percent level.

SAM constructed by Roland-Holst and Sancho (1992). Table 2 presents evidence concerning how a \$1 decline in output in the construction and durable goods sectors affects the income of different groups of workers.³ Non-union workers who are not covered by union contracts are harmed much more than union workers or other covered workers. Since workers in jobs not covered by union contracts are much more likely to be in low-income jobs, these results indicate that monetary policy disproportionately harms those on the lower tail of the income distribution. The table also indicates that urban workers are harmed more than rural workers; it appears that contractionary monetary policy can worsen the urban blight afflicting so many cities at present.

Gertler and Gilchrist (1994) use the impulse-response technique to investigate the differential effect of monetary policy on small and large firms. They classify firms as small if their total sales are below the 30th percentile for manufacturing firms. In their examination of several episodes of tightened monetary policy, they find that it reduces sales of small firms much more than sales of large firms and that small firms exhibit an asymmetric response to monetary policy but large firms do not. Small firms are harmed much more by contractionary monetary policy during recessions than they are helped by expansionary monetary

Table 2 Effect of a \$1 Decline in Sectoral Output on the Income of Various Socioeconomic Groups

Socioeconomic Group	Sector	
	Construction	Durable Goods
Union	-0.164	-0.130
Non-union, covered by union contracts	-0.017	-0.015
Non-union, not covered by union contracts	-0.612	-0.539
Rural	-0.030	-0.025
Urban	-0.807	-0.692

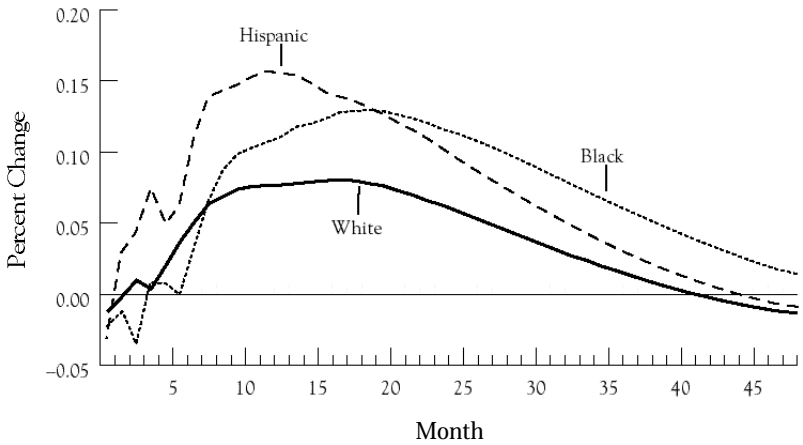
Source: David Roland-Holst and Ferran Sancho, "Relative Income Determination in the United States: A Social Accounting Perspective," *Review of Income and Wealth* 38 (1992).

policy during expansions. Gertler and Gilchrist's evidence thus confirms the expectation that small firms will bear a greater burden than large firms from contractionary monetary policy.

The impulse-response technique can also be used to investigate the effects of a monetary contraction on unemployment by race. Figure 1 shows the effect over time (48 months) of an increase in the federal funds rate of one standard deviation (equal to 0.55 percentage points) on unemployment disaggregated by race. After the contraction unemployment increases among all races, with the maximal effect for each racial category occurring between one and two years. The unemployment rate among whites rises on average by about 0.075 percentage points and the unemployment rate among Hispanics and blacks by about twice as much. (The following section will help put these magnitudes in perspective by examining the changes in unemployment by race during the period of monetary contraction from 1979 to 1982.)

The evidence above indicates that contractionary monetary policy reduces employment, with the burden falling disproportionately on minorities, low-income individuals, and those working for interest-sensitive industries and small firms. To investigate how such a decrease in employment affects the bond market, Coppock and Thorbecke (1997) examine how unexpected changes in employment affected Treasury bond returns. They find that news of higher employment depresses bond returns. To determine why, they examine what other assets are harmed

Figure 1 Change in the Unemployment Rate by Race over the 48 Months Following a Monetary Contraction (up to December 1992)



by news of strong employment. They find a strong and statistically significant relationship between an asset's exposure to inflation and monetary policy and the amount the asset's return falls following news of strong employment. Strong employment hurts stocks and bonds because it can cause inflation and because it can cause the Fed to tighten. For Treasury bonds Coppock and Thorbecke find that fear of inflation explains more of the fall in returns than concern about tighter monetary policy. Thus bond market participants would prefer that employment not be too high to prevent the risk of an overheating economy and inflation.

Further evidence that bonds would benefit from reducing inflation comes from several studies. Mishkin (1990) and Campbell and Amner (1993) show that long-term bond prices respond primarily to news about future inflation and that news of higher inflation pushes bond returns down. Thus contractionary policy that reduces inflation should produce large capital gains to bondholders over time.⁴

The Example of the Volcker Disinflation

These distributional effects of contractionary monetary policy can be seen by studying the clearest recent example of a disinflation, the period from 1979 to 1982, which economists call the "Volcker disinflation." In October 1979, with inflation exceeding 10 percent, Federal Reserve

Table 3 Percentage Change in Employment by Sector from September 1979 to the End of 1982

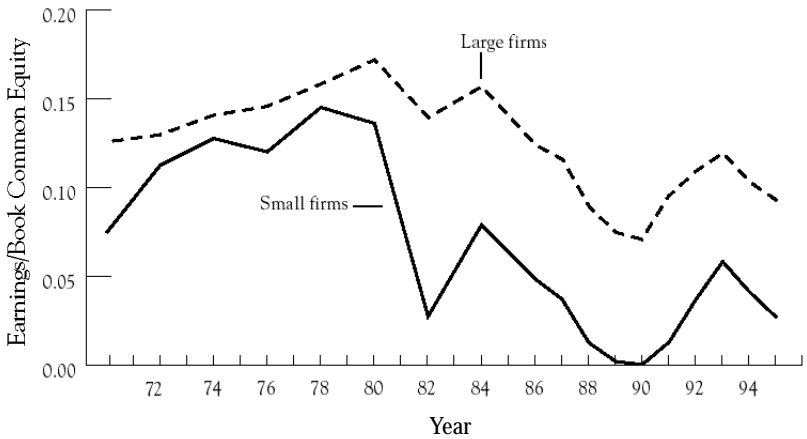
Sector	Percentage Change in Employment
Durable goods	-18.3
Construction	-14.6
Transportation	-3.1
Government	-1.3
Wholesale trade	-0.5
Retail trade	1.8
Nondurable goods	4.2
Mining	4.5
Finance, insurance, real estate	6.9
Services	11.0

Source: Haver Analytics data tape.

chairman Paul Volcker declared his commitment to fight inflation. He allowed the federal funds rate to increase 800 basis points. Long-term Treasury and corporate bonds both increased by about 500 basis points. These higher interest rates slowed the economy and contributed to two recessions, one in 1980 and one in 1981–1982. Finally, in late 1982, with unemployment at a postwar high of over 10 percent and inflation below 4 percent, the Fed eased on monetary policy. How was the burden of this disinflation shared across the economy?

Table 3 shows the percentage change in employment by sector from September 1979 to the end of 1982. Other things equal, employment should have increased over this period because the population increased and the size of the economy grew, but the table shows that employment in durable manufacturing was down 18 percent and employment in construction was down 15 percent. The sector that came next in percent decline was transportation, with a not very close 3 percent decline. Other sectors showed a minor decrease or a minor to moderate increase. Thus the brunt of the disinflation fell on workers in durable goods and construction.

Figure 2 shows earnings of small and large firms from 1970 to 1995. Following Fama and French (1995), firms are classified as small if the market capitalization of their stocks is below the median value for the New York Stock Exchange.⁵ Earnings of small and large firms are divided

Figure 2 Earnings of Small and Large Firms Divided by Book Common Equity

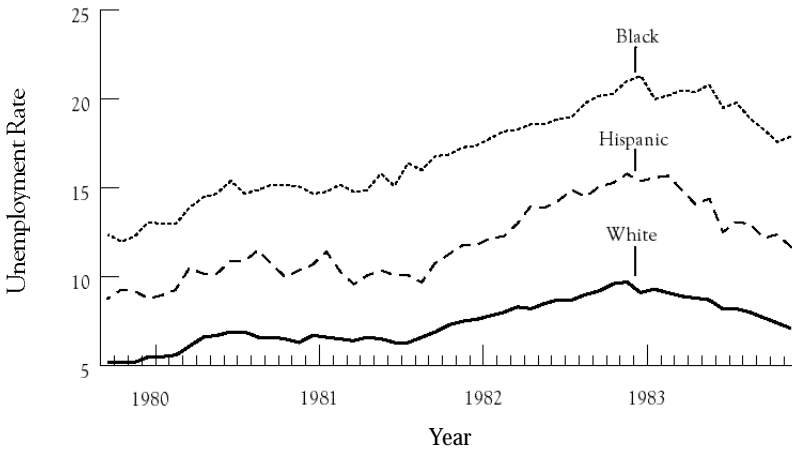
Source: Data to 1991, Eugene Fama and Ken French, "Size and Book-to-Market Factors in Earnings and Returns," *Journal of Finance* 50: 131–156. Data after 1991, Compustat data tape.

by the book values of the firms to make the two series comparable. Until 1981 profitability showed little relationship to firm size. However, during the 1981–1982 recession the profits of small firms declined much more than the profits of large firms. After the recession the earnings of large firms quickly recovered, but the earnings of small firms never neared pre-recession levels and remained at historically low levels. Thus small firms were harmed much more by the Volcker disinflation than large firms

Figure 3 shows unemployment by race from the middle of 1979 to the end of 1983. Black unemployment reached a high point of 21.2 percent, Hispanic unemployment hit 15.7 percent, and white unemployment remained below 10 percent. From October 1979 until unemployment peaked at the end of 1982, black unemployment increased 9.5 percent, Hispanic unemployment increased 7.1 percent, and white unemployment increased 4.5 percent. Minorities clearly paid a much higher price than whites for the reduction in inflation that occurred.

Bonds, on the other hand, soared as inflation went down. Inflation in 1981 was high, just short of 9 percent. In 1982, on the other hand, inflation fell below 4 percent. Long-term Treasury securities provided a total return in 1982 exceeding 40 percent. This annual return on Treasury securities was easily the highest ever. The wealthiest 10 percent of

Figure 3 Unemployment by Race during the Volcker Disinflation



households held almost 95 percent of all bonds and trusts in 1982 (Moore 1989; Niggle 1989). Thus, while lower-income individuals suffered disproportionately from the decrease in employment, the record return on bonds in 1982 yielded a huge windfall for the wealthy.

Policy Implications

The econometric results and the example of the Volcker disinflation present a consistent picture of how the burden of disinflationary policy is distributed: Employment in construction and durables decreases disproportionately; within these sectors income falls most for workers not covered by union contracts; minority unemployment increases twice as much as white unemployment; small firms' profits decline more than large firms' profits; and bond market investors gain. Disinflationary policy thus redistributes wealth from low-income families to high-income families. Would a further transfer in this direction, produced through contractionary policy, be desirable?

To answer this question it is useful to look at how income is distributed presently in the United States. Bradbury (1996) shows that for the poorest 10 percent of families real income declined almost 30 percent between 1973 and 1994, for the second poorest decile real income fell almost 20 percent, and it is not until the median decile that incomes increased at all.

The top four deciles, on the other hand, showed steady increases, with the largest increase (over 20 percent) going to the top decile. These results contrast with the period between 1947 and 1973, when all deciles experienced steady increases in wages of about the same size.

Given the economic difficulties facing lower-income families and the threat to our society that increasing inequality represents, engineering a disinflationary recession now would be inappropriate. Such a slowdown would burden low-income families, minorities, and interest-sensitive industries while providing a bonanza to fixed-income investors, who are primarily among the wealthy. A further redistribution to these investors from the poor could risk tearing the fabric of our society.

While disinflationary monetary policy would be deleterious at present, the danger that expansionary monetary policy will trigger inflation seems less now than in the past. Although unemployment has fallen to about 5 percent, inflation remains quiescent. In congressional testimony, Greenspan (1997) attributes the failure of unit labor costs and thus prices to increase as the economy expands to workers' willingness to accept lower wage increases in return for greater job security, partly due to their fears of job skill obsolescence. He cites other factors moderating pressures for wage and price increases such as international competition, the decline of unions, the deceleration of health care costs, and deregulation.

In the past the Fed sometimes applied the monetary brakes when employment grew more than expected. The fact that prices of assets harmed by contractionary monetary policy fell after news of strong employment growth (Coppock and Thorbecke 1997) indicates that Wall Street expected the Fed to tighten when employment expanded quickly. Prominent Fed watcher David Jones (1994) says that employment was Greenspan's favorite series to watch and that he was more inclined to tighten monetary policy when it grew quickly. The problem with restricting employment to fight inflation is that it forces low-income workers and minorities to pay the lion's share of the costs of controlling inflation. With these groups suffering and inflation risks low, now is an appropriate time to let the economy grow rather than limiting the amount employment can increase and unemployment can fall. As Joseph Stiglitz, former chairman of the Council of Economic Advisers, has said, allowing the jobless rate to remain low will particularly help workers such as inner-city blacks and people on welfare who have difficulty finding jobs (*Washington Post* 1997, D2).

Some people object that if the Fed were to come to be perceived as being less willing to tighten when employment increased, bond market participants would demand a larger inflation risk premium and push up long-term rates. While this argument may have some validity, it is not compelling for several reasons. First, by not raising short-term interest rates when there are signs of economic strength, the Fed could prevent a lot of the increases in longer-term rates (see Thorbecke 1996; Coppock and Thorbecke 1997). Second, the U.S. Treasury has recently issued inflation-indexed bonds, giving those concerned about inflation an instrument free of inflation risk. Third, if inflation did not materialize, investors would bid interest rates back down. Fourth, the Fed should not focus narrowly on the interests of the bond market but broadly on the interests of the country (see Blinder 1996). If it is determined that allowing unemployment to fall is a sensible policy, the Fed should follow that policy even if it displeases bond investors who would prefer zero inflation risk.

The combination of the facts that lower-income families are suffering in today's global economy and that risks of inflation are low indicates that rather than causing the economy to contract, the Fed should let it expand. Allowing employment to grow would disproportionately benefit individuals most at risk for shrinking income and unemployment. Although "testing the waters" by letting unemployment fall would involve some risk of price increases, the Fed would have ample time to contain any incipient inflation before it became embedded in wages and prices. Given that growing income disparity may endanger our ability to go forward together as a unified society, implementing policies that promote distributive justice and social cohesion is of particular moment.

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Notes

1. Greenspan's statement was made in his Humphrey-Hawkins testimony before Congress in July 1995. McDonough's statement was quoted in *The New Yorker*, October 16, 1995, p. 113.
2. Although standard errors are not always presented, the effects reported are statistically significant. Data on industrial production, the inflation rate,

commodity prices, the federal funds rate, total reserves, nonborrowed reserves, employment by industry, and unemployment by race were obtained from the Haver Analytics data tape. Since data on commodity prices were available from Haver beginning in January 1967, the sample period used to obtain the estimates in Table 1 was January 1967 to December 1995. Since data on unemployment disaggregated into white, black, and Hispanic categories were available from Haver beginning in March 1973, the sample period used to obtain the estimates in Figure 1 was March 1973 to December 1995.

3. The results are presented for white workers, but the same pattern holds for nonwhite workers.
4. It is true that disinflationary monetary policy that raises current and expected short-term interest rates can depress bond returns. However, Thorbecke (1996) found that bond prices also decline if bond market investors perceive that the Fed is too timid about raising interest rates to fight inflation. Further, the evidence of Campbell and Amner (1993) and Mishkin (1990) that bond prices are primarily driven by news of inflation implies that the benefit to bond market participants of disinflationary monetary policy over time outweighs the short-run costs of higher interest rates.
5. The data up to 1986 are taken from Fama and French (1995) and after that from the Compustat data tape. To facilitate interpretation, the data for small firms up to 1986 are the average of the two small firm series that Fama and French used and similarly the data for large firms are the average of the two large firm series they employed. Since earnings of small firms in both series fell precipitously in 1981–1982 and earnings of large firms in both series did not, taking averages in this manner should present an accurate picture of what happened to earnings during the Volcker disinflation.

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