

FEDERAL RESERVE BANK OF DALLAS

1990 ANNUAL REPORT



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The

The Federal Reserve Bank of Dallas is one of 12 regional Federal Reserve Banks in the United States. Together with the Board of Governors in Washington, D.C., these organizations form the Federal Reserve System and function as the nation's central bank. The System's basic purpose is to provide a flow of money and credit that will foster orderly economic growth and a stable dollar. In addition, Federal Reserve Banks supervise banks and bank holding companies and provide certain financial services to the banking industry, the federal government and the public.

Since 1914, the Federal Reserve Bank of Dallas has served the financial institutions in the Eleventh District. The Eleventh District encompasses approximately 360,000 square miles and comprises the state of Texas, northern Louisiana and southern New Mexico. The three branch offices of the Federal Reserve Bank of Dallas are in El Paso, Houston and San Antonio.

L E T T E R F R O M
B O B B Y I N M A N A N D
B O B B O Y K I N



As we prepare to relinquish the leadership of the Federal Reserve Bank of Dallas, we would like to pause a moment and reflect on the turbulent decade of the 1980s in this District and pay tribute to our dedicated employees, who served this Bank and the region so well. The details of what came to be known as the "Texas Banking Crisis" are well-known, and the key roles played by our examiners and other professionals in the bank supervision function are readily apparent. Less appreciated, probably, is the role that the employees in all offices of the Bank played in containing the crisis and preventing it from reaching systemic proportions.

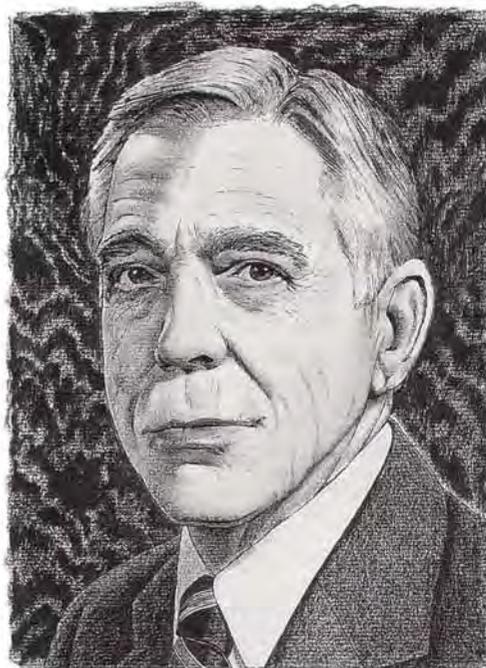
One can easily imagine the explosion in the workload of the members of our staff working directly or indirectly in the administration of the discount window. New and different problems required unique and innovative solutions as the crisis reached proportions not seen since the 1930s. Yet, the absence of systemic repercussions is a testament to the talents and skills of those involved, professionals and non-professionals alike, as well as to institutional safeguards resulting from the earlier crisis. The Dallas Fed truly faced and passed the challenge of acting as "lender of last resort."

What may not be imagined so easily, however, is the degree to which enormous burdens were also placed on the backroom operations of the Dallas Fed—the extent to which we were also called upon to act as "processor of last resort." Correspondent–respondent relationships began to break down as each sought protection from perceived risks, and existing clearing arrangements were threatened. Our offices were called upon not only to handle increasing volumes of transactions but to do so in an environment of rapidly changing relationships in a climate of risk and uncertainty. These operational challenges, lasting several years, affected virtually every department and unit of this Bank. We are truly grateful to all our employees for the exemplary manner in which they met the challenges, and we are proud of their service to our region and our country.

Our departure comes during a period of transition, not only for this Bank but also for the nation and its financial system. The country has entered what we hope will be a mild and shallow recession, which, nevertheless, has the potential to threaten the incipient recovery in this region. The "Texas Banking Crisis" no longer looks so local or so unique as other regions experience the patterns that became familiar to us several years ago. We hope the knowledge and experience gained by this Bank can benefit others and help mitigate the impact of what has now become a national problem.

As our own service draws to a close, we wish Hugh Robinson and Bob McTeer all the best as they take on the new challenges of the 1990s. We expect that the dedicated directors and employees of the Federal Reserve Bank of Dallas will serve as well during their tenure as they did during ours.

On December 31, 1990, Adm. Bobby R. Inman, U.S. Navy (retired), completed almost seven years as a director of the Federal Reserve Bank of Dallas, the last four years as chairman of the board. On January 31, 1991, Robert H. Boykin retired from the Bank after more than 37 years of service, the last 10 years as president and chief executive officer.



Robert H. Boykin

L E T T E R F R O M
H U G H R O B I N S O N A N D
B O B M C T E E R



Hugh H. Robinson

*W*e would like to take this opportunity to

thank Bob Boykin and Bobby Inman for their many years of leadership of the Federal Reserve Bank of Dallas during what was probably its finest hours. We were, indeed, fortunate to have at the helm these two leaders at a time when cool heads and steady hands were so crucial. We would also like to join them in their praise and appreciation of the performance of all our employees in all our offices during the turbulent 1980s.

As we look to the future, we find that not all the challenges are behind us. The national economy is in a recession of unknown depth and duration. The thrift crisis lingers, and the banking industry remains fragile. Fundamental financial reform is imperative, especially in the area of deposit insurance but in other areas as well, including the regulatory structure. We have no specific reform program to put forward at this time, but we believe strongly that the Federal Reserve should continue to play a major role in bank supervision, not only as a necessary adjunct to its conduct of monetary policy but also because of its roles as both lender and processor of last resort, as described in the accompanying letter from Admiral Inman and Bob Boykin.

The financial history of this region in the 1980s reminds us again of the importance of a central bank with a strong regional presence and operational role. Disruptions in the payments system, as well as contractions in the means of payment, can threaten the financial structure that supports our economic well-being. Our regional operations were an important element in preventing the banking situation from causing these types of disruptions. We too hope that what this Bank has learned can benefit others that may experience similar pressures in the months and years to come.

With the above in mind, one of the Bank's objectives in the coming years is to continue our research into the nature and causes of our financial crisis and possible lessons and implications for others and for future reform. Another goal we have for the Bank is based on an opportunity for the future rather than a review of the past—that is, the prospect of a historic free trade arrangement with Mexico. By virtue of our geography

as well as our interests, we hope that this Bank can be a leader in exploring North-South trade issues and make a contribution toward freer trade with our neighbors to the South.

Our experience in the 1980s was a reminder not only of the importance of a strong regional presence and operational role for our “decentralized central bank” but also of the importance of private-sector participation and the absence of political pressures. Central bank independence is crucial to the long-run health of any economy. That independence can be threatened both by those who consciously wish to thwart it and by institutional arrangements and circumstances as well. Just as a benevolent deposit insurance system could help undermine market discipline among banks and thrifts—almost unnoticed over a period of years—so too can a monetary system burdened by growing budget deficits and government debt undermine the independence of the central bank in its conduct of monetary policy. The accompanying essay in this report addresses this concern.

As we move into the 1990s, we look forward to serving the institutions and the people of the Eleventh Federal Reserve District.

On January 1, 1991, Maj. Gen. Hugh G. Robinson, U.S. Army (retired), assumed the chairmanship of the board of directors of the Federal Reserve Bank of Dallas, after serving as a director for six years. Robert D. McTeer, Jr., became president and chief executive officer of the Dallas Fed, effective February 1, 1991.



Robert D. McTeer, Jr.

T W O
T Y P E S O F
P A P E R:
T H E
C A S E
F O R
F E D E R A L
R E S E R V E
I N D E P E N D E N C E



F

rom 1948 to 1970, our nation's federal budget

deficit averaged less than \$1 billion annually, only once exceeding \$10 billion. Deficits of the 1970s seemed to dwarf those of the previous era, averaging nearly \$30 billion, with a high of \$59 billion in 1975. More recent deficits, however, dwarf even those of the 1970s. Federal budget deficits of the 1980s averaged more than \$142 billion, and estimates now point to deficits of more than \$300 billion in the near-term fiscal years of the 1990s.

When government runs a budget deficit, there are two types of paper that can finance that deficit. One type is interest-bearing paper, known as government debt and issued by the U.S. Treasury. The other is non-interest-bearing paper, known as money or currency and issued by the central bank.¹ Creating money—or, in effect, printing currency—is the cheapest way to finance deficits from a government fiscal standpoint because currency does not bear interest. Currency creation, however, causes *inflation*, which transfers resources involuntarily from the private sector to the federal government.

This essay argues that central bank independence is more important today than at any time in history. Because fiscal incentives for inflation grow as government debt grows and in view of the huge run-up in government debt

in the 1980s, with prospects for continued growth in the 1990s, we believe that the principal mission of our nation's central bank is at risk.

Created to operate independently within government, the Federal Reserve has as its principal mission the provision of a stable medium of exchange for the nation—a stable money.² This is accomplished by the establishment of currency and by the control of money's value, which, in turn, is accomplished by controlling money's supply.

The central bank's job of limiting the expansion of money, however, becomes much more difficult in an environment where the volume of paper of the other type—debt—is large and expanding. As government debt builds, the fiscal benefits from inflation build, creating ever-greater pressure for the monetary authority to inflate.

Our aim in this essay is to provide a convincing case for the view that the *power to spend money* and the *power to print money* must be separate and independent powers within government. We believe that the separation of the money-spending and money-printing powers within government is essential to the efficient production and allocation of resources in society. The principal point is that in order to continue to control inflation in the United States, the independence of the Federal Reserve must be preserved.

*T*he power to

spend money and

the power to

print money

must be separate

and independent

powers

within government.



*Federal Reserve's
principal mission is
to provide a
stable medium
of exchange.*

Our case begins with the premise that inflation is a monetary phenomenon. Economists disagree on many propositions. But the one proposition on which economists perhaps most widely agree is that excessive money creation is the root cause of inflation.

Inflation is rising prices, but a price is simply the number of pieces of paper—Federal Reserve notes, or money—that it takes to buy a good. The greater the volume of money relative to goods in the economy, the greater is the price of goods. Inflation results, therefore, when the volume of money in the economy grows too fast relative to the volume of goods and services.

Evidence from 79 countries over the post–World War II period shows that when money growth is high, inflation is also high (*Chart 1*).³ The data thus attest to the premise that excessive money growth causes inflation.

EASY MONEY DOES NOT AID ECONOMIC GROWTH

Although excessive money creation causes inflation, one argument often given in favor of expansionary monetary policy—or “easy money”—is that easy money aids economic growth. Economists have not reached a consensus on this issue, but few would claim that money growth can provide any *lasting* or long-run boost to economic growth.

Economic growth is rising real income, or real earnings; but money *printed* is not money *earned*. That is to say, the mere act of printing money does not, in and of itself, change the amount of goods and services available in the economy, nor does it have any lasting influence on an economy’s potential to produce additional goods and services. Lasting real income growth can occur only when citizens—using their minds, hands, tools, and technology—work together to produce a greater volume of goods and services. While the creation of a national currency and a monetary and banking *system* can facilitate this process, the excessive creation of money leads only to unstable prices—that is, to inflation.

Evidence from 79 countries over the post–World War II period shows no generally positive relationship between a country’s rate of real economic growth and its rate of money creation (*Chart 2*). Real income growth tends to center in the range of 3 to 5 percent across countries, and countries with higher rates of real income growth do not generally tend to be those with higher rates of money expansion. A more careful look, in fact, would show that as inflation rises, it can actually lead to a reduction in output and employment.

INFLATION DISRUPTS THE PRODUCTION AND ALLOCATION OF RESOURCES IN SOCIETY

Economists have extensively studied how inflation can affect economic well-being and have reached considerable agreement.⁴ Because inflation's effects are well-documented, we will not attempt to prove them here.

Among its most widely cited effects, inflation has the tendency to arbitrarily wipe out the value of income saved in the form of money, and it shifts real wealth from creditors to debtors. There are other consequences as well. Inflation can lead to a *reduction* in employment and output. Inflation transfers resources to the public sector, allowing the government to be larger than it otherwise would be while reducing the purchasing power of the private sector. Inflation can lead to an inefficient utilization of an economy's productive resources and to an incorrect mix of production in society. In short, inflation disrupts the production and efficient allocation of resources in society.

WHAT, THEN, IS BEHIND MONEY GROWTH?

Broad-based evidence supports the view that while money growth and real economic activity are generally unrelated, money growth causes inflation. Why, then, don't more central banks across the world simply set money growth at rates that lead to no inflation? Such a policy would provide price stability, similar to that experienced in Japan and Germany. The answer, most assuredly, lies in government budget deficits and the way they are financed.

Chart 2

Average income growth and currency growth in 79 countries

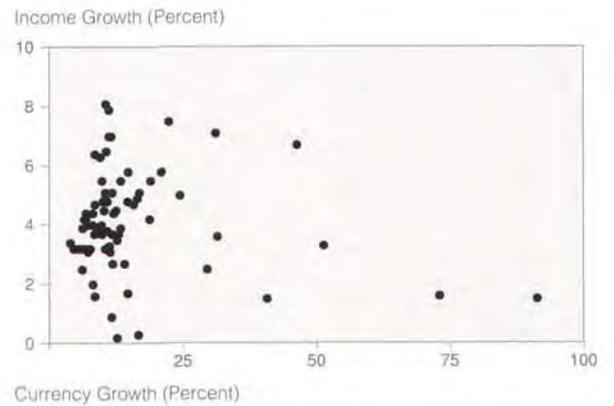
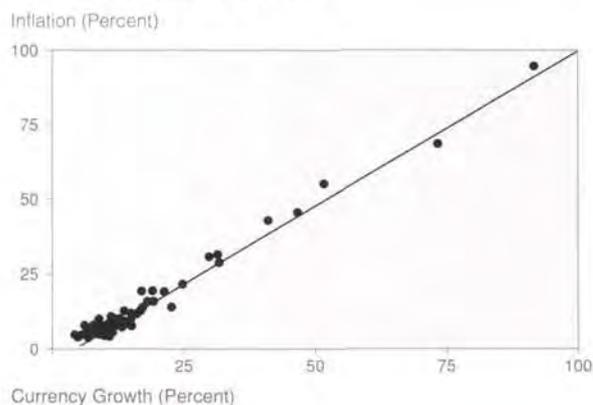


Chart 1

Average inflation and currency growth in 79 countries



*G*overnment budget
 deficits require
 the creation of
 government paper—
 debt or money.

Government expenditures can be divided into two broad categories: government purchases (such as social spending, military spending, education outlays) and interest on outstanding government debt. The government finances these expenditures in basically two ways: by taxation and by borrowing (*Chart 3*).

By definition, government runs a budget deficit when expenditures exceed tax receipts. The government funds the deficit by sales of debt to the private sector. But here's where money creation enters the picture. The central bank can decide to allow all of the increase in the public debt to remain outstanding, or it can "monetize" a portion of the deficit by, in effect, printing currency and purchasing government debt.

To illustrate the implications of this choice, consider the example of a \$150 billion U.S. budget deficit (*Chart 4*). Because government expenditures exceed tax receipts, the Treasury sells \$150 billion of newly created government securities to the private sector, and government debt thereby increases initially by this amount. The Federal Reserve chooses to respond by purchasing on the open market, say, \$30 billion of government securities, using for this purchase \$30 billion of newly created Federal Reserve notes (that is, currency). On net, then, Treasury paper in the economy rises by \$120 billion, and Federal Reserve paper rises by \$30 billion. Two types of paper are created as a result of the deficit.

GOVERNMENT BUDGET DEFICITS ARE FINANCED BY CREATING DEBT AND MONEY

Government budget deficits require the creation of government paper. The central bank cannot determine the total volume of government paper—money *plus* debt—in the economy because the central bank doesn't determine the size of the deficit. However, the central bank can and ultimately does determine the extent to which government paper in the economy is debt *or* money. This is done by central bank exchanges of government debt for money—commonly referred to as open market operations.

What determines a central bank's choice of how much money to create? Can't the central bank simply conduct monetary policy independently of fiscal deficit or debt considerations? That is, can't money growth simply be restricted to the rate called for to control inflation, regardless of the tax, spending, and debt policies of government? To answer these questions, it is important to uncover the fiscal benefits from inflation—specifically, how money creation lowers the cost to governments of running deficits.

HOW GOVERNMENTS BENEFIT FROM INFLATION

Governments derive fiscal benefits from easy monetary policy and from its implied inflation in several ways. One of the more common claims is that easy monetary policy makes the real economy stronger and thereby boosts the tax base, so as to reduce the fiscal deficit. As argued earlier, however, easy money does not provide any lasting or long-run boost to economic growth. We, therefore, place no reliance on this claim in demonstrating how governments benefit from inflation.

More important, and often ignored, are three other basic incentives that the fiscal authority has for the central bank to inflate: First, inflation erodes the real value of outstanding government debt. Second, central bank purchases of government debt lower the government's net interest obligation because the interest on government debt purchased by the central bank is returned to the government. And third, purchases of government debt by the central bank tend to lower the real interest rates at which this debt is financed. These inducements for inflation can be strong; yet, they are typically either overlooked or not fully appreciated by many citizens. Let us, therefore, explore each of them more completely.

Chart 3

Budget of government



Chart 4

A \$150 billion deficit and how it is financed: A hypothetical example





Excessive

money creation

is the root cause

of inflation.

Inflation erodes the real value of outstanding government debt. First, governments benefit from easy monetary policy because inflation erodes the real value of outstanding government debt. Given today's \$2.3 trillion outstanding stock of public debt, 10-percent inflation, for example, would erase \$230 billion in real government obligations annually (*Chart 5*). This is in contrast to a fiscal benefit of just \$52 billion from 10-percent inflation in 1980 and a fiscal benefit of only \$26 billion in 1974. Thus, the fiscal benefits from inflation from this source have increased greatly in recent years.

Easy money returns more interest payments back to the Treasury. A second incentive that governments have for the central bank to adopt a looser monetary stance and to inflate pertains to the matter of interest payments on outstanding government debt. When the central bank purchases government debt, the interest payments on that debt return to government. For all intents and purposes, the government no longer has an interest obligation on government debt bought by the central bank.

The Federal Reserve returns to the Treasury virtually every dollar of interest earned on holdings of government securities (*Chart 6*). Indeed, Federal Reserve reimbursements to the Treasury totaled \$264.7 billion over the period 1947–90, and Federal Reserve interest earnings on government securities totaled \$260.5 billion—reflecting virtually complete reimbursement to the Treasury of Federal Reserve interest earnings.⁵ Thus, the creation of money by the Federal Reserve lowers the government's interest obligation.

Easy money lowers the real interest rate paid on government debt. Government's third incentive for the central bank to adopt an easier monetary stance relates to the matter of interest rates paid on government securities. To the extent that the central bank can lower the interest rates on government debt through the purchase of this debt, the government benefits from a reduction in the debt's interest burden. Though not unanimously accepted among economists, there is evidence that the real funding cost to the Treasury—that is, the real interest rate on government securities—is directly related to the stock of government debt in the economy and inversely related to the stock of money in the economy.

The Federal Reserve increases the quantity of money through open market operations. In essence, the Federal Reserve's open market operations replace government debt with newly issued currency, thereby decreasing the amount of government debt relative to money in the economy. By the same token, open market operations, by reducing government debt outstanding, decrease the amount of government debt relative to gross national product

(GNP). Declines in either ratio benefit the government with lower real funding costs; that is, there is a noticeable correlation between either ratio and the real interest rate on government debt (*Chart 7*). In this way, an easier monetary policy would further reduce the cost to government of financing its deficits.

In addition to the real interest rate effect caused by the substitution of money for debt, the government's interest costs are reduced because active central bank participation in government bond markets increases the marketability and liquidity of government debt. In so doing, the central bank enhances the attractiveness of owning government debt, which makes investors willing to accept a lower interest return relative to that of other investments. This liquidity effect reinforces the desirability, from the government's point of view, of central bank monetization of government debt.

Chart 7

Debt-to-money ratio, debt-to-GNP ratio, and the real interest rate

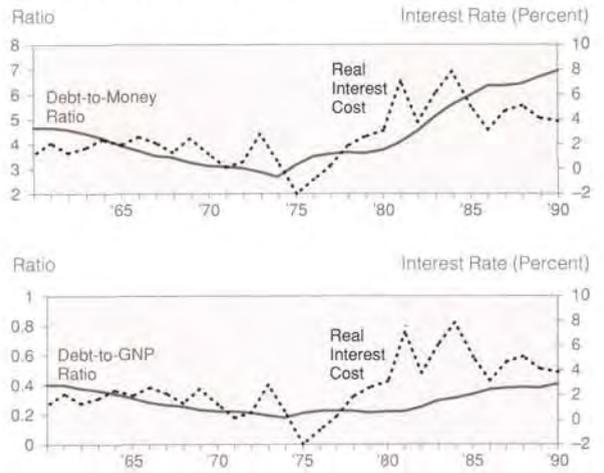


Chart 5

Outstanding government debt

Billion Dollars

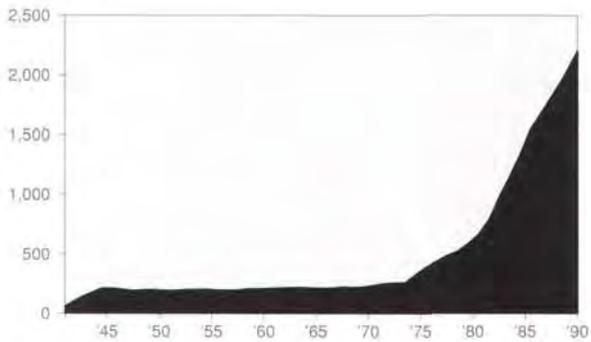
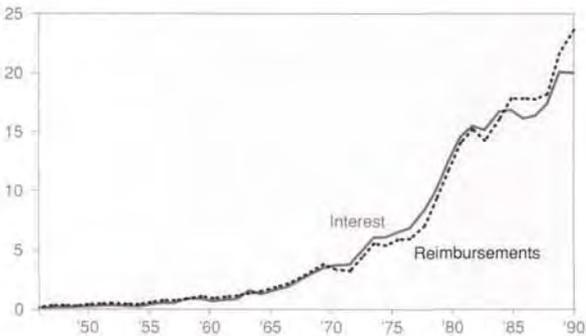


Chart 6

Interest earned on government securities versus Fed reimbursements to the Treasury

Billion Dollars



WHAT DO RECENT FISCAL POLICIES IMPLY
FOR GOVERNMENT'S INCENTIVES TO INFLATE?

*When
central bank
independence is high,
inflation is generally low.*

We have argued that an inflationary monetary policy lowers the cost that governments face for continually running budget deficits. A reason, then, why more central banks across the world don't simply set money growth so as to have no inflation is that there are fiscal benefits—benefits that accrue to the fiscal authorities—from a looser monetary policy and the central bank is often obliged or even pressured—directly or indirectly—to help solve the government's fiscal problem. Such pressures can be exhibited in a variety of ways: through legislation or constitutional provisions that mandate the pursuit of fiscal objectives by the central bank, through participation of fiscal agents in monetary policy-making at the central bank, or through such subtle means as the central bank attempting to hold down interest rates in the face of a rising public debt.⁶

In our own nation, with recent huge increases in budget deficits and an expanding public debt, we believe that the fiscal pressures for inflation have intensified.

BUDGET DEFICITS OF THE 1980S WOULD HAVE PRODUCED
SUSTAINED DOUBLE-DIGIT INFLATION

To get some idea of just how great the fiscal pressures for inflation have been recently, it is useful to consider three hypothetical monetary policies—policies that the Federal Reserve could have followed over the period 1980–90. We emphasize that these are policies that the Federal Reserve *could* have followed to help fund the fiscal budget deficits and ease the Treasury's financing burden:⁷

POLICY A: *Maintain the economy's ratio of government debt to money.*

POLICY B: *Maintain the economy's ratio of government debt to GNP.*

POLICY C: *Monetize a constant share of the fiscal budget deficit.*

The first two policies are important to consider because either might have helped hold down the increase in real Treasury interest rates during the 1980s and thereby might have reduced the Treasury's funding costs.

The third policy we consider is one in which the Federal Reserve continued to monetize government budget deficits in the 1980s to the same degree as previously—say, from 1950 to 1979. For the 30-year period before 1980, the Federal Reserve monetized, on average, roughly 36 percent of budget deficits, the remaining 64 percent being financed by increases in private holdings of public debt. During the 1980–90 period, however, Federal Reserve monetization of deficits fell to only 11 percent (*Chart 8*).

Under these policies, three distinctly different price paths would have occurred over the 1980–90 period—all significantly higher than actual experience (*Chart 9*). Had the Federal Reserve continued to monetize roughly 36 percent of the deficit (policy C), the fiscal deficits of the period would have led to inflation rates averaging nearly 13 percent for the decade, with a peak inflation rate of more than 21 percent in 1982 and 1983. Had the Federal Reserve, instead, acted to maintain the economy’s stock of debt relative to money at its level at the end of the 1970s (policy A), inflation would have averaged more than 10 percent for the period, reaching a peak of 16 percent in 1981. And had the Federal Reserve tried to avoid a rising debt-to-GNP ratio (policy B), the fiscal deficits would have implied an average of more than 9-percent inflation for the period, with a high of 17 percent in 1982.

Chart 9

Actual and simulated prices

Index, 1982 = 100

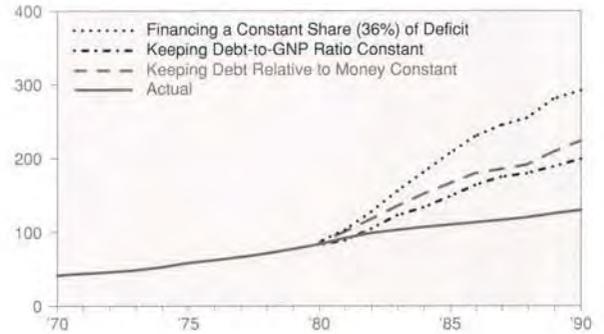
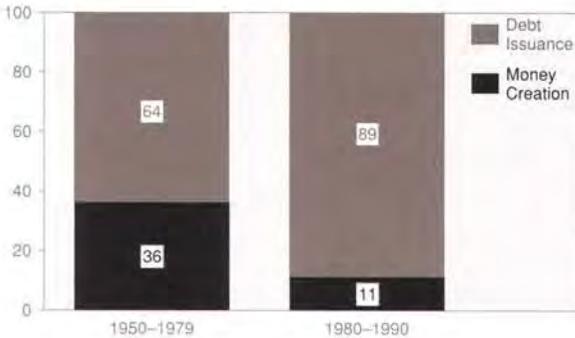


Chart 8

Monetization of the deficit

Percent



THE FISCAL PRESSURE FOR INFLATION CONTINUES
TO BUILD AS GOVERNMENT DEBT BUILDS



o control

inflation in the

United States,

the independence of the

Federal Reserve

must be preserved.

What the Federal Reserve actually did over the past decade was to pursue none of these hypothetical policies but a comparatively independent monetary policy—which resulted in slower money growth than under any of the alternatives. And inflation for the period averaged only 4½ percent. This result was accomplished by the Federal Reserve adopting a path for the supply of money that did not mirror the path of government debt (see *Charts 5, 7, and 8*). The Federal Reserve did not monetize the huge increases in government debt and, consequently, did not impose double-digit rates of inflation on the economy. But because of the refusal to monetize the fiscal budget deficits, their legacy is still with us today in the form of a huge stock of outstanding government debt. The pressure for the Federal Reserve to inflate still exists and, indeed, continues to build as government debt swells.

IS THERE A WAY OUT?

Do fiscal deficits oblige the central bank to inflate? Evidence from 17 OECD countries for the period 1973–86 indicates that there tends to be no clear relationship between a country's inflation rate and its deficit-to-GNP ratio (*Chart 10*).⁸ The Netherlands and Belgium, for example, have relatively high deficit-to-GNP ratios but have relatively low rates of inflation, while Norway and Finland have relatively low deficit-to-GNP ratios but have relatively high inflation rates. What, then, enables some countries, but not others, to have low inflation rates despite high deficits?

THE ANSWER IS CENTRAL BANK INDEPENDENCE

The answer, we believe, lies in the degree of central bank independence.⁹ The evidence points to a clear correlation between central bank independence and inflation (*Chart 11*). When central bank independence is high, inflation is generally low. But when the central bank is more tied to the fiscal objectives of government, higher inflation typically results.

CENTRAL BANK INDEPENDENCE

IS THE KEY TO CONTROLLING INFLATION

The conclusion we come to is straightforward. Central bank independence is the key to controlling inflation. Within government, the agency controlling the printing press must not be the same one making out the budget. The people who print money and those who spend it must not be the same, and institutional arrangements must be carefully constructed to keep both groups at arm's length. The conclusion, we believe, is clear:

Money creation is one way of paying for a fiscal budget deficit.

Money creation is the cheapest, most expedient way to pay, as viewed from the standpoint of governments.

Money creation, however, causes inflation. In fact, it is through inflation that governments' fiscal benefits largely accrue.

The fiscal incentives and pressures for inflation grow as budget deficits rise and government debt builds.

And government debt in the United States has escalated sharply in recent years.

Thus, the independence of the Federal Reserve within government is more essential than ever if inflation is to be kept under control.

Chart 11

Average inflation and central bank independence in selected countries

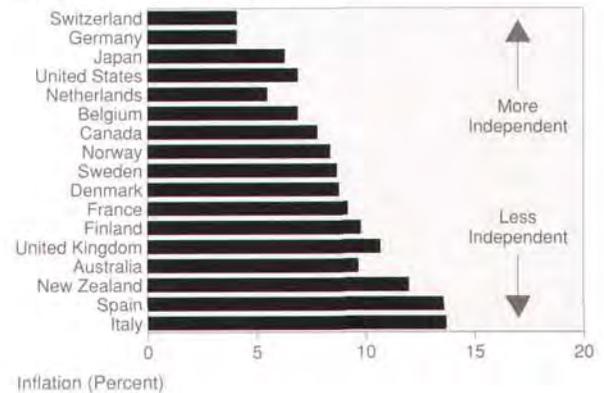
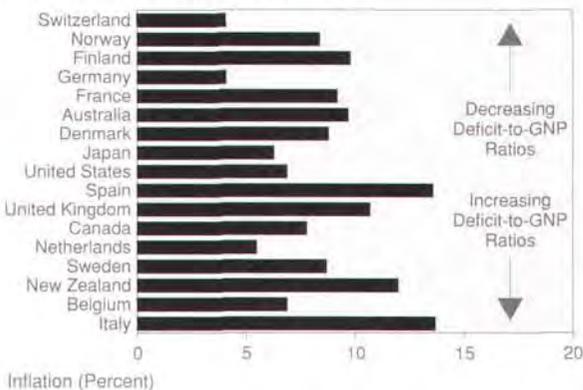


Chart 10

Government deficit relative to GNP and inflation in selected countries



Acknowledgment

This essay was taken from the study, "Two Types of Paper: A Primer on the Necessity of Central Bank Independence," written by W. Michael Cox, delivered to the board of directors of the Federal Reserve Bank of Dallas on February 8, 1990, and presented at the Annual Directors' Conference hosted by the Federal Reserve Board, April 26, 1990.

Chart notes

Chart 1

Data are from Robert J. Barro, *Macroeconomics*, 3d ed. See endnotes 1 and 3.

Chart 2

Data are from Robert J. Barro, *Macroeconomics*, 3d ed. See endnotes 1 and 3.

Chart 5

Outstanding government debt is measured as the par value of privately held gross federal debt. Statistics are available from the Federal Reserve Bank of Dallas. See also W. Michael Cox and Cara S. Lowry, "The Capital Gains and Losses on U.S. Government Debt: 1942-1987," *Review of Economics and Statistics*, vol. 71 (February 1989), pp. 1-14.

Chart 6

Interest earned on government securities held by the Federal Reserve and Federal Reserve reimbursements to the Treasury are available from Board of Governors of the Federal Reserve System, Annual Report, 1945-90 (Washington, D.C.: Board of Governors, 1946-91), table titled "Income and Expenses of Federal Reserve Banks." Also, see endnote 5.

Chart 7

Real interest cost is measured as the interest rate on one-year constant maturity Treasury securities, adjusted for inflation. The debt-to-money ratio is the par value of privately held government debt divided by the St. Louis Fed monetary base. The debt-to-GNP ratio is the par value of privately held government debt divided by gross national product.

Chart 8

Monetization percentages for 1950-79 are calculated as the total increase in base money from 1950 through 1979 divided by the cumulative (30-year) federal budget deficit. A similar procedure was used for the period 1980-90.

Chart 9

Actual price data are the GNP deflator. See endnote 7 for a description of the procedure used to simulate prices.

Chart 10

Deficit-to-GNP ratios are calculated as federal budget deficits divided by GNP for each country. Data are from International Financial Statistics (International Monetary Fund). Data on inflation are from Alberto Alesina, "Politics and Business Cycles in Industrial Democracies." See endnote 9.

Chart 11

See endnote 9 for the description and source of the data.

Endnotes

¹ The currency measure of money used throughout this essay is typically referred to as base money. Base money is currency held by the non-bank private sector plus reserves of banks. In an open market purchase of government securities, the Federal Reserve must create currency or the equivalent ownership thereof. This currency can be held by the non-bank private sector (currency outside the banking system), or it can be owned by banks and held either as reserves or "on deposit" with the Federal Reserve (currency inside the banking system). Thus, base money and the definition of currency used here are the same.

² To paraphrase Section 8(5) of the United States Constitution: The Congress shall have power to coin money and regulate the value thereof. With the creation of the Federal Reserve System in 1914, the Congress delegated its responsibility in this area to the Federal Reserve. In so doing, the Congress sanctioned the separation of its spending decisions from decisions regarding the way in which such spending would be financed.

³ The countries referred to here and also in Charts 1 and 2 are of all types—developed, underdeveloped, agricultural, industrialized, and so on. Data are from Robert J. Barro, *Macroeconomics*, 3d ed. (New York: John Wiley and Sons, 1990), pp. 153-54.

⁴ For an excellent compilation of the effects of inflation, the reader is directed to Stanley Fischer and Franco Modigliani, "Towards an Understanding of the Real Effects and Costs of Inflation," *Weltwirtschaftliches Archiv*, vol. 114 (1978), pp. 810-32.

⁵ Over the period 1947-88, Federal Reserve reimbursements to the Treasury totaled \$219.4 billion, and Federal Reserve interest earnings on government securities totaled \$220.4 billion, for a roughly dollar-for-dollar ratio. As long as the Federal Reserve has significant operating expenses, it cannot return the full value of its interest earnings to the Treasury unless it has additional sources of income, such as discount window earnings or profits from priced services. In recent years, these other sources of income have roughly approximated the Federal Reserve's operating expenses. Over the past two years, profits from operations in foreign exchange markets have added substantially to reimbursements in excess of interest earnings. See the March 1991 Federal Reserve Bulletin, p. 174, for a review of 1990 income and expenses.

⁶ Robert D. McTeer, Jr., in "Interest Rates and the Federal Reserve," *Syllogisms*, Council on Economic Education in Maryland (Towson State University), May/June 1982, discusses the issue of pressures that deficits may put on interest rates and the implications of deficits for monetary policy. For a related discussion, see Sherman J. Maisel, *Managing the Dollar* (New York: W.W. Norton and Company, 1973).

⁷ The economy's hypothesized price paths were simulated by using the quantity equation of exchange. Denoting M as the stock of currency (actually, base money—see endnote 1), V as the velocity of money (the average number of times that a unit of currency changes hands per year), y as the economy's annual real GNP, and P as the price level, the quantity equation says that $M \cdot V$ must equal $P \cdot y$, so that P must equal $M \cdot V / y$. As an admittedly crude approximation, we estimated P by employing this identity, using the actual values for V and y during the 1980-90 period, and with money conforming to whatever values were required in order to satisfy either policy A, policy B, or policy C (as outlined in the text), given the actual deficits for the 1980-90 period. For policy A, budget deficits were presumed to be financed by debt and money in the proportion necessary to leave the economy's stock of money relative to debt unchanged at its pre-1980 ratio (its ratio at the end of 1979). For policy B, budget deficits were presumed to be financed with debt to the degree necessary to maintain government debt relative to GNP at its pre-1980 ratio (the remainder of the debt being financed by money creation). For policy C, budget deficits were assumed to be financed 36 percent with money creation and 64 percent with debt issuance.

⁸ OECD refers to the Organization for Economic Cooperation and Development. See endnote 9.

⁹ Rankings of central bank independence shown in Chart 11 are from Robin Bade and Michael Parkin, "Central Bank Laws and Monetary Policy" (University of Western Ontario, Department of Economics, London, Ontario, Canada, June 1987, Photocopy), as interpreted by Alberto Alesina, "Politics and Business Cycles in Industrial Democracies," *Economic Policy*, April 1989, p. 81. Data on inflation shown in Charts 10 and 11 are from Alesina. Independence of the central bank from the executive branch of government is classified into four categories, from most independent (Category I) to least independent (Category IV): Category I—Switzerland and Germany; Category II—Japan and the United States; Category III—the Netherlands, Belgium, Canada, Norway, Sweden, Denmark, France, Finland, and the United Kingdom; and Category IV—Australia, New Zealand, Spain, and Italy. See also "Wise Men from the South," *The Economist*, February 2, 1991, p. 77.



In 1921, the Federal Reserve Bank of Dallas opened the doors of its new building at 400 South Akard St. and began an era of financial leadership in the Southwest. In the summer of 1992, this leadership will be reaffirmed symbolically when the new headquarters building at 2200 Pearl St. is completed.

The Board of Governors of the Federal Reserve System approved the plans and budget for the new Federal Reserve Bank of Dallas headquarters building in February 1989. As a result, a building site at the northeast corner of Woodall Rodgers Freeway and Pearl Street in downtown Dallas was purchased. The groundbreaking ceremony was held June 14, 1990.

Kohn Pedersen Fox Associates of New York designed the new building. The final building design documentation and implementation are being handled by Sikes Jennings Kelly & Brewer of Houston. Austin Commercial of Dallas is managing general contracting services. "We wanted the design to be timeless—expressing strength, stability and dignity. It has to communicate the strong, independent culture of the Southwest and incorporate all the new technology available to meet the needs of the Dallas Fed for the next 25 years," says Richard Floyd, project manager for the building during planning and the early stages of construction.

Throughout the 764,000-square-foot building, public and private areas have been thoughtfully intermingled to achieve a sense of community while providing the utmost security to sensitive areas.

The building will offer a panoramic view of downtown Dallas and will be near both the Arts District and the historic State–Thomas neighborhood. This location allows the Dallas Fed and its people to remain an integral part of downtown while taking advantage of the cultural assets of their neighbors.



B O A R D O F D I R E C T O R S

Each Federal Reserve Bank has a nine-member board of directors that oversees operations under the general supervision of the Board of Governors of the Federal Reserve System in Washington, D.C. These directors are chosen to represent various interests and concerns within their District and bring to the boards a broad range of expertise. The nine directors of the Head Office board are divided into three classes of three each—Classes A, B and C. Class A directors represent the member commercial banks throughout the District and are usually bankers. Class B and C directors are selected to represent the public and come from such backgrounds as agriculture, commerce, industry, service, labor and consumer groups, among others. Member banks in the District elect Class A and B directors, while the Board of Governors appoints Class C directors.

Directors who serve on the boards of Federal Reserve Branches are not elected but are appointed by the members of the Head Office board of directors or by the Board of Governors. These seven-member boards consist of four members appointed by the Head Office board and three members appointed by the Board of Governors. The Branch board members also are chosen to represent banking as well as public and business interests.

Each board meets once a month, and the members confer on Reserve Bank management decisions as well as economic conditions and monetary policy. Board members play a direct role in the Bank's management because they are responsible for appointing the Reserve Bank president and first vice president, subject to the approval of the Board of Governors, and for appointing all other officers of the Bank. They are responsible for the Bank's budget and expenditures and, in addition, review the annual internal audit program.

Directors play a vital role in the formulation of monetary policy through their advice and counsel to the Reserve Bank president. They provide firsthand economic and financial information as input for meetings of the Federal Open Market Committee—the top monetary policy-making unit of the Federal Reserve System. In addition, directors recommend, subject to review and determination by the Board of Governors, the discount rate to be charged by the Federal Reserve Bank.

*Federal Reserve Bank of Dallas
Head Office*

Chairman:
Adm. Bobby R. Inman
U.S. Navy (retired)
Private Investor
Austin, Texas

Deputy Chairman:
Maj. Gen. Hugh G. Robinson
U.S. Army (retired)
Chairman of the Board and
Chief Executive Officer
The Tetra Group Inc.
Dallas, Texas

Charles T. Doyle
Chairman of the Board and
Chief Executive Officer
Gulf National Bank
Texas City, Texas

T.C. Frost
Chairman of the Board
Frost National Bank
San Antonio, Texas

Robert G. Greer
Chairman of the Board
Tanglewood Bank, N.A.
Houston, Texas

Leo E. Linbeck, Jr.
Chairman of the Board and
Chief Executive Officer
Linbeck Construction Corp.
Houston, Texas

Robert L. Pfluger
Rancher
San Angelo, Texas

Gary E. Wood
President
Texas Research League
Austin, Texas

Peyton Yates
President
Yates Drilling Co.
Artesia, New Mexico

Federal Advisory Council Member

Ronald G. Steinhart
Chairman of the Board and
Chief Executive Officer
Team Bank
Dallas, Texas

El Paso Branch

Chairman:
Donald G. Stevens
Owner
Stevens Oil Co.
Roswell, New Mexico

Chairman Pro Tem:
W. Thomas Beard, III
President
Leoncita Cattle Co.
Alpine, Texas

Henry B. Ellis
President and Chief Credit Officer
MBank El Paso, N.A.
El Paso, Texas

Wayne Merritt
President
Claydesta National Bank
Midland, Texas

Diana S. Natalicio
President
The University of Texas at El Paso
El Paso, Texas

Ethel Olson
Owner
NAMBE of Ruidoso
Ruidoso, New Mexico

Humberto F. Sambrano
President
SamCorp General Contractors
El Paso, Texas

Houston Branch

Chairman:
Andrew L. Jefferson, Jr.
Attorney
Jefferson and Mims
Houston, Texas

Chairman Pro Tem:
Gilbert D. Gaedcke
Chairman of the Board and
Chief Executive Officer
Gaedcke Equipment Co.
Houston, Texas

Judy Ley Allen
Allen Investments
Houston, Texas

Jeff Austin, Jr.
President
First National Bank of Jacksonville
Jacksonville, Texas

A D V I S O R Y C O U N C I L S

Jenard M. Gross
President
Gross Builders Inc.
Houston, Texas

Clive Runnells
President and Director
Mid-Coast Cable Television Inc.
El Campo, Texas

David E. Sheffield
President (retired)
First Victoria National Bank
Victoria, Texas

San Antonio Branch

Chairman:
Roger R. Hemminghaus
Chairman of the Board, President and
Chief Executive Officer
Diamond Shamrock R&M Inc.
San Antonio, Texas

Chairman Pro Tem:
Lawrence E. Jenkins
Vice President (retired)
Lockheed Missiles & Space Co.
Austin, Texas

Gregory W. Crane
Chairman of the Board, President and
Chief Executive Officer
Broadway National Bank
San Antonio, Texas

Javier Garza
Executive Vice President
The Laredo National Bank
Laredo, Texas

Jane Flato Smith
Investments and Ranching
San Antonio, Texas

Sam R. Sparks
President
Sam R. Sparks Inc.
Progreso, Texas

Erich Wendt
President
Maverick Markets Inc.
Corpus Christi, Texas

Effective December 31, 1990

Financial Institutions

James A. Altick
President and Chief Executive Officer
Central Bank
Monroe, Louisiana

Arno Easterly, Jr.
President and Chief Executive Officer
Barksdale Federal Credit Union
Barksdale A.F.B., Louisiana

Everett C. Gambrell
Executive Vice President
Texas Commerce Bank
Houston, Texas

W. Gene Garrison
Chairman of the Board
First National Bank-Alice
Alice, Texas

Paul Gray
Senior Vice President
NCNB Texas National Bank
Dallas, Texas

James L. Hawkins, Jr.
Senior Vice President
First National Bank in Alamogordo
Alamogordo, New Mexico

Carter Kelly
Executive Vice President
The First National Bank of Amarillo
Amarillo, Texas

Delton P. Moore
Chairman
Texas Credit Union League Manager
Texaco PAW Employees
Federal Credit Union
Port Arthur, Texas

J.W. Pieper
Senior Vice President
First City National Bank of Houston
Houston, Texas

Lowell Smith, Jr.
Chairman of the Board and President
First State Bank
Rio Vista, Texas

Kenneth A. Trapp
Executive Vice President
Frost National Bank
San Antonio, Texas

Larry Z. Truax
President and Chief Executive Officer
Home Federal Savings Bank
of New Mexico
Deming, New Mexico

Small Business and Agriculture

J. Wayland Bennett
Charles C. Thompson Professor
Emeritus
Texas Tech University
Lubbock, Texas

Patrick E. Boyt
Managing Partner
P.E. Boyt Farms
Devers, Texas

John S. Cargile
President
Producers Livestock Auction
San Angelo, Texas

J.B. Cooper, Jr.
Farmer
Roscoe, Texas

Ron Davenport
Owner
Davenport Cattle Co.
Friona, Texas

Robert D. Dooley
Partner
KPMG Peat Marwick
Dallas, Texas

Annette Bailey Hamilton
Chairman of the Board
Annette 2 Cosmetics Inc.
Dallas, Texas

Lois Farfel Stark
President
Stark Productions Inc.
Houston, Texas

William P. Stephens
Executive Director
Farm and Ranch Heritage Institute
Las Cruces, New Mexico

L.C. Unfred
Farmer
New Home, Texas

Jeffrey W. Wilson
President
Cattle Baron Steak House Inc.
Roswell, New Mexico

Carlos A. Zuniga
Vice President
Zuniga Freight Services Inc.
Laredo, Texas

Effective January 1, 1990

S T A T E M E N T O F C O N D I T I O N

	<i>December 31, 1990</i> <i>(Thousands)</i>	<i>December 31, 1989</i> <i>(Thousands)</i>
ASSETS		
Gold certificate account ¹	\$ 585,000	\$ 613,000
Special drawing rights certificate account ²	463,000	433,000
Coin	44,137	39,231
Loans to depository institutions	22,900	27,503
Securities:		
Federal agency obligations	226,345	274,119
U.S. government securities	8,390,883	9,527,526
Total securities	<u>\$ 8,617,228</u>	<u>\$ 9,801,645</u>
Items in process of collection	977,079	753,758
Bank premises (net)	71,551	25,356
Other assets	2,704,393	4,088,643
Interdistrict settlement account	986,328	(1,511,417)
TOTAL ASSETS	<u><u>\$14,471,616</u></u>	<u><u>\$14,270,719</u></u>
LIABILITIES		
Federal Reserve notes	\$11,481,291	\$11,166,011
Deposits:		
Depository institutions	1,756,755	1,948,763
Foreign	11,400	11,250
Other	7,046	67,408
Total deposits	<u>\$ 1,775,201</u>	<u>\$ 2,027,421</u>
Deferred credit items	745,829	616,847
Other liabilities	99,821	119,310
TOTAL LIABILITIES	<u><u>\$14,102,142</u></u>	<u><u>\$13,929,589</u></u>
CAPITAL ACCOUNTS		
Capital paid in	\$ 184,737	\$ 170,565
Surplus	184,737	170,565
TOTAL CAPITAL ACCOUNTS	<u><u>\$ 369,474</u></u>	<u><u>\$ 341,130</u></u>
TOTAL LIABILITIES AND CAPITAL ACCOUNTS	<u><u>\$14,471,616</u></u>	<u><u>\$14,270,719</u></u>

¹This Bank's share of gold certificates deposited by the U.S. Treasury with the Federal Reserve System.

²This Bank's share of special drawing rights certificates deposited by the U.S. Treasury with the Federal Reserve Bank of New York.

S T A T E M E N T O F O P E R A T I O N S

	For the year ended December 31	
	1990	1989
	(Thousands)	(Thousands)
CURRENT INCOME		
Interest on loans	\$ 32,125	\$ 211,730
Interest on government securities	744,950	917,443
Income on foreign currency	197,734	78,316
Income from priced services	49,787	48,079
Other income	728	1,015
Total current income	\$1,025,324	\$1,256,583
CURRENT EXPENSES		
Current operating expenses	\$ 92,358	\$ 87,616
Less expenses reimbursed	6,336	6,061
Current net operating expenses	\$ 86,022	\$ 81,555
Cost of earnings credits	6,848	7,744
Current net expenses	\$ 92,870	\$ 89,299
CURRENT NET INCOME	\$ 932,454	\$1,167,284
PROFIT AND LOSS		
Additions to current net income:		
Profit on sales of government securities (net)	\$ 2,240	\$ 25
Profit on foreign exchange transactions (net)	162,594	92,320
Other additions	41	16
Total additions	\$ 164,875	\$ 92,361
Deductions from current net income:		
Loss on foreign exchange transactions (net)	\$ 0	\$ 0
Other deductions	2	1
Total deductions	\$ 2	\$ 1
Net additions (deductions)	\$ 164,873	\$ 92,360
Cost of nonreimbursable Treasury services	\$ 4,278	\$ 2,777
Assessment by Board of Governors:		
Expenditures	\$ 7,937	\$ 6,562
Federal Reserve currency costs	8,915	8,854
NET INCOME AVAILABLE FOR DISTRIBUTION	\$1,076,197	\$1,241,451

S T A T E M E N T O F S U R P L U S

	<i>For the year ended December 31</i>	
	<i>1990</i>	<i>1989</i>
	<i>(Thousands)</i>	<i>(Thousands)</i>
Surplus, January 1	\$ 170,565	\$ 158,031
Net income available for distribution	1,076,197	1,241,451
LESS:		
Dividends paid	11,027	9,328
Payments to the U.S. Treasury	<u>1,050,998</u>	<u>1,219,589</u>
Net amount transferred to (from) surplus	<u>\$ 14,172</u>	<u>\$ 12,534</u>
Surplus, December 31	<u>\$ 184,737</u>	<u>\$ 170,565</u>

V O L U M E O F O P E R A T I O N S

District Summary

	<i>Number of Pieces Handled</i>		<i>Dollar Amount (Thousands)</i>	
	<i>1990</i>	<i>1989</i>	<i>1990</i>	<i>1989</i>
Currency received and counted	959,597,700	1,012,861,100	13,559,912	14,412,556
Coin received and counted	727,955,791	803,788,459	111,793	149,561
Food stamps redeemed	319,719,912	248,706,000	1,672,384	1,284,487
Transfers of funds	6,747,065	6,717,474	10,368,347,128	10,566,952,229
CHECKS HANDLED				
U.S. government checks	34,397,594	33,762,656	49,144,367	44,881,991
Fine sort	383,290,202	313,701,988	96,459,566	84,985,195
All other ¹	1,129,534,456	1,109,788,622	570,465,998	575,841,535
ACH ITEMS HANDLED				
Commercial	91,458,412	77,391,770	378,729,990	333,366,399
Government	41,739,399	33,996,160	39,044,581	27,073,447
COLLECTION ITEMS HANDLED				
U.S. government coupons paid	17,827	19,682	22,736	10,483
All other	277,864	291,651	770,545	712,502
ISSUES, REDEMPTIONS, EXCHANGES OF U.S. GOVERNMENT SECURITIES				
Definitive and book-entry	6,350,898	8,417,607	765,177,143	511,327,620
LOANS				
Advances made	1,750	3,235	4,591,018	150,928,502

¹Exclusive of checks drawn on Federal Reserve Banks.

O F F I C E R S

*Federal Reserve Bank of Dallas
Head Office*

Robert H. Boykin
President and
Chief Executive Officer*

George C. Cochran, III
Senior Vice President

Jay K. Mast
Senior Vice President

Harvey Rosenblum
Senior Vice President and
Director of Research

Tony J. Salvasio
Senior Vice President

James L. Stull
Senior Vice President

Millard E. Sweatt
Senior Vice President,
General Counsel and Secretary

Lyne H. Carter
Vice President

Jack A. Clymer
Vice President

W. Michael Cox
Vice President and
Economic Advisor

Billy J. Dusek
Vice President

Billy D. Fuller
Vice President

Joseph T. Gholson
Vice President

Robert D. Hankins
Vice President

Jerry L. Hedrick
Vice President

Helen E. Holcomb
Vice President

Joel L. Koonce, Jr.
Vice President

Robert F. Langlinais
Vice President and
General Auditor

Rebecca W. Meinzer
Vice President

Gerald P. O'Driscoll, Jr.
Vice President and
Associate Director of Research

Dean A. Pankonien
Vice President,
Assistant General Counsel
and Assistant Secretary

Larry J. Reck
Vice President

Jesse D. Sanders
Vice President

Genie D. Short
Vice President

Larry M. Snell
Vice President

W. Arthur Tribble
Vice President

Uzziah Anderson
Assistant Vice President

Basil J. Asaro
Assistant Vice President

Stephen P.A. Brown
Assistant Vice President and
Senior Economist

Richard J. Burda
Assistant Vice President

Terry B. Campbell
Assistant Vice President

M. Don Dorsey
Assistant Vice President

Robert G. Feil
Assistant Vice President

Andrew W. Hogwood, Jr.
Assistant Vice President

Johnny L. Johnson
Assistant Vice President

C. LaVor Lym
Assistant Vice President

James R. McCullin
Assistant Vice President

John R. Phillips
Assistant Vice President

Larry C. Ripley
Assistant Vice President

Mary M. Rosas
Assistant Vice President

Robert J. Rossato
Assistant General Auditor

Philip R. Spear
Assistant Vice President

Michael N. Turner
Assistant Vice President

Stephen M. Welch
Assistant Vice President

Marion E. White
Assistant Vice President

Robert L. Whitman
Assistant Vice President

Bob W. Williams
Assistant Vice President

Emilie S. Worthy
Assistant Vice President

Bob G. Moore
Senior Project Manager

El Paso Branch

S.C. Clay
Vice President in Charge

Javier R. Jimenez
Assistant Vice President

J. Eloise Guinn
Operations Officer

Houston Branch

Robert Smith III
Senior Vice President in Charge

Vernon L. Bartee
Vice President

René G. Gonzales
Assistant Vice President

Luther E. Richards
Assistant Vice President

San Antonio Branch

Thomas H. Robertson
Vice President in Charge

T. Herb Barbee
Assistant Vice President

John A. Bullock
Assistant Vice President

Thomas C. Cole
Assistant Vice President

Richard A. Gutierrez
Assistant Vice President**

Effective January 1, 1991

*Robert H. Boykin, president and chief executive officer, retired January 31, 1991. Robert D. McTeer, Jr., became president and chief executive officer February 1, 1991. William H. Wallace, first vice president and chief operating officer, retired December 31, 1990.

**Effective February 1, 1991

Federal Reserve Bank of Dallas
400 South Akard Street
Dallas, Texas 75202
(214) 651-6111

El Paso Branch
301 East Main Street
El Paso, Texas 79901
(915) 544-4730

Houston Branch
1701 San Jacinto Street
Houston, Texas 77002
(713) 659-4433

San Antonio Branch
126 East Nueva Street
San Antonio, Texas 78204
(512) 224-2141