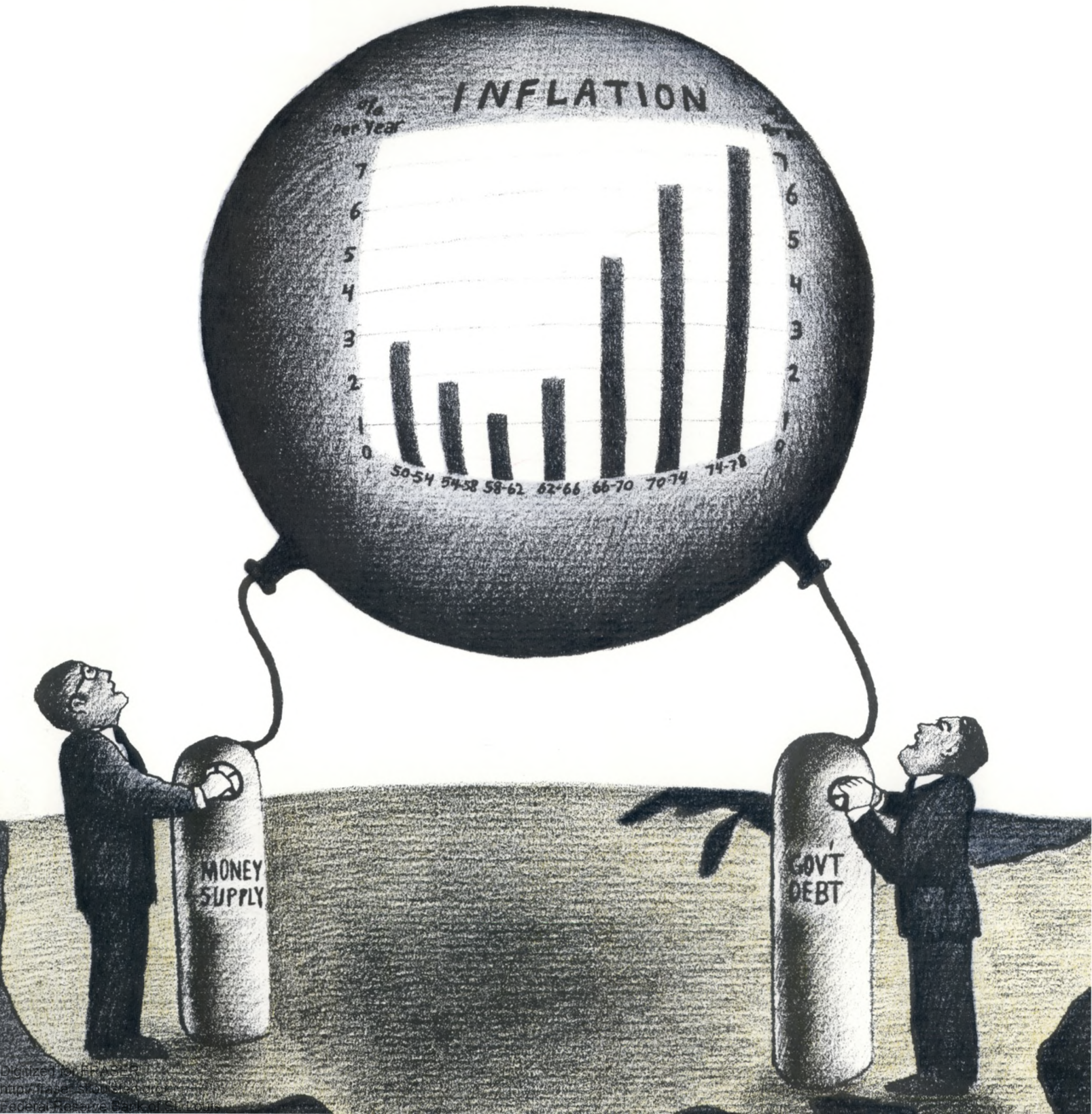
Eliminating Policy Surprises: An Inexpensive Way to Beat Inflation



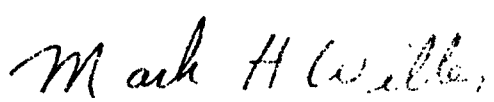
Eliminating Policy Surprises: An Inexpensive Way to Beat Inflation

Federal Reserve Bank of Minneapolis
1978 Annual Report

Last year our *Annual Report* contained an article that characterized the "rational expectations" approach to macroeconomics as a challenge to established views of policymaking. The preface of that article stated that the theory of rational expectations had profound implications for the conduct of monetary policy.

During the last year, while serving as a voting member of the Federal Open Market Committee, I have tried to apply the theory of rational expectations to policymaking. In participating in the debate on how best to eliminate inflation in the United States, I have argued that the cost of fighting inflation through the use of tighter macroeconomic policies has been greatly overstated by forecasts from traditional models. These models assume that decision makers are irrational—i.e., that they can be fooled for long periods of time by changes in policy. But if in fact decision makers are rational, then restrictive policy actions, when implemented properly, can lower inflation without severely disrupting the economy. The efficiency with which decision makers process information ultimately determines the costs of fighting inflation with tighter macroeconomic policies.

The followig article extends the 1977 *Annual Report*. After providing an analysis of the policies previously used to cope with inflation, policies we believe were seriously flawed. we propose that the monetary and fiscal authorities continue the efforts they began last fall to decrease the rate of growth of money and government debt gradually but steadily. Given the much underestimated ability of the public to adjust to such actions, we believe that this policy can eventually eliminate inflation in the United States without high costs in terms of output and unemployment.



Mark H. Willes
President
Federal Reserve Bank of Minneapolis

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Eliminating Policy Surprises: An Inexpensive Way to Beat Inflation

Most economic analysts believe that inflation could be fought by lowering the rate of growth of money and cutting the federal budget deficit. They feel that this would slow real economic growth and, in turn, ease inflation by lowering capacity utilization rates in plants and factories and by causing higher—perhaps significantly higher—unemployment.

Some analysts argue in favor of such an anti-inflation plan because they feel it's necessary even if it causes more unemployment. Others think that higher unemployment is so undesirable that the government should fight inflation by imposing economic controls on wages, prices, or credit.

In the last two decades, inflation in the United States has been fought with abrupt cuts in money and debt growth that reduced real economic activity. Inflation slowed in response to these policies, but because unemployment rose substantially these policies were soon abandoned. In order to achieve a permanent reduction in inflation, policymakers must avoid politically intolerable rises in unemployment. To do this in today's political and economic environment, cuts in money and debt growth must be gradual and announced well in advance.

What policymakers must do to fight inflation effectively, in other words, is to eliminate, whenever possible, surprises in monetary and fiscal policies. They must build a set of policies that the public has faith in and will take into account when forming expectations of future inflation and spending. In short, policy must be credible. And the only way to make policy credible is to announce it, implement it faithfully, and avoid shifting it abruptly.

Why Policy Surprises Are Costly

The concept of a policy surprise is important because policies affect real economic activity principally through surprises. This point can be illustrated most easily with an example that ignores some of the complexities of the world we live in. Although this example is simplified, making it more complex or more like the real world would not change the conclusions. Suppose that existing wages and their rate of growth were established in contract negotiations between firms and workers, negotiations that were undertaken in the belief that the inflation rate would remain constant because the monetary authority

would keep the growth of money unchanged. Putting aside uncertainties from sources other than the government, labor contracts would allow wages to grow at a rate equal to the rate of productivity growth plus the expected rate of inflation.

Now suppose that the monetary authority considers the inflation rate too high and unexpectedly decides to reduce the growth of money. This lowers the growth rate of aggregate demand, and businesses, in order to maximize profits, must raise prices more slowly than they had expected. They soon find it in their best interests to lay off some workers, because each worker produces the expected amount of goods, but the goods now have lower market value than expected and bring in less revenue than was expected when wage rates were established. In effect, marginal workers are priced out of their jobs.

As a result of the surprise policy change, the economy has achieved a lower inflation rate. But production, employment, personal income, and profits are also lower. (See boxed material below for a more formal discussion of the effect of policy surprises on output and prices.)

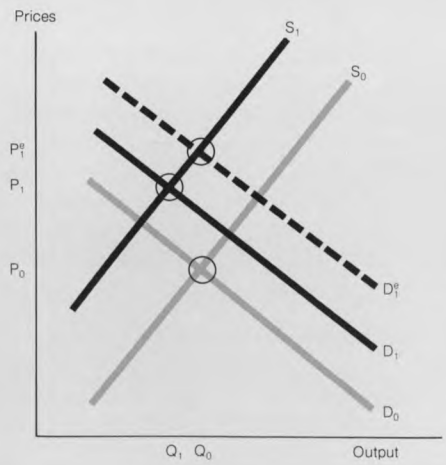
Once the policy change is recognized, an adjustment process begins. Since there are workers without jobs and since the inflation rate is lower than previously expected, newly negotiated labor contracts specify slower wage growth. Marginal workers, who had been laid off, return to their jobs as their wages no longer outstrip the value of their output. Aggregate output then returns to its original level. That is, after the policy change is recognized, the system adjusts. It regains its initial level of economic activity and real income, but price and wage increases become smaller.

How Policy Surprises Affect Output and Prices

Adjustment to a policy surprise is illustrated in the chart below. The curve D_0, the aggregate demand curve, represents the output demanded by consumers, investors, and government at each price level before the surprise policy change. The curve S_0, the aggregate supply curve, represents the output supplied by all producers at each price level before the surprise policy change. The price level is P_0 and output is equal to Q_0.

Before the surprise policy change, private decision makers were expecting aggregate demand to rise to D_1^e. Wage contracts were settled that called for wage increases just sufficient to maintain real purchasing power, that is to push the aggregate supply curve—or what is the same thing, the economy's cost curve—to S_1. If the surprise policy change did not occur, prices would rise to P_1^e and output would remain at Q_0.

But when the surprise policy comes and the slower growth of money takes effect, aggregate demand rises less than expected, to D_1. Prices, as a result, rise more slowly than expected, reaching P_1 instead of P_1^e. This slower growth in prices, however, lowers the value of the output of workers. In fact, for all workers the value of output is less than expected when wage contract settlements were reached. And for many marginal workers, this value is below their wage costs. Some workers are laid off and output falls to Q_1.



If firms and laborers were able to anticipate the monetary authority's decision to reduce the rate of money growth, inflation would slow without higher unemployment or lower output. The temporary rise in unemployment and shortfall in output could be avoided if the monetary authority announced well in advance that money growth was going to be reduced and if people believed this announcement. Firms and workers could then negotiate appropriate wage contracts. They could agree to clauses that permit money wages to be adjusted in order to keep real wages constant. Or they could negotiate the growth in their money wages, taking into account the new and lower money supply growth and the new rate of inflation. It is in their own best interests to do this. If they don't, they make their labor too expensive and encourage firms to lay them off.

Fighting Inflation with Surprise Policy Changes: The Last 15 Years

The theory that surprise policy changes affect the economy quite differently than well announced, well understood policy changes does much to explain the accelerating inflation in the United States during the last 15 years. During this period, as Figure 1 shows, there have been three times when inflation was considered rapid enough to call for restrictive monetary and fiscal policies. The first was in 1966, the second in 1968-69, and the third in 1973-74.[1] But as the figure also shows, these actions were abruptly initiated and abruptly discontinued.

Perhaps because they were so abrupt, these actions seemed to be surprises. In the spring of 1969, for instance, a leading forecasting service commented that the restraints considered by government policymakers (retention of the 1968 tax surcharge, strict monetary policy, repeal of the investment tax credit, increases in Social Security taxes, and cuts in expenditures) were "highly unlikely." But what was judged unlikely turned out to be what happened. Again, at the beginning of 1974, a time when the economy was at a standstill as the result of past restrictive policies and the OPEC oil shock, many forecasters expected the Fed to permit faster growth of money, which in turn would allow short-term interest rates to edge down. As before, this assessment of how policymakers would behave was off the mark—money growth was further slowed and interest rates rose to record highs at midyear. If these policy changes were surprises, as seems likely, then they contributed to the losses in employment and production that subsequently developed.

The attempts of 1968-69 and 1973-74 to abruptly check the growth of aggregate spending and thereby lower inflation were partially successful. Rates of inflation, responding after a lag to the restrictive policies, declined as desired. Almost simultaneously, however, production slipped lower and unemployment rose. These effects were sufficiently prolonged and extensive for the periods December 1969 through November 1970 and November 1973 through March 1975 to be designated recessions.

Reacting to the high unemployment that preceded these recessions, policymakers changed direction again. They tried to stimulate spending with expansive policies. As Figure 1 indicates, they did this just before or, at the latest, just after the recessions. The changes in policy reflected their concern over declines in production and employment, but ironically their previous policy changes had contributed to these declines, at least to the extent that the changes were surprises.

The surprise reversals of policy—from checking to stimulating aggregate demand—helped to revive production and make the economy grow. Each time policy became expansive, however, it did so before inflation could drop to its preceding cyclical low, as shown in Figure 2. In no case did inflation return to its starting level, even when monetary and fiscal policies were supplemented with wage and price controls in 1971. With each cycle the economy moved further from the goal of price stability.

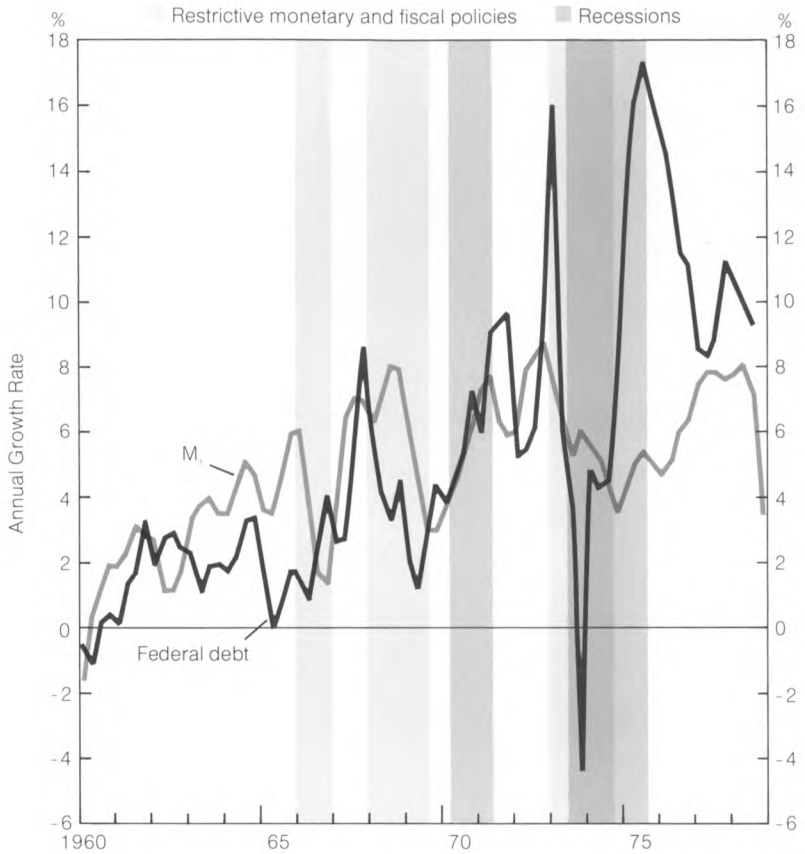
A Fundamental Fallacy

Virtually all economists would agree that tighter macroeconomic policies can lower inflation. (See page 5 for a discussion of the relationship between money, government debt, and inflation.) But based on past experience, many believe that even a modest cut in the government budget deficit or in money growth would cause massive unemployment or long periods of slow economic growth and high unemployment. Such beliefs are based on a confusion. Because labor markets often have not adjusted immediately to surprise policy actions, some observers believe that any policy action aimed at cutting money growth and the federal budget deficit will produce high unemployment, no matter how it is implemented. They seem to assume that labor markets adjust very slowly, if at all, to changes in policy.

If restrictive policies were pursued and were somehow kept as surprises, it would take many years of high unemployment to bring the inflation rate down to zero. But this is not very plausible. A new permanent policy can

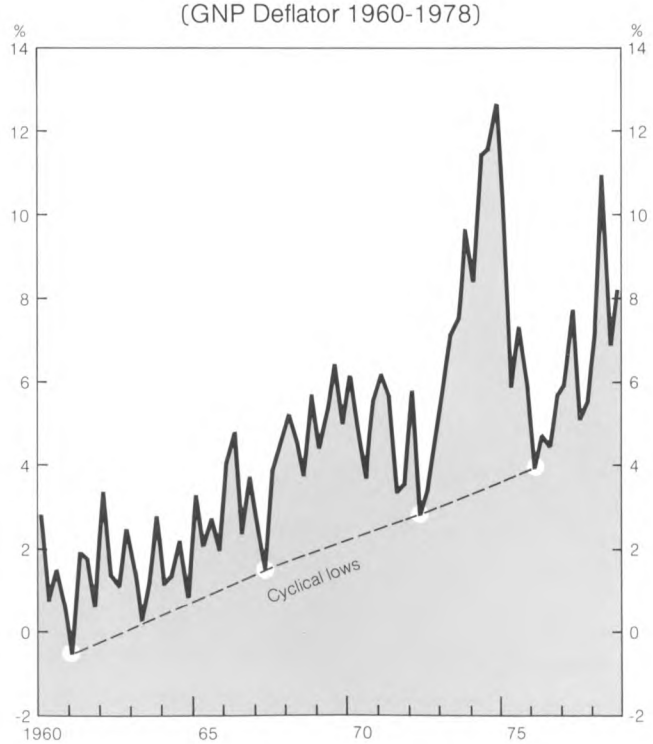
[1] The behavior of prices was, of course, a concern at other times, including 1971 when mandatory price and wage controls were set in place. However, it was only in these periods that government policies were attempting purposively to curb aggregate demand in order to slow the rise in prices. All three periods were preceded by years in which policy had been expansionary. And in 1973-74, the inflation stemming from past expansionary policy was aggravated by the release of mandatory controls, permitting increases in previously suppressed wages and prices, and by the quadrupling of oil prices by OPEC.

Figure 1. Growth of Money and Federal Debt*
1960-1978



*Money is a 3-quarter moving average of M_1. Federal debt is a 3-quarter moving average of the total interest-bearing federal public debt.

Figure 2. Rate of Inflation
(GNP Deflator 1960-1978)



be a surprise year after year only if people can be fooled for very long periods of time and if their expectations of future inflation are based exclusively on the policies and economic circumstances of an earlier period.[2]

In reality, when policy changes, decision makers' expectations change. Their expectations are based not just on past inflation rates but on all available information, including information on new policies or new anti-inflation programs. Their expectations must change when policy changes if people do indeed behave as economists for the last 200 years have said they behave—in their own best interests. When people believe that money growth or

[2]For example, Paul A. Anderson of the Federal Reserve Bank of Minneapolis used a prominent econometric model to simulate what would happen if the money growth rate doubled permanently. He then asked the model to compare price expectations used in the model over a three-year period with the actual performance of prices over that same period. In the model, expectations were way off. For the three-year period, according to the model, people would not even begin to respond accurately to the increased inflation. Their estimates of inflation would stray further and further from the actual performance of prices and would begin to improve only in the fourth year. See "Rational Expectations: How Important for Econometric Policy Analysis?" *Quarterly Review*, Federal Reserve Bank of Minneapolis (Fall 1978).

Growth in Money and Government Debt Fuel Inflation

Economic policymakers have repeatedly lauded the twin goals of high employment and stable prices mandated by the Employment Act of 1946. But macroeconomic policies, particularly during the last 15 years or so, have produced a steady acceleration in the rate of inflation in the United States. As shown in the chart below, this surge in inflation has generally been accompanied by an increase in the rate of growth of money (M_1, or currency plus demand deposits) and in the outstanding stock of U.S. government securities.

During the past two decades a heated and sometimes divisive debate has taken place between different schools of economists on whether and how much money matters in the economic system. Economists now generally agree that monetary growth is a key determinant of the rate of inflation. They continue to disagree about how rapidly an increase in money works to increase prices and on the channels through which it works, but not about its importance to the behavior of prices.

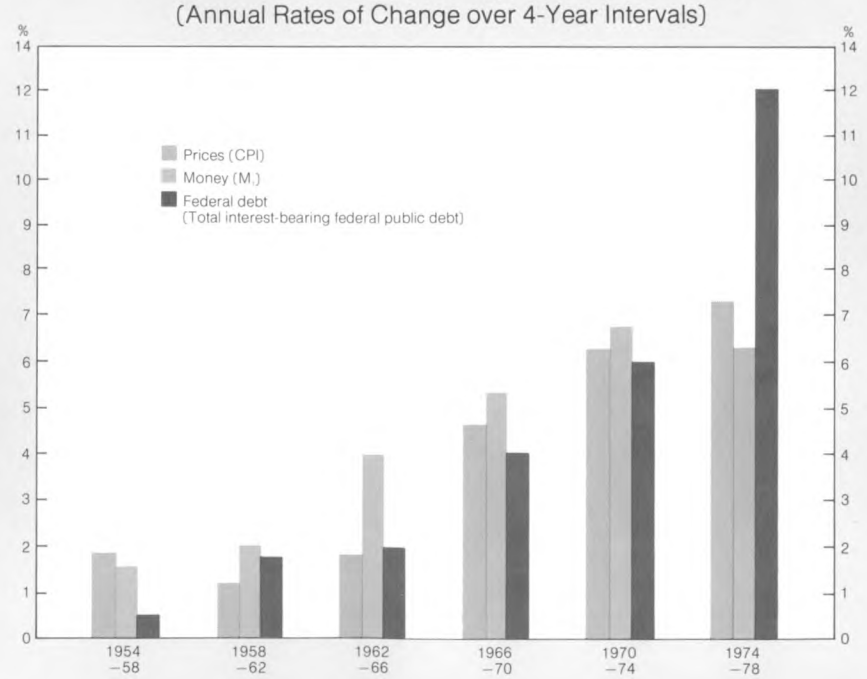
In addition to money growth, deficit financing by the federal government can also increase aggregate spending and drive prices higher. Whether or not it does depends in part on whether the debt is retired in the future. If it is, then taxes will have to be increased to pay the interest and repay the principal. Rational individuals, taking account of these future tax obligations, will alter their consumption and savings plans enough to retire the debt. In this case, aggregate demand will be unaffected by the temporarily increased deficit.

But the case is quite different when the new government debt is not to be retired—when it is a permanent addition to the outstanding stock of securities. The only worry for individual taxpayers then is interest on the debt. But interest payments simply transfer purchasing power from taxpayers to bondholders; they do not change aggregate demand. Thus, if the debt is not expected to be retired, aggregate spending will rise. This will push prices higher.

This point has significance for our current problems. Since fiscal 1960 the federal government has operated with a budget surplus (unified basis) in only one year, 1969. The surplus amounted to a little over $3 billion. However, the cumulative sum of deficits in the other years since 1960 comes to over $350 billion. Under current budget plans, there is no prospect of a surplus until fiscal 1982. In view of this, it is conceivable that much of the increase in federal debt in recent years has been viewed as having a low probability of retirement and has thus made a direct contribution to the nation's inflation problem.

The Growth of Prices, Money, and Federal Debt

(Annual Rates of Change over 4-Year Intervals)

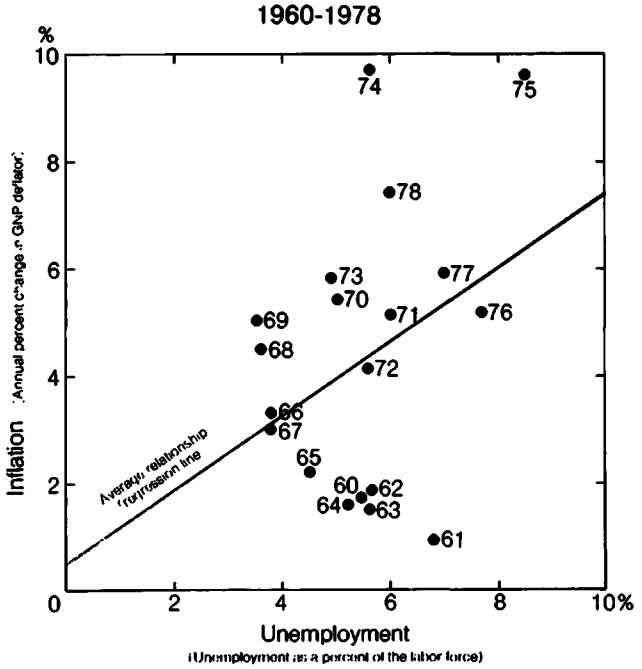


inflation rates have changed, they will not be acting in their own best interests to ignore this when negotiating wage contracts. A firm could lose money if it ignored a new economic policy, because the policy affects the wages it must pay its workers and the prices it can charge for its products. Workers could price themselves out of their jobs if they assume that inflation is going to be higher than it turns out to be and bargain for high wage settlements. On the other hand, if workers assume that inflation is going to be lower than it turns out to be and bargain for low wage settlements, they could find that their incomes, when adjusted for inflation, are falling.

The data suggest that people are not naive about permanent policy changes. In the United States from 1960 to 1978, as Figure 3 shows, there appears to be no trade-off between inflation and unemployment. This is consistent with the theory that people are not fooled for long periods by changes in policy. Indeed, the relationship between inflation and unemployment appears to be the opposite of what many people have claimed. Higher inflation tends to be associated with higher, not lower, unemployment. Apparent trade-offs have existed only for short periods of time, as might be expected if people temporarily failed to perceive a shift in the course of macroeconomic policy.

As shown in the figure, increases in inflation were generally associated with a decline in unemployment

Figure 3. Inflation and Unemployment
1960-1978



during the first half of 1960. During the 1960s money growth accelerated and a sizable budget deficit began to emerge. After the many years of virtual price stability in the 1950s, this shift in policy probably came as a surprise to most market participants and helped to boost output and lower unemployment. But after a short while, when the basic policy change was presumably recognized, wage demands began to adjust. Thus, in the late 1960s and early 1970s when inflation rose, unemployment generally rose.[3]

The correlation of inflation and unemployment over the last two decades suggests that labor markets do, in fact, react to basic changes in macroeconomic policies. According to Figure 3, once a change in policy and the resulting inflationary consequences are understood, labor markets adjust. If history is any guide, this means that if more stimulative policies are expected, then we should get more inflation and more unemployment. Conversely, if tighter policies are expected, we should get less of each. Gains can thus be made against inflation without incurring the high costs of increased unemployment.

Needed: A Credible Macroeconomic Policy

A policy of gradually slowing money growth and reducing the federal budget deficit can lower and, ultimately, eliminate inflation in the United States. (See discussion on page 7.) There are compelling political or psychological reasons that the steps should be gradual. In the years since World War II, macroeconomic policy has been characterized by stop-and-go actions and by many surprises. On the basis of this experience, many observers doubt that government has the will to change and to persist patiently in a sequence of announced, gradual steps to achieve price stability. To these skeptics, as well as others who may not fully understand the new policy approach and its implications, the change in approach will come as a surprise.

If it does surprise some people, then real costs will arise, at least during the early steps of the new approach. In fact, large changes could shock the economy and cause a recession. A serious recession could lead, as in the past, to the abandonment of attempts to bring inflation under control. For this reason, it is essential that the initial steps be small. Of course, if people for some reason believed that the government was going to take the

[3]Part of the reason for this relationship is that average unemployment rates have risen during the last two decades as the labor participation rates of women and teen agers, who have traditionally experienced higher than average unemployment rates, have risen. Also, the liberalization of income maintenance programs has tended to raise average unemployment rates. The 1974-75 points are especially high because they were influenced by the OPEC price hike and the dismantling of price controls.

monetary and fiscal steps necessary to control inflation and if they were not restricted by previous contracts, then even the initial steps could be made large without causing a shock or a recession.

Once the program of gradually slowing growth in aggregate demand has begun and the government has unambiguously demonstrated its determination to carry it out, the costs of the program will decline. When the new approach is well known and understood, then even large steps will not lead to higher unemployment. As surprises gradually disappear, so will the high costs of fighting inflation with macroeconomic policies.

Inflation Can Be Eliminated Without Creating High Unemployment

A gradualist policy scenario is illustrated in the accompanying chart, where U_F represents the "full employment" unemployment rate. The economy is initially at point P_0, experiencing inflation equal to i_0 and an unemployment rate equal to U_F.

Then a small contractionary change of policy occurs. When this first step is taken—money supply growth is cut or the deficit is reduced or both—the economy moves to the point P_1. Unemployment rises because the public does not anticipate the change in policy. But after the policy change occurs, at least some of the public are persuaded that future announcements of tighter policy ought to be taken more seriously. Once workers recognize and act upon the new policy steps, then inflation and unemployment can be reduced simultaneously.

When the second step—a further gradual tightening of policy—is announced and then implemented, workers begin to lower their demands for wage increases. When they do this, they are acting in their own best interests. If they do not lower their wage demands, they will make labor too expensive and workers will be laid off. The anticipated tightening of policy thus lowers not only inflation but unemployment, since firms can afford to hire more workers when wages are rising less rapidly.

Subsequent steps to tighten policy result in further decreases in inflation and unemployment as labor market participants adjust their wage demands to reflect the lower rate of inflation. Fewer and fewer workers are now priced out of their jobs. Eventually, the point P_4 is achieved. At this point, the economy once again has full employment but at a much lower rate of inflation. Because an ever-growing share of the labor market comes to recognize the consequences of the new policy, the cost of significantly lowering inflation is modest and short-lived.

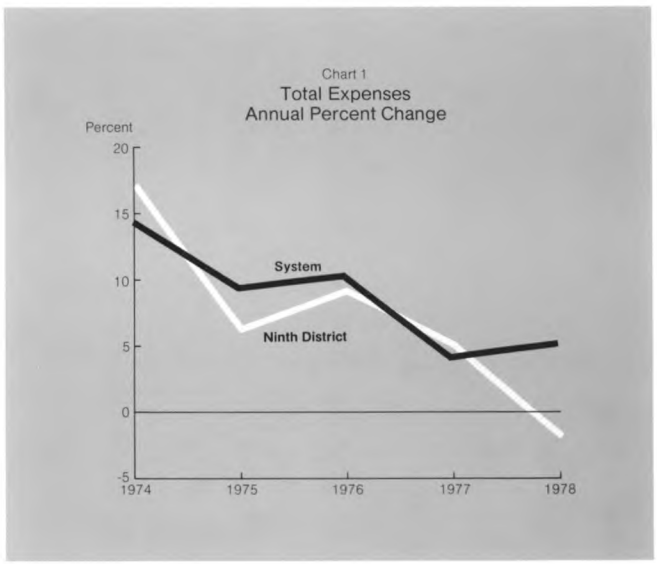
Alternatively, if labor markets do not adjust at all, the sequence of policy steps described above will produce the series of points P_1, Q_1, Q_2, and Q_3. This is the process that critics of tighter macroeconomic policies have in mind when they argue that it is too expensive to fight inflation with these policies.

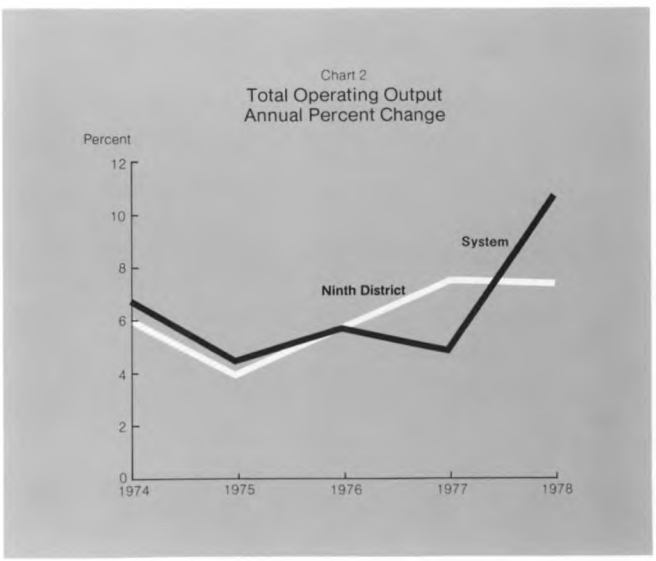
However, all the evidence indicates that firms and workers will recognize the implications of a policy change for their own markets. They will learn and they will adjust. Even skeptics will find it in their best interests to modify their economic behavior to reflect the changed environment. Adjustments in wage demands will occur, and the mistakes made by the public that can be attributed to a misperception of government policy will become less and less important. As a result, the later policy steps in the sequence do not involve substantial unemployment, since the steps are properly anticipated by decision makers.

1978 Performance

Nineteen hundred and seventy-eight was a year of exemplary operating performance for the Federal Reserve System in general and the Federal Reserve Bank of Minneapolis in particular. Ninth District 1978 operating expense of $28.1 million represents a *2.1% reduction from 1977 levels*—the first time in our history that we have experienced an actual year-to-year expense reduction. This decrease in expenses was accomplished in spite of a 7.3% increase in measurable outputs (e.g., checks, currency and coin, and securities processing), expansion of supervision and regulation activities, expanded legislated responsibilities in the area of consumer affairs, and general price level increases.

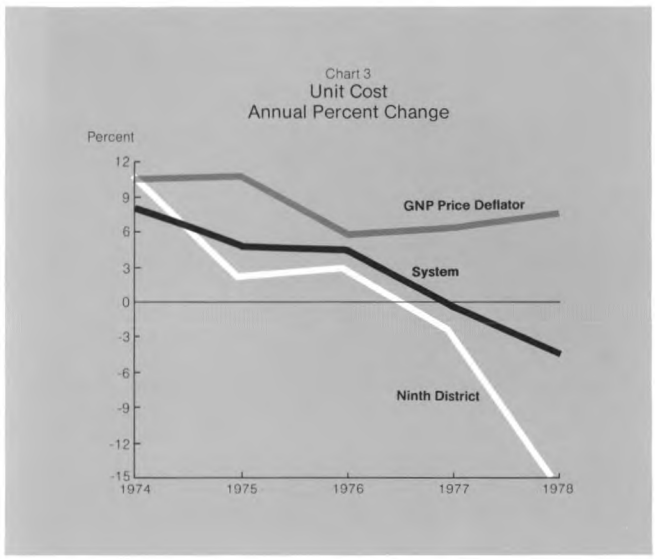
The accompanying charts illustrate some of the factors which contributed to this performance. As the charts indicate, 1978 did not really represent an exception but rather a continuation of favorable trends in expenses, productivity and unit costs over the past five years. The first two charts (charts 1 and 2) deal with expense and measurable output trends since 1973. Over this time period, total expenses in the Ninth District increased by an average of 6.8% per year while measurable output increased 6.0% per year. For the Federal Reserve System as a whole, total expenses have increased on average by 8.6% per year while measurable output has increased 6.4% per year.

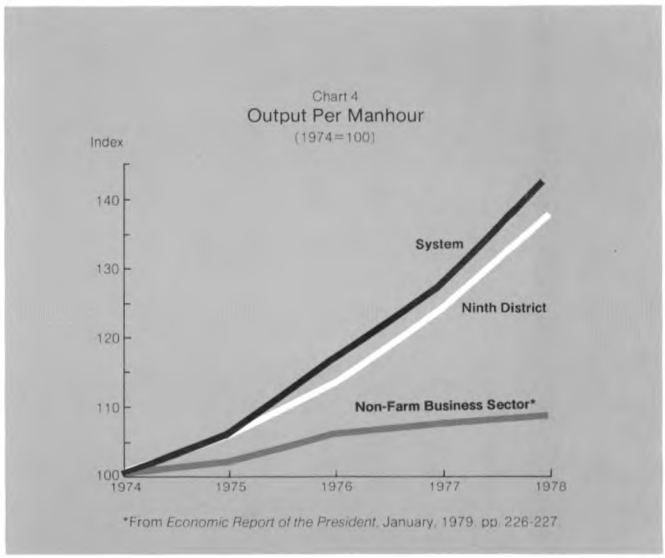


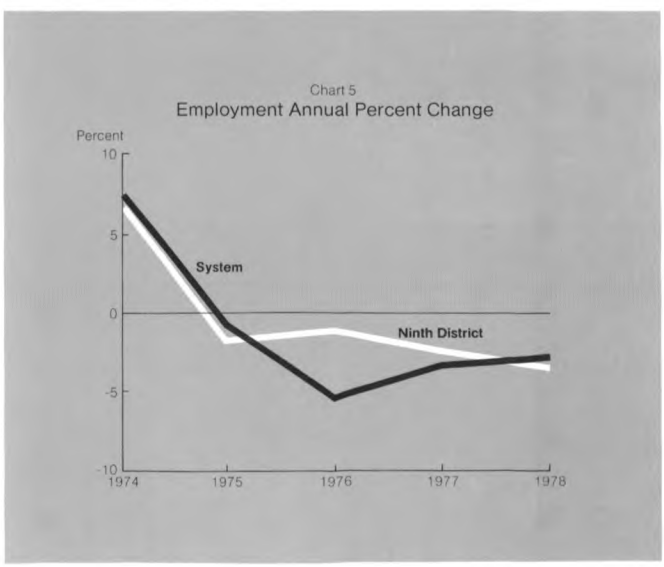


Unit cost performance (chart 3) has been even more favorable. Approximately 80% of System expenditures are incurred in areas where there are measurable outputs. Expense growth in these areas has been even less than total expense growth, averaging 5.4% per year for the Ninth District and 8.4% for the System. This, coupled with the growth in output, has resulted in Ninth District 1978 weighted average unit costs being 2.3% below 1973 levels for an average decline of 0.6% per year. Although showing a decline for 1978, average unit costs for the System have increased at the rate of 1.9% per year since 1973. Since the GNP price deflator has increased at an average rate of 7.9% per year, real dollar unit costs have decreased by approximately 33% for the Ninth District and 25% for the System over the period 1973 through 1978.

Increases in productivity (chart 4) have been a prime contributor to unit cost performance. Output per manhour has increased 37.8% since 1974 for the Federal Reserve Bank of Minneapolis and 41.5% for the System. This compares with a productivity gain of 7.4% over the same time period for the non-farm private business sector. Decreases in total employment in each of the last four years (chart 5) have resulted in 1978 employment levels falling below 1973 levels for both the Ninth District and the System.







Statement of Condition

(In Thousands)

December 31	1978	1977
Assets		
Gold Certificate Account	$ 231,177	$ 225,007
Interdistrict Settlement Fund	(435,146)	12,659
Special Drawing Rights Certificate Account	28,000	25,000
Coin	11,182	9,109
Loans to Member Banks	10,250	900
Securities		
Federal Agency Obligations	189,477	195,940
U.S. Government Securities	2,627,263	2,470,538
Total Securities	2,816,740	2,666,478
Cash Items in Process of Collection	802,060	572,661
Premises and Equipment—		
Less Depreciation of $8,217 and $7,009	30,992	30,468
Other Assets	101,654	47,206
Total Assets	$3,596,909	$3,589,488
Liabilities		
Federal Reserve Notes	$1,854,810	$1,999,312
Deposits		
Member Bank Reserve Accounts	866,328	720,178
U.S. Treasury—General Account	182,605	276,165
Foreign	6,081	7,995
Other Deposits	7,638	12,772
Total Deposits	1,062,652	1,017,110
Deferred Availability Cash Items	559,983	482,400
Other Liabilities	51,384	29,206
Total Liabilities	3,528,829	3,528,028
Capital Accounts		
Capital Paid In	34,040	30,730
Surplus	34,040	30,730
Total Capital Accounts	68,080	61,460
Total Liabilities and Capital Accounts	$3,596,909	$3,589,488

Earnings and Expenses

(In Thousands)

For the Year Ended December 31	1978	1977
Current Earnings		
Interest on Loans to Member Banks	$ 2,379	$ 521
Interest on U.S. Government Securities and Federal Agency Obligations	200,243	162,187
All Other Earnings	377	336
Total Current Earnings	202,999	163,044
Current Expenses		
Salaries and Other Benefits	16,299	15,674
Postage and Expressage	3,135	2,952
Telephone and Telegraph	585	577
Printing and Supplies	944	949
Real Estate Taxes	1,521	1,577
Furniture and Operating Equipment—Rentals, Depreciation, Maintenance	1,505	1,679
Depreciation—Bank Premises	873	1,567
Utilities	489	461
Other Operating Expenses	1,815	1,745
Federal Reserve Currency	992	1,549
Total Current Expenses	28,158	28,730
Less Expenses Reimbursed or Recovered	1,942	1,910
Net Expenses	26,216	26,820
Current Net Earnings	176,783	136,224
Net Profit (or Loss)	(18,252)	(4,766)
Less:		
Assessment for Expenses of Board of Governors	1,596	1,383
Dividends Paid	1,921	1,777
Payments to U.S. Treasury	151,704	126,158
Transferred to Surplus	$ 3,310	$ 2,140
Surplus Account		
Surplus, January 1	$ 30,730	$ 28,590
Transferred to Surplus—as above	3,310	2,140
Surplus, December 31	$ 34,040	$ 30,730

Volume of Operations*

	Number		Dollar Amount	
For the Year Ended December 31	1978	1977	1978	1977
Loans to Member Banks	987	326	$1.4 billion	$591 million
Currency Received and Verified	148 million	147 million	1.3 billion	1.2 billion
Coin Received and Counted	637 million	613 million	87 million	83 million
Checks Handled, Total	718 million	649 million	263 billion	212 billion
Collection Items Handled	.3 million	.3 million	2.2 billion	2 billion
Issues, Redemptions, Exchanges of U.S. Government Securities	9.2 million	8.9 million	81.1 billion	57.7 billion
Securities Held in Safekeeping	523,772	478,720	2.5 billion	2.1 billion
Transfer of Funds	1,001,192	898,176	941 billion	762 billion

*Minneapolis and Helena combined.

Directors of the Federal Reserve Bank of Minneapolis

January 1979

Term expires December 31 of indicated year

Stephen F. Keating
Chairman and Federal Reserve Agent

William G. Phillips
Deputy Chairman

Class A – Elected by Member Banks

Nels E. Turnquist (1979)
President
National Bank of South Dakota
Sioux Falls, South Dakota

James H. Smaby (1980)
President
Commercial National Bank & Trust Company
Iron Mountain, Michigan

Donald L. Scothorn (1981)
President
First State Bank
Stevensville, Montana

Class B – Elected by Member Banks

Warren B. Jones (1979)
Secretary-Treasurer & General Manager
Two Dot Land & Livestock Company
Harlowton, Montana

Donald P. Helgeson (1980)
Vice President and Secretary
Jack Frost, Inc.
St. Cloud, Minnesota

Russell G. Cleary (1981)
Chairman and President
G. Heileman Brewing Co., Inc.
La Crosse, Wisconsin

Class C – Appointed by Board of Governors

Sister Generose Gervais (1979)
Administrator
Saint Marys Hospital
Rochester, Minnesota

Stephen F. Keating (1980)
Vice Chairman
Honeywell, Inc.
Minneapolis, Minnesota

William G. Phillips (1981)
Chairman
International Multifoods
Minneapolis, Minnesota

Member of Federal Advisory Council

Richard H. Vaughan (1979)
President & CEO
Northwest Bancorporation
Minneapolis, Minnesota

Directors of the Helena Branch

Patricia P. Douglas, Chairman
Norris E. Hanford, Vice Chairman

Appointed by Board of Directors
Federal Reserve Bank of Minneapolis

Lynn D. Grobel (1979)
President
First National Bank
Glasgow, Montana

William B. Andrews (1980)
Chairman
Northwestern Bank of Helena
Helena, Montana

Jase O. Norsworthy (1980)
President
The NRG Company
Billings, Montana

Appointed by Board of Governors

Norris E. Hanford (1979)
Wheat and Barley Operator
Fort Benton, Montana

Patricia P. Douglas (1980)
Vice President-Fiscal Affairs
University of Montana
Missoula, Montana

Officers of the Federal Reserve Bank of Minneapolis

as of January 1979

Mark H. Willes, President
Thomas E. Gainor, First Vice President

Leonard W. Fernelius, Senior Vice President
Roland D. Graham, Senior Vice President
John A. MacDonald, Senior Vice President
John D. Paulus, Senior Vice President

Melvin L. Burstein, Vice President
and General Counsel
Lester G. Gable, Vice President
Gary P. Hanson, Vice President
Bruce J. Hedblom, Vice President
Douglas R. Hellweg, Vice President
Howard L. Knous, Vice President
and General Auditor
David R. McDonald, Vice President
Clarence W. Nelson, Vice President
Robert W. Worcester, Vice President

Sheldon L. Azine, Assistant Vice President
and Assistant Counsel
James U. Brooks, Assistant Vice President
Marilyn L. Brown, Assistant Vice President
John P. Danforth, Assistant Vice President
Richard K. Einan, Assistant Vice President
Phil C. Gerber, Assistant Vice President
Richard C. Heiber, Assistant Vice President
William B. Holm, Assistant Vice President
Ronald E. Kaatz, Assistant Vice President
Preston J. Miller, Assistant Vice President
Michael J. Pint, Assistant Vice President
and Assistant Secretary
Ruth A. Reister, Assistant Vice President
and Secretary
Charles L. Shromoff, Assistant Vice President
Colleen K. Strand, Assistant Vice President
Richard B. Thomas, Assistant Vice President
Joseph R. Vogel, Chief Examiner

Officers of the Helena Branch

John D. Johnson, Vice President

Ronald O. Hostad, Assistant Vice President
Betty J. Lindstrom, Assistant Vice President