
FEDERAL RESERVE BANK OF NEW YORK

Eightieth Annual Report

FOR THE YEAR ENDED
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SECOND FEDERAL RESERVE DISTRICT

FEDERAL RESERVE BANK OF NEW YORK



May 1995

To the Depository Institutions in the
Second Federal Reserve District

I am pleased to send you the *Eightieth Annual Report* of the Federal Reserve Bank of New York. This year's *Annual Report* includes the text of the Roy Bridge Memorial Lecture for 1995, delivered on April 12 at the Guildhall in London, England, on the subject of international financial cooperation. Against the background of an increasingly global financial marketplace, I emphasize the need for stronger, ongoing international cooperation by both government officials and the private sector. In addition, I highlight the critical role of central banks in containing systemic consequences of financial problems.

For the first time, the *Annual Report* also includes reports on open market operations and Treasury and Federal Reserve foreign exchange operations for 1994.

I hope that you will find this year's *Annual Report* of interest.

A handwritten signature in black ink, appearing to read 'William J. McDonough'.

William J. McDonough
President

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INTERNATIONAL ECONOMIC COOPERATION

William J. McDonough

I am greatly honored to be here this evening to present the annual Roy Bridge Memorial Lecture. I am well aware of being the first American public official to deliver this lecture and feel that it is particularly apt that you have given that honor to an official of the Federal Reserve Bank of New York. Roy Bridge's American counterpart was Charles Coombs of the New York Fed, the man who taught me a great deal about the workings of the international economy and especially the foreign exchange markets when he served as an adviser to the commercial bank at which I worked.

Both Roy Bridge and Charlie Coombs were legendary experts on foreign exchange matters and were closely involved in international financial policy in the 1960s and '70s. They believed that it was international financial cooperation that underpinned the functioning of the Bretton Woods System, which they fought so valiantly to preserve. The friendship between Messrs. Bridge and Coombs reminded many of the extraordinary friendship and cooperation between Montagu Norman and Benjamin Strong, the first head of the New York Fed, and Norman's co-creator of central banking cooperation. That is a legacy that my good friend Eddie George and I try to keep alive today.

This evening I would like to share some thoughts on international financial cooperation—a subject that obviously would have met with Roy Bridge's approval. Like Roy Bridge, I fully subscribe to the view that proper functioning of the international financial system requires close and ongoing cooperation among central bankers and market participants. I hope that my

The Roy Bridge Memorial Lecture, presented by William J. McDonough, President of the Federal Reserve Bank of New York, at the Guildhall in London, England, on April 12, 1995.

remarks will honor, however inadequately, Roy Bridge's remarkable career at the Bank of England and his contributions to the cause of international cooperation.

Discussions of international economic cooperation are usually concerned with efforts of major countries to coordinate their foreign exchange market intervention, or their monetary or fiscal policies. But economic cooperation is much broader in scope than just the coordination of macroeconomic policy actions by central banks and national governments. I believe the focus on macroeconomic issues alone leads to a considerable underappreciation of international cooperative efforts.

International economic cooperation, in the broader context, involves both the public and private sectors and spans a wide range of activities beyond the macroeconomic and financial arena.

I fully subscribe to the view that proper functioning of the international financial system requires close and ongoing cooperation among central bankers and market participants.

These include agreements on trade policy, shipping and navigation, public health standards, and product safety. In fact, international agreements in the nonfinancial area deserve much of the credit for the smooth flow of commerce that we now take for granted.

Though I have that broad context in mind, it is not my intention to offer a comprehensive picture of international cooperation. Instead, I will highlight some financial issues that have been at the forefront of central bank cooperation in recent years. Specifically, I would like to focus on three broad areas: banking supervision and related issues concerning financial markets; payment and settlement issues; and financial policies aimed at dealing with international financial crises or major financial sector problems.

First, let me be clear that, in my view, international cooperation is not a coded phrase for central bankers and finance ministers telling market participants what to do. The evolution and expansion of financial markets over the last thirty years have moved too far for anyone to believe that central bankers alone have the wisdom or power to absolutely control markets or behavior. Nor do I think that the private sector is always right or that the greed of the most aggressive trader produces the best results for society. Rather, international cooperation is public servants and market participants working together to make markets function as best they can.

Indeed, financial markets are a highly cooperative form of competition, and depend upon shared assumptions and expectations of all participants about the rules of the game, and those rules

being followed. Thus, international cooperation must begin with the market participants themselves and perhaps best at the level of each marketplace.

When I got into banking in 1967, foreign exchange markets were relatively simple and not highly profitable because of the rules of the Bretton Woods System. Perhaps because of that relative simplicity and absence of the boxcar-size profits known today, informal cooperation among dealers, chief dealers, and their bosses was quite common. If one of us saw something that looked strange at another institution, we would make a quiet phone call and suggest somebody look into it. We assumed, correctly, that the favor would be returned if the need arose. To the degree that is not happening in the much fiercer competitive environment in which you must live, I recommend it to you. It has merit if for no other reason than that a quiet phone call from a friendly competitor is likely to have a less unpleasant aftermath than one of those quiet phone calls from the Bank of England or the considerably less subtle boot in the backside from the New York Fed.

The same kind of courtesy can extend internationally. Note that I do not recommend this informal "community foreign exchange market protection association" as a substitute for the internal controls so necessary in each bank or for the appropriate supervision by regulators, but as an additional protection for all market participants from the rogue trader or the rogue group within a market participant. It is rare, indeed, that a number of people do not say after one of

International cooperation on financial issues of mutual concern to central banks has improved significantly in recent years. But . . . increasingly greater internationalization of the financial marketplace requires even stronger ongoing cooperative efforts to reduce potential systemic risk and to deal with other major challenges to the stability of the international financial system.

these unfortunate incidents that they saw something strange going on or were aware that such and such a dealer was swinging much too big and too wide.

More formal cooperation in the private sector is demonstrated by such efforts as the Group of Thirty study on derivatives and the many fine works produced by the Foreign Exchange Committee in New York, a private sector group encouraged and supported by the New York Fed.

Now let me turn to the central banks and our role.

It is clear that international cooperation on financial issues of mutual concern to central banks has improved significantly in recent years. But I believe that increasingly greater international-

ization of the financial marketplace requires even stronger ongoing cooperative efforts to reduce potential systemic risk and to deal with other major challenges to the stability of the international financial system. Indeed, international cooperation on many financial matters is no longer just a good thing, but an absolute necessity, not only to deal with ad hoc financial problems or crises but also to ensure the day-to-day functioning of the international financial and payment systems. The ongoing financial innovations and internationalization of financial activities have greatly increased the degree of interdependence among national financial policies and have exposed serious gaps in the supervisory apparatus. They also have put new pressures on payment and settlement systems. Any systemic risk stemming from a major disruption in one market is now essentially international in character and requires cooperative remedies.

Given the extensive public discussions of banking supervision and capital standards in recent years, you probably will not be surprised to hear me say that international cooperation in bank oversight, at least among the G-10 countries, has advanced significantly over the last decade. Much of this progress has occurred in the context of the Basle Committee on Banking Supervision, which has acted as the key point of contact to safeguard the stability of the financial system and to ensure fair competition among banks across countries.

One of the most important, and perhaps the best known, achievements in international cooperation on banking supervision is the Capital Accord of 1988. The Accord established minimum capital standards and helped level the playing field for internationally active banks. While

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there were many forces at work, the Accord stressed the importance of capital as the bedrock of financial strength and had the effect of generally raising bank capital positions and making the banking system safer.

Another major recent achievement in coordinating banking supervision was the 1992 revision of the Basle Concordat to incorporate "minimum standards" for the supervision of international banking groups and their cross-border establishments. You will recall that the original 1975 Concordat had delineated the roles of host and home country supervisors in the aftermath of the failure of Herstatt Bank, and its subsequent 1983 revision established the principle of consolidated supervision for all internationally active banks.

Over the last few years, the Basle Committee on Banking Supervision has been working to develop capital requirements for market risks in banks' trading activities to complement the original Capital Accord, which dealt exclusively with credit risk. The Committee's April 1993 draft proposals generated extensive comments from market participants, with many of them suggesting alternatives to the proposed approach based on banks' own internal models for measuring risk in their trading activities. In response, the Committee has been exploring the feasibility of an approach under which banks could be given the choice of using the standard approach as the basis for calculating the capital charge or using their own model, which I strongly prefer. These proposals are being made public today and I look forward to the comments of banks and other interested parties on the changes the Basle Committee is putting forward.

The discussions on these issues reflect a basic tension that has emerged in the efforts to promulgate capital standards: the desire to have easily understood rules that are not mathematically complex competing with the desire for more precise, if complex, standards. It is likely that the credit and market risk parts of the extended Capital Accord will end up with different approaches.

Two other cooperative initiatives in the financial supervision area are worth mentioning. First, since January 1993, an informal tripartite working party of G-10 banking, securities, and insurance supervisors has been working toward achieving consistency in supervisory approaches to similar-type risks in banking and the so-called financial conglomerates—companies engaged in banking, insurance, and securities, with exclusive or predominant activities in at least two of those financial sectors. The tripartite group is developing a deeper understanding of supervisory approaches in different sectors and has made progress in identifying the main issues about which all supervisors are concerned. But further work is needed to achieve agreements on capital standards and other matters.

Second, supervisors of both banks and securities firms have made good progress in developing a cooperative approach to dealing with risks in derivatives. Last July, the Basle Committee on Banking Supervision and the Technical Committee of the International Organization of Securities Commissions (IOSCO) acted jointly, for the first time, in issuing risk management guidelines for derivatives. The two sets of guidelines are consistent and are based on three basic principles: appropriate oversight by boards of directors and senior management, adequate risk management, and comprehensive internal controls and audit procedures. I hope that such cooperation will strengthen and expand over time to a broader range of issues. For example, the Basle Committee and IOSCO have been working constructively on a framework for regulatory

reporting, and I also expect the Basle Committee's market risk proposal to further stimulate the Basle/IOSCO dialogue.

On other, more general aspects of derivatives activities:

G-10 central banks, the Group of Thirty, and the Institute for International Finance, among others, have issued reports aimed at achieving greater public disclosure of risks in derivatives and enhanced market transparency. I regard these areas as critical for both risk management and banking supervision. A striking aspect of the markets in the last year has been the recurrent dramatic problem situations at individual institutions, accompanied by tremendous uncertainty as to the exact nature of market forces at work and the size of overhang positions. This uncertainty has created considerable potential for volatile and disorderly markets.

In this environment, I see a strong and urgent need for bold and ambitious disclosure standards. While all of us recognize that greater disclosure and market transparency will not eliminate abuse or fraud, they will reduce the potential for such problems. Weak and inadequate information systems clearly add to the difficulties of senior management and supervisors in detecting fraud related to complex trading activities.

The observations and recommendations presented in the Fisher report, a discussion paper released last September by the G-10 central banks, provide a good foundation for enhancing

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public disclosure of risks in trading of derivatives and other financial instruments. With similar efforts under way in the private sector, I think it is reasonable to expect significant progress in this area over the near term. The 1994 annual reports of major U.S. banks—many just out—show that substantial strides are being made.

Personally, I am convinced that our collective efforts over the past years have prevented some incipient financial problems from developing and have ameliorated others. But I am also concerned that as we have intensified our efforts on the official side, perhaps particularly in banking regulation and supervision, market participants run the risk of making the mistake of accepting official minimum standards in place of their own best judgments. As financial markets have grown more complex, regulators and supervisors are drawn into greater levels of detail, and necessarily so. But the increasingly detailed minimum standards we suggest, whether for capi-

tal, trading practices, audit controls, or disclosure, should not—and really cannot—be a substitute for the optimum levels of capital, the optimum trading practices, and the optimum financial disclosures that market participants should expect of themselves.

In recent years, the rapid growth of cross-border financial activity and the worldwide inter-relationship of payment and settlement systems have heightened the importance of payment

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issues for the safety and soundness of the international financial system. In interconnected markets, payment problems in any market spread quickly around the world.

The G-10 central banks, largely working through the Basle Committee on Payment and Settlement Systems, which I chair, have focused on cooperative efforts to define and set out the benefits and limits of netting and to promote safer payments arrangements. In my view, the Lamfalussy report, released in November 1990, was a particularly important step in central bank cooperation on coping with the payment system risks. The report developed minimum standards for the operation of netting schemes, together with a cooperative oversight arrangement for central banks as they deal with netting arrangements.

Central banks and the private sector have devoted much recent effort to defining and understanding Herstatt risk—the risk of settlement failure in foreign exchange caused by temporal

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gaps—and finding ways of mitigating its severity, if not eliminating it. Herstatt risk, named after the German bank that failed in 1974, is especially troublesome because it necessarily goes beyond national borders and affects the financial system globally.

While many important changes put in place since Herstatt have helped reduce the settlement risk in foreign exchange transactions, we are still far from eliminating Herstatt risk. I am encouraged, however, that efforts to deal with Herstatt risk have moved ahead at a faster pace over the last two years or so. In particular, the Noel report, released in September 1993 by the Committee on Payment and Settlement Systems, the work of the New York Foreign Exchange Committee, summarized in a study issued last October, and a recent report by the New York Clearing House Association have made very significant contributions to understanding the issues involved in reducing or eliminating Herstatt risk.

A steering committee of central bank payments experts, working under the auspices of the Committee on Payment and Settlement Systems, is taking a coordinated look at the dimensions and sources of Herstatt risk, including a series of interviews with financial market participants

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in many countries. That work is not yet complete, but it should help identify potential vulnerabilities in current arrangements and suggest methods of dealing with them. It is my hope that the recent substantial private and public sector efforts dedicated to this issue would lead to the elimination, or at least the near-elimination, of Herstatt risk. After more than twenty years, that goal is long overdue.

The reason to recount the number of recent reports is to show the depth of the dialogue on the goals and means of dealing with Herstatt risk. While we have not yet solved Herstatt risk, the tacit agreement of the public and private sectors to debate the issues at a high level with all interested parties and publicly airing potential solutions augurs well for the process. This encourages maximum participation and fullest disclosure of new ideas and the delineation of risks. It might not be the most efficient way, but I believe it is the best way of turning the dialogue into a lasting solution.

Most everyone would agree that the most important objective of international cooperation in the context of financial problems or crises is to avoid or contain systemic risk. Since central banks are the ultimate sources of liquidity, their involvement in the cooperative process is critical to solving financial problems and containing systemic threats. In finding solutions to financial problems, however, central banks are not, and should not be, interested in providing pro-

tection against “normal” risks in the financial system. After all, risk taking is an inherent part of banking and finance in market economies.

I also want to stress another general point: international financial crises or problems and their solutions usually involve important macroeconomic policy dimensions. This certainly has been true for most of the major international financial problems of the 1980s and the 1990s—the LDC debt crisis of the early 1980s, the dollar misalignment that prompted the September 1985 Plaza agreement, the October 1987 stock market crash, the fall 1992 exchange rate crisis of the European Monetary System, and the recent financial difficulties of Mexico.

The importance of macroeconomic forces in causing and resolving financial crises has increased significantly in recent years. The main reason is that greatly enhanced international integration and increased competition have tightened linkages between macroeconomic factors and financial markets. Actual or expected changes in monetary policy, for example, can cause sudden shifts in market confidence and huge changes in financial flows across borders, leading to dislocations in the countries involved and increasing potential risks to the entire financial system and the world economy. Effective solutions to financial crises, therefore, require that we also address their macroeconomic causes and consequences.

Central banks’ role in resolving international financial problems is crucial because they exercise joint responsibilities for both macroeconomic stability and oversight of the financial system while, at the same time, they are the ultimate sources of liquidity. Thus, central banks are in a

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unique position to balance conflicting short-run interests stemming from the resolution of a crisis and the broader long-run consequences of that resolution. The position of the Federal Reserve in cooperative efforts is all the more important because of the role of the dollar in international finance.

Central bank cooperation has played a critical role in containing systemic consequences of major international financial crises over the years. For example, when the LDC debt crisis broke publicly in 1982, with a potential default by Mexico on more than \$50 billion debt to international commercial banks, central banks acted quickly to organize the provision of immediate

liquidity support while a broader, permanent solution was worked out. The effort was led by the Federal Reserve, but it would not have succeeded without the active cooperation of the Bank of England and other central banks. As Paul Volcker wrote some years later, central bankers, under the leadership of Lord Richardson and Fritz Leutwiler, then president of the Bank for International Settlements (BIS), “instinctively understood what was at stake.”

The intergovernmental and commercial bank cooperation to deal with broader aspects of the LDC debt problem was much harder to achieve and less effective. As you know, it took more than a decade and many debt rescheduling exercises and debt service reduction operations to resolve the problems that followed the debt crisis of the early 1980s. Even here, however, central bankers persevered with the necessary patience to encourage continued engagement among negotiators and helped balance long-term considerations of financial prudence and macroeconomic goals.

Cooperation among central banks also worked effectively to contain the consequences of the October 1987 abrupt drop in stock prices in the United States and other countries. Central banks acted promptly to make liquidity available to financial markets, without losing sight of prudential concerns. During the crisis period, the Federal Reserve and other major central banks were engaged in nearly continuous consultations with one another, drawing upon knowledge obtained from contacts with commercial banks and securities houses.

But October 1987 also spotlighted an element that has greatly complicated international coordination in market crises since then—and that is the large flow of highly mobile international capital. The factors that motivate international investors are often different from those of domestic financial market participants, which changes the relationship between financial and macroeconomic variables. Large and persistent inflows of international capital may make domestic financial conditions appear more benign than warranted and may even lull policymakers into believing there is more time than they really have for macroeconomic adjustment. But as we have seen more than once, the speed at which international investors redirect their capital has greatly shortened the time frame in which global solutions have to be identified and agreed upon.

The breakdown of the Exchange Rate Mechanism of the European Monetary System in 1992 represented a particularly striking example of a crisis that reflected a collision between macroeconomic forces and the new highly integrated international financial environment. Given the requirement of a high degree of macroeconomic convergence, financial markets could not endure for long the inconsistency between the interlocked pegged exchange rates and the wide disparities in performance across European economies. In reviewing this episode, I cannot help

but notice that the inflow of international capital contributed importantly to the ability of European Community members to sustain divergent policies, thereby adding to the severity of the adjustment when it came.

The incongruence between macroeconomic forces and the new international financial environment also is fundamental to understanding the broader context of the recent Mexican financial

Large and persistent inflows of international capital may make domestic financial conditions appear more benign than warranted and may even lull policymakers into believing there is more time than they really have for macroeconomic adjustment.

problems. In 1992 and 1993, reflecting declining inflation and ongoing fundamental improvements in its economic and financial structure, Mexico attracted huge amounts of portfolio capital inflows and foreign direct investment. But at the same time, Mexico was losing external competitiveness, and its current account deficit widened significantly. In 1994, foreign investors became increasingly less confident about the Mexican economy as uncertainties caused by some noneconomic events—the Chiapas uprising, political assassinations, and the August election—unfolded. And the Mexican authorities supported the peso exchange rate and financed the large and increasing current account deficit by short-term borrowing and drawing down their reserves.

One interpretation of the Mexican crisis comes from looking closely at the international reserve position of the Banco de Mexico during 1994. After each of the political shocks, the market stabilized and international reserves held their new lower levels and then began to increase slowly. The authorities, understandably in my view, thought that they should interpret these results as renewed external confidence in the country and its policies. Another interpretation, with the gift of hindsight, is that we were looking at the last gasp of a long bull market in Mexican financial assets. As is almost always the case with a long-in-the-tooth bull market, it turned with a vengeance. Money not only stopped flowing into Mexico, but moved out rapidly and made it impossible to hold the exchange rate. The result was a disorderly retreat and the severe readjustment we have been seeing over the last few months.

From my perspective, the large financial support package for Mexico arranged by the international community under the leadership of the United States reflected the seriousness of the situation. While it is important to the United States that Mexico succeed in regaining financial market confidence and reestablishing noninflationary growth and financial stability, the stakes for the entire international community also are high. The Mexican situation has had the poten-

tial for considerable systemic harm to the global financial system and the world economy.

The implications of the Mexican situation also need to be considered in the wider context of the post-cold war period in which almost all nations have been trying to emulate the free-market-oriented approaches of the industrialized democracies. Mexico has been widely perceived as a model of economic transition from a rigid state-directed economic system toward a free-market system. A reversal of Mexico's reforms and a spread of its financial problems to other emerging economies could halt, or even reverse, the international trend toward free-market-oriented approaches.

The international context of recent financial difficulties highlights the critical importance of maintaining sound domestic economic and financial policies in today's global financial environment. By inducing capital inflows from abroad and providing access to international markets, sound domestic policies deliver significant additional benefits to an economy through international channels. But domestic policy mistakes elicit quick and harsh punishment on an economy from international sources and also may reverberate around the globe at a prodigious pace, requiring international solutions.

The increasingly global financial environment also raises some broader fundamental issues about the process of financial disruptions and crises in our free-market-based financial system: what are the critical forces in the development of international financial problems? how can such problems be prevented? and what types of mechanisms are needed to deal with them once they do occur? We in central banks have been thinking about these issues for some time and recent

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events have provided an impetus to accelerate that process. In this respect, I might mention that G-7 finance ministers and central bank governors have agreed to make progress on issues concerning more effective prevention and coordination mechanisms dealing with international financial problems by the time of the G-7 Halifax meeting in June.

One general issue raised by the Mexican problem and fears of other problems in the future is whether we need a more formal international institutional structure. My own view is that we

definitely do not need to create another institution or a new bureaucracy. But a positive and necessary step to take would be to better delineate responsibilities for more intensive monitoring and warning systems within existing structures. We need to understand the process of financial crises in the new international environment with much greater clarity before we seriously consider making any substantive changes in institutional arrangements.

Another general issue that I would like to raise is whether, in today's free-market-oriented global financial system, we need to find a mechanism that incorporates for sovereign nations the

I want to emphasize that international cooperation ultimately depends on mutual confidence and trust, and on good working relationships among people involved in decision making. These intangibles are particularly important in times of stress, when decisions must be made quickly.

principles and procedures of private sector debt workout, features such as prioritization of claims and standstill provisions. Developing such a mechanism is important if we wish to facilitate early resolution of these problems—always key in workout situations—and give the private sector a larger role. I am optimistic and hopeful that our need for such mechanisms will be rare, and that an episode such as the Mexican situation will lead to a self-correcting mechanism by sensitizing other countries to avoid overdependence on large inflows of portfolio capital.

In closing, I want to emphasize that international cooperation ultimately depends on mutual confidence and trust, and on good working relationships among people involved in decision making. These intangibles are particularly important in times of stress, when decisions must be made quickly with little time for the deliberative process. Central bankers have a long tradition of close contacts and working well with each other. The BIS monthly meetings in Basle, for example, provide an opportunity for central bankers not only to exchange views on current developments and policies, but also to get to know each other on a personal level. Over the years, mutual understanding based on these contacts has proven vital in dealing with problem situations.

And yet all the contacts among central bankers will accomplish little if you, the people who are in the markets every day trying to do the best you can for your customers and maximizing profits for your institutions, do not keep ever present your own collective interest in and responsibility for the safety and soundness of financial markets. As somebody who was a commercial banker for twenty-two years, with responsibility for foreign exchange operations for

that entire period, and a central banker for just over three years, I could not be more convinced that you and we are in this together. The world in which we live is not only a saner one, but over time a much more consistently profitable one for you, if central bankers and market practitioners work together to make these complicated, difficult, and yet intellectually fascinating markets both safe and sound.

Thank you for giving me the honor to present this year's Roy Bridge Memorial Lecture.

MONETARY POLICY AND OPEN MARKET OPERATIONS DURING 1994

INTRODUCTION

In 1994, the operating techniques for implementing monetary policy remained similar to those of recent years; however, the Trading Desk at the Federal Reserve Bank of New York gained slightly more flexibility in its execution of open market operations after the Federal Open Market Committee began announcing its policy actions in February. As a consequence of the change in procedures, open market operations were no longer used to communicate policy shifts. Nearly all the Desk's operations added reserves because cumulative reserve shortages were substantial for the fourth consecutive year. These deficiencies reflected the continued rapid expansion of currency, which stemmed in part from heavy currency shipments abroad. Working in the other direction were declines in the demand for reserve balances arising from monetary policy tightening. Higher interest rates reined in the growth of transactions deposits and reduced the balances that banks were required to hold at the Federal Reserve. As these balances fell, banks lost some flexibility in managing their reserve positions, and by year-end the potential for operating difficulties associated with low balances had reemerged.

The next section of the report briefly reviews the course of monetary policy in 1994 and describes the responses of the fixed-income securities markets to economic and policy developments. Monetary policy moved away from the accommodative stance that had been in place for some time as the robust pace of economic growth cut into remaining excess productive capacity. With the economy expanding rapidly and the Federal Reserve acting to restrain inflationary

Adapted from a report to the Federal Open Market Committee by Peter R. Fisher, Executive Vice President of the Bank and Manager of the System Open Market Account. Ann-Marie Meulendyke, Adviser, Open Market Function, and Spence Hilton, Manager, Open Market Trading and Analysis Staff, were primarily responsible for the preparation of this report. Other members of the Open Market Function assisting in the preparation were Robert Van Wicklen, Theodore Tulpan, Eileen Steigleder, and Steve Zannetos. William May, Economist, Financial Markets and Institutions Department, also assisted.

pressures, interest rates moved sharply higher and the yield curve flattened. The extent of the rise in yields took many market participants by surprise, contributing to losses and a few bankruptcies, particularly by highly leveraged accounts.

The final section of this report discusses the Open Market Trading Desk's implementation of the objectives established by the Federal Open Market Committee (FOMC). It reviews policy techniques and factors affecting reserve supplies and demands over the year. In 1994, the Desk added a net \$32 billion to its securities portfolio, the second largest annual increase. Repurchase agreements with relatively short maturities were used extensively by the Desk to manage reserves within two-week reserve maintenance periods; such transactions are well adapted to handle short-term variations in reserve levels and the frequent revisions to estimated reserve needs. In addition, pricing of daylight overdrafts, which began in April, had the potential to complicate policy implementation, but the actual effects on operations proved to be minimal.

MONETARY POLICY AND FINANCIAL MARKET RESPONSE

THE COURSE OF MONETARY POLICY

Monetary policy in 1994 was formulated against a background of rapid economic growth and rising resource utilization but generally modest aggregate price increases. The FOMC increased reserve pressures at five of eight meetings and once between meetings, resulting in a cumulative increase of 2½ percentage points in the federal funds rate (Table 1). Asymmetric directives indicating a greater likelihood that future changes in policy would be toward restraint were adopted at the three meetings where no change was made to existing pressures. Meanwhile, the Board of Governors approved three increases in the discount rate totaling 1¾ percentage points. When determining the stance of policy, the FOMC continued to monitor a broad range of economic and financial indicators. Annual targets were still set for the broader monetary aggregates, but the FOMC placed limited weight on the aggregates because of the considerable uncertainty that persisted about the behavior of their velocities.¹

Economic background

The economic expansion remained on solid footing throughout 1994, with personal consumption, business investment, and inventory accumulation the mainstays of growth (Table 2). Consumer outlays for durable goods were particularly robust, and producers' durable equipment purchases remained strong for the third consecutive year. The rate of inventory investment picked up over the first two quarters and remained at relatively high levels for the rest of the year. The pace of expansion was moderated by developments in other sectors: residential construction activity cooled off as the year progressed, government expenditures trended lower, and the trade balance remained a modest drag. Despite these offsetting factors, by year-end the

Table 1

SPECIFICATIONS FROM DIRECTIVES OF THE FEDERAL OPEN MARKET COMMITTEE AND RELATED INFORMATION

Date of Meeting	Specified Short-Term Growth for M2 and M3	Discount Rate (Percent)	Borrowing Assumption for Deriving Nonborrowed Reserve Path (Millions of Dollars)	Associated Federal Funds Rate ^a (Percent)	Effect on Degree of Reserve Pressure	Guidelines for Modifying Reserve Pressure between Meetings ^b
12/21/93	Moderate growth over coming months	3	50	3	Maintain	Slightly greater reserve restraint or slightly lesser reserve restraint <i>might</i> be acceptable.
2/3 to 2/4/94	Moderate growth over the first half of the year	3	50 75 on 2/4 ^d	3¼	Increase slightly	"
3/22/94	Moderate growth over the first half of the year	3	75 100 on 3/23 ^d 125 on 4/18 ^d 150 on 5/5 ^c 175 on 5/12 ^c	3½ 3¾ on 4/18	Increase slightly	"
5/17/94	Modest growth over coming months	3½	175 ^c 200 on 5/19 ^c 225 on 5/26 ^c 325 on 6/23 ^c	4¼	Increase somewhat	"
7/5 to 7/6/94	Modest growth over coming months	3½	325 375 on 7/7 ^c 425 on 7/21 ^c 450 on 7/28 ^c	4¼	Maintain	Slightly greater reserve restraint <i>would</i> be acceptable; slightly lesser reserve restraint <i>might</i> be acceptable.
8/16/94	Modest growth over coming months	4	450 ^c 475 on 8/18 ^c 500 on 8/25 ^c 475 on 9/1 ^c	4¾	Increase somewhat	Slightly greater reserve restraint or slightly lesser reserve restraint <i>would</i> be acceptable.
9/27/94	Modest growth over the balance of the year	4	475 450 on 10/6 ^c 425 on 10/13 ^c 375 on 10/20 ^c 325 on 10/27 ^c 275 on 11/3 ^c 225 on 11/10 ^c	4¾	Maintain	Somewhat greater reserve restraint <i>would</i> be acceptable; slightly lesser reserve restraint <i>might</i> be acceptable.
11/15/94	Modest growth over coming months	4¾	225 ^e 175 on 11/24 ^c 125 on 12/8 ^c	5½	Increase significantly	Somewhat greater reserve restraint or somewhat lesser reserve restraint <i>would</i> be acceptable.
12/20/94	Modest growth over coming months	4¾	125	5½	Maintain	Somewhat greater reserve restraint <i>would</i> be acceptable; slightly lesser reserve restraint <i>might</i> be acceptable.

^a The trading area for the federal funds rate that is expected to be consistent with the borrowing assumption.

^b Modifications to reserve pressures are evaluated "in the context of the Committee's long-run objectives for price stability and sustainable economic growth, and giving careful consideration to economic, financial, and monetary developments."

^c Change in borrowing assumption reflects technical adjustment to account for actual or prospective behavior of seasonal borrowing.

^d Change in borrowing assumption reflects adjustment to reserve pressures.

^e The assumption was unchanged because the full effect of the discount rate increase was allowed to show through to the market.

Table 2
OUTPUT AND PRICES
 Seasonally Adjusted Annual Rates of Change, Except as Noted

	1993 IV	1994				1992-IV to 1993-IV	1993-IV to 1994-IV
		I	II	III	IV		
Output							
Real GDP	6.3	3.3	4.1	4.0	5.1	3.1	4.1
Change in inventory accumulation ^a	-2.2	14.6	33.8	-2.1	-7.7	4.2	38.6
Final sales	6.4	2.2	1.5	4.3	5.7	3.0	3.4
Consumption	4.0	4.7	1.3	3.1	5.1	3.0	3.5
Durables	15.5	8.8	0.4	5.8	20.4	9.0	8.6
Nondurables	2.4	3.8	2.2	3.3	3.1	1.3	3.1
Services	2.0	4.0	1.1	2.2	2.3	2.5	2.4
Producers' durable equipment	27.5	18.6	6.1	18.1	19.6	21.3	15.5
Nonresidential structures	3.3	-11.8	20.6	1.6	11.0	1.6	4.6
Residential fixed investment	28.2	10.0	7.0	-6.0	2.3	8.1	3.1
Change in net exports ^a	4.1	-21.8	-7.8	-5.2	9.9	-43.7	-24.9
Government purchases	-0.1	-4.9	-1.2	6.7	-4.1	-1.0	-1.0
Addenda							
Savings rate (percent of disposable income)	4.0	3.6	4.1	4.1	4.6	-2.2 ^b	0.6 ^b
Industrial production	5.3	7.0	6.2	4.9	6.0	3.6	6.0
Capacity utilization rate (level)	82.3	83.2	83.8	84.3	84.9	1.2 ^b	2.6 ^b
Civilian unemployment rate (level)	6.5	6.6	6.2	6.0	5.6	-0.8 ^b	-1.0 ^b
Change in nonfarm payroll employment (thousands)	608	613	1,019	913	873	2,235	3,418
Change in manufacturing payrolls (thousands)	-9	31	47	59	105	-119	242
Prices							
Consumer price index							
Total	3.3	2.1	2.6	3.6	2.2	2.7	2.6
Excluding food and energy	2.8	2.9	3.0	3.0	2.3	3.1	2.8
Producer price index							
Finished goods	-0.1	2.7	0.2	2.1	0.3	0.2	1.3
Excluding food and energy	-0.6	2.9	1.9	1.9	0.0	0.2	1.7
Intermediate goods	0.8	2.2	1.6	5.0	6.5	1.1	3.8
Implicit GDP deflator	1.3	2.9	2.9	1.9	1.3	1.8	2.3
Fixed-weight GDP index	2.6	2.9	3.2	2.8	2.8	2.8	2.9
Employment cost index	3.4	3.0	3.3	3.3	2.6	3.4	3.1

Note: Data are as of April 12, 1995.

^a Billions of 1987 dollars.

^b Change in rate.

rapid pace of output expansion had brought resource utilization rates up to levels associated historically with rising inflationary pressures. The unemployment rate fell to 5.4 percent in December, and the industry operating rate stood at 85.4 percent.

Although the slack in the economy steadily diminished, aggregate price increases for final goods and services remained modest. Inflation, as measured by the fixed-weight GDP deflator and the consumer price index, showed no deterioration; increases in producer prices for finished goods remained low; and labor cost increases were restrained. Nonetheless, evidence accumulated that price pressures could be intensifying. Producer price increases at the intermediate stage of production accelerated, and manufacturers increasingly reported paying higher prices for their inputs.

Policy initiatives

The initial monetary policy move came at the February FOMC meeting; it represented the first change in reserve conditions since September 1992 and the first move toward tightening since early 1989. The Committee adopted a limited measure, associated with a ¼-percentage-point rise in the federal funds rate, because of the likelihood that this first step toward firming policy in some years might be magnified in the financial markets. At the same time, it was felt that this action would effectively signal the Committee's anti-inflation intentions.

In a departure from past practice, the Chairman of the FOMC issued a brief public statement announcing this policy decision in order to avoid misinterpretation of the Committee's actions by market participants. Similar brief statements were issued on a case-by-case basis to announce the other FOMC policy changes during 1994.²

The Committee raised reserve pressures slightly further at its March meeting, with the federal funds rate expected to rise another ¼ percentage point. The Committee again limited the size of the move to avoid any overreaction in the financial markets. A third slight upward adjustment in reserve pressures was made between meetings in mid-April. At the May meeting, with the economy evidently expanding on a solid and self-sustaining basis, the FOMC voted to have the full ½-percentage-point increase in the discount rate that had been approved that day by the Board of Governors show through to reserve conditions. The Committee felt that financial markets could absorb this more aggressive policy adjustment. The Federal Reserve press release announcing these moves stated that "these actions, combined with the three adjustments initiated earlier this year by the FOMC, substantially remove the degree of monetary accommodation that prevailed throughout 1993."

At the conclusion of the July FOMC meeting, at which no policy change was initiated, a Federal Reserve press spokesperson indicated that the meeting had adjourned and that no further

announcement would be made. The Committee authorized this step to avoid uncertainty about its intentions. Similar statements were authorized following the other two Committee meetings at which no rate actions were taken.

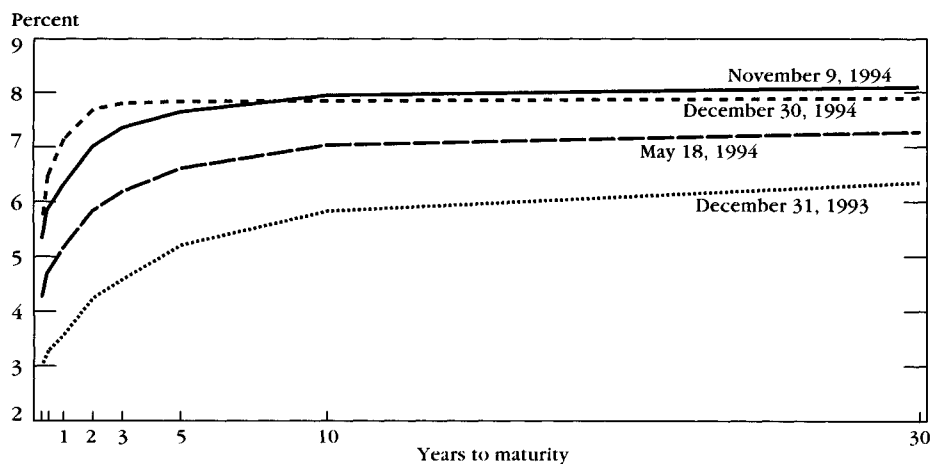
The FOMC next raised reserve pressures at its August meeting, when the full amount of a ½-percentage-point hike in the discount rate approved by the Board that same day was passed through to reserve markets. A Federal Reserve press statement indicated that “these measures were taken against the background of evidence of continuing strength in the economic expansion and high levels of resource utilization,” and went on to add that “these actions are expected to be sufficient, at least for a time, to meet the objective of sustained, noninflationary growth.”

The economy continued to display considerable forward momentum over the autumn, and there was some sense that past policy actions might be having less effect than expected, even in sectors believed to be especially sensitive to interest rate increases. At its November meeting, the Committee agreed that a substantial firming in policy was appropriate. In its final policy move of the year, the Committee voted to pass through to reserve conditions the full effect of a ¾-percentage-point hike in the discount rate approved that day by the Board of Governors.

FINANCIAL MARKET DEVELOPMENTS

Interest rates across the maturity spectrum rose sharply in 1994. Yields on Treasury coupon securities ended the year 150 to nearly 350 basis points higher than they were a year earlier, while the coupon yield curve flattened substantially (Charts 1-2).

Chart 1
YIELD CURVES FOR SELECTED U.S. TREASURY SECURITIES

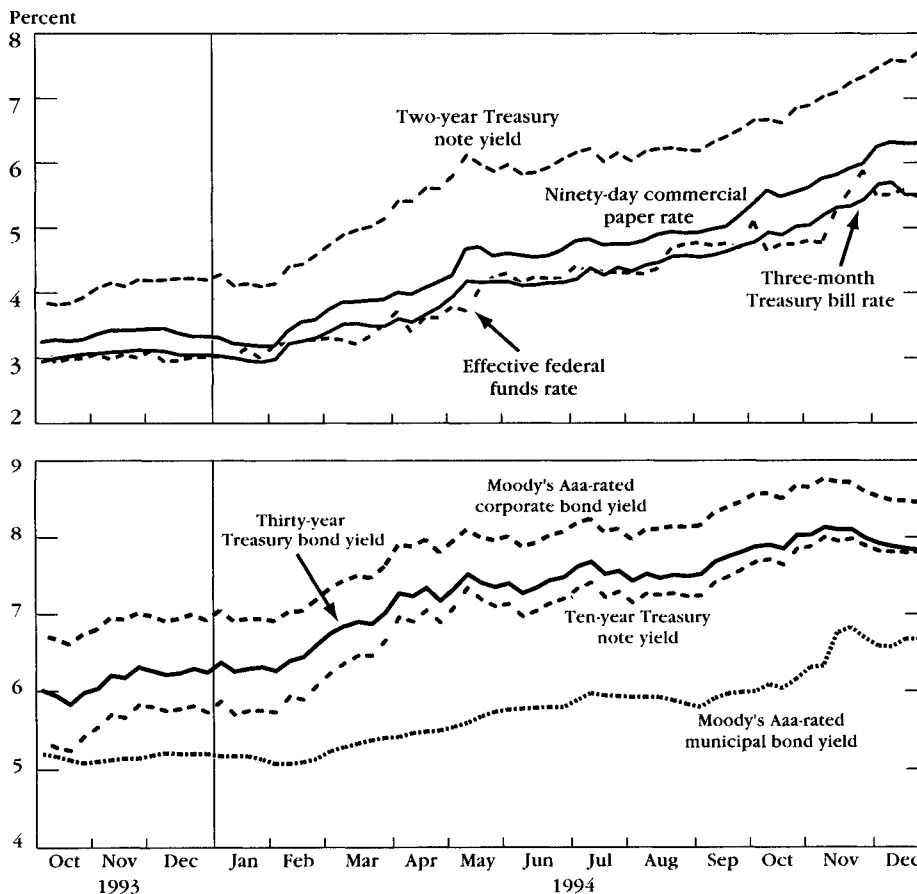


Notes: Treasury bill yields are on a bond-equivalent basis. Coupon yields are constant maturity values.

Yields rose dramatically in the first few months after the Federal Reserve began to tighten policy in early February. By mid-May, the yield on two-year Treasury notes had risen about 180 basis points, and the thirty-year bond yield was up more than 110 basis points. Market analysts sensed that the economy retained significant forward momentum and anticipated that the Federal Reserve would respond forcefully to ward off inflationary pressures. Consequently, rates on many short- and intermediate-term securities rose, and a wide spread emerged between these yields and the federal funds rate.

Longer term yields also rose as investors grew anxious over whether the gains made in reducing

Chart 2
SHORT- AND LONG-TERM INTEREST RATES



Notes: All rates are averages for weeks ending Wednesdays. Treasury bill rates are discount rates; note and bond yields are constant maturity yields. Moody's Aaa-rated corporate bond and municipal bond yields are based on issues with an average maturity of twenty years.

inflation in recent years might begin to erode. Market participants focused on the inflation risks posed by the shrinking degree of economic slack, and they were disturbed by information appearing in manufacturers' surveys, as well as evidence from commodity price movements, that suggested an intensification of price pressures. Rising interest rates in European countries and weakness in the dollar spilled back and reinforced the upward momentum in domestic yields. Hedging activity in the mortgage-backed-debt market, a sector particularly hard hit by the sharp rise in yields, lifted rates on intermediate-term Treasury securities.³

From mid-May through August, yields moved in a broad trading range. Large rate movements were often followed by abrupt reversals, a pattern that resulted in generally small net changes. Investors responded to economic data that presented a mixed picture. Episodes of dollar weakness continued to weigh on sentiment, as they did intermittently throughout the year. Meanwhile, the monetary policy adjustments in May and August were believed to have brought policy to a more neutral position, and they encouraged brief rallies in debt markets.

Driven largely by a spate of strong economic statistics, interest rates across most maturities resumed their climb from September to early November, rising by 65 to 85 basis points. Measures of resource utilization notched higher, and a string of reports showing a resilient housing sector raised questions about the impact of previous interest rate hikes. Survey results of input price pressures faced by manufacturers continued to flash warning signals. By late autumn, it was widely felt that the economy was bumping up against its long-run capacity limits, and many traders began to fear that the Federal Reserve was falling behind in its efforts to rein in inflationary pressures. In late October, the yield on the most recently auctioned thirty-year Treasury bond exceeded 8 percent for the first time in more than two years.

From just before the November FOMC meeting until year-end, the Treasury coupon yield curve flattened further. Short-term Treasury coupon yields rose by another 65 basis points, while long-term yields edged down about 20 basis points. The Committee's action in November, viewed by market participants as aggressive, and continued strong economic statistics convinced most analysts that further policy tightening moves were in store and put upward pressure on shorter term rates. Selling in the front end of the yield curve was exacerbated by liquidations and hedging of portfolios made unprofitable by higher interest rates. Adding to the pressure was the disposal of the securities held by the Orange County, California, Investment Pool after its steep financial losses became known.⁴ Meanwhile, the November policy action and continued favorable aggregate price statistics instilled confidence that the Federal Reserve would succeed in preventing a significant increase in inflation pressure. This expectation helped to bring down longer term yields.

The sharp increases in interest rates in 1994 also had profound effects on investor returns, financial flows, and issuance in the fixed-income markets (Table 3). Investors holding portfolios consisting of longer maturity securities sustained particularly heavy losses. The Lehman Brothers Long Treasury Bond Index fell 7½ percent, the first yearly decline in this measure since 1987 and the steepest decline in the twenty-two years spanned by the index. Net returns for most categories of bond mutual funds were negative in 1994, in many cases after the funds posted strong earnings the previous year. Throughout 1994, there were reports of institutions suffering steep financial losses in domestic securities markets. In some cases, the losses were linked to exposures to derivative instruments that magnified the effect of yield movements on interest payments.

Efforts to reduce exposure to rising interest rates spurred huge reinvestment flows in financial markets. Redemptions from bond mutual funds soared following a year of heavy inflows, and withdrawals frequently outpaced inflows as investors reacted to reports of poor performance. The growth in noncompetitive awards at Treasury auctions suggested that many participants began to redirect their investments into securities markets. A heightened sense of uncertainty in financial markets accompanied these elevated flows. Implied price volatility in longer term

Table 3

MEASURES OF PERFORMANCE AND ACTIVITY IN DOMESTIC SECURITIES MARKETS

	<u>1994</u>	<u>1993</u>
Portfolio returns (percent)		
Longer run Treasury issues	-7.6	17.3
Mutual funds		
Intermediate-term Treasury debt	-3.3	9.8
Short-term Treasury debt	0.0	5.8
Intermediate-term corporate debt	-3.4	9.5
High-yield corporate debt	-3.9	19.0
General municipal debt	-6.5	12.4
Gross debt issuance (billions of dollars)		
Investment-grade corporate debt	206	266
Below-investment-grade corporate debt	27	56
Municipal securities	154	280
Financial flows (billions of dollars)		
Net bond mutual fund inflows	-44	114

Sources: Returns on longer run Treasury issues are based on the Lehman Brothers Long Treasury Bond Index and reflect changes in principal value and coupon income. Returns for the various categories of mutual funds are from Lipper Analytical Services, Inc. Debt issuance data are from Securities Data Company. Mutual fund flow data are from the Investment Company Institute.

Treasury issues was substantially higher in 1994 than in 1993 (Chart 3). Meanwhile, new issuance in major sectors dropped significantly, in part reflecting higher borrowing costs.

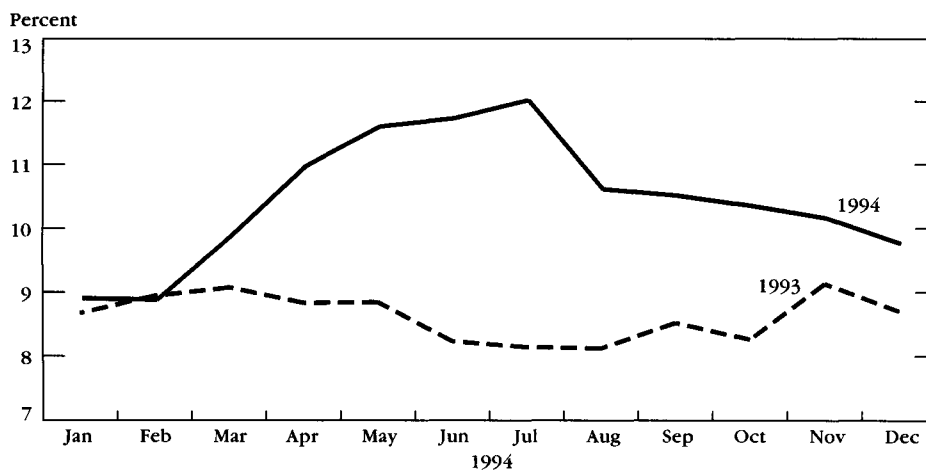
IMPLEMENTATION OF POLICY

OPERATING PROCEDURES

In 1994, the FOMC continued to express its policy directives in terms of a desired degree of reserve pressure. Reserve pressure effectively refers to the costs and other conditions under which the Federal Reserve makes reserves available to the banking system. The FOMC has informally used the federal funds rate as a guide for evaluating conditions of reserve availability since the late 1980s.

In addition, the FOMC has continued to express reserve pressures in terms of borrowed reserves, an approach that involves using nonborrowed reserves to satisfy most, but not all, of the demand for reserves, while forcing banks to meet remaining needs at the discount window, where access is rationed. When the FOMC has increased (or reduced) reserve pressures without a change in the discount rate, expected borrowing has been adjusted upward (or downward) accordingly. The adjustments have been based on the premise that the more the banks are forced to borrow at the discount window to meet their demand for reserves, the more they will bid up the federal funds rate relative to the discount rate.

Chart 3
IMPLIED VOLATILITY OF TREASURY BOND FUTURES PRICES



Source: Bloomberg L.P.

Notes: Chart presents the monthly averages of daily price volatility for at-the-money call options. All prices are for near-month futures contracts.

In the late 1980s, however, the relationship weakened appreciably, in part because a series of banking crises had encouraged observers to associate discount window borrowing with financial difficulties. As a result, banks became extremely reluctant to borrow. Although the banking crises have passed and the association of discount window borrowing with financial problems presumably has faded somewhat, banks apparently still have a reluctance to utilize their borrowing privileges. Consequently, if borrowing were forced to higher levels, the federal funds rate probably would rise substantially more than it had in the past. Against this background, the Desk has continued to develop objectives for nonborrowed reserves calculated as estimated demands for total reserves less the allowance for adjustment and seasonal borrowing. Whenever actual discount window borrowing has differed significantly from the allowance, however, the Trading Desk has accepted the deviation and informally modified the nonborrowed reserve objective accordingly, rather than force unwanted changes in the federal funds rate.⁵

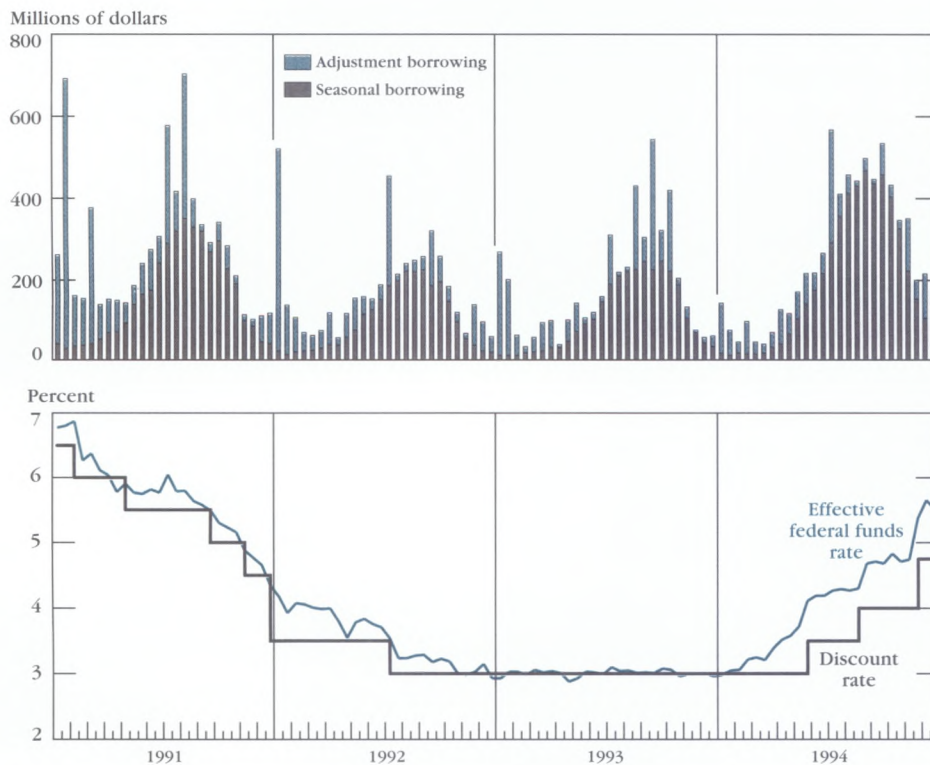
Between February and April, the FOMC's reserve tightening actions lifted the anticipated spread between the federal funds and discount rates from zero, where it had been since September 1992, to 75 basis points. The spread remained at 75 basis points for the balance of the year because the last three policy steps involved equal changes in both rates. (Actual levels of borrowing and the effective federal funds and discount rates are presented in Chart 4.)

With this widening of the spread, borrowing could have been expected to increase significantly. However, adjustment borrowing actually decreased slightly in 1994, averaging \$65 million a day compared with \$75 million a day in 1993. Although the decrease is outwardly surprising, closer examination of the data shows some indications of the expected association between borrowing and the funds rate. Adjustment borrowing did pick up on reserve-period settlement days, and it rose for most size classes of banks. Settlement-day adjustment borrowing averaged \$336 million in 1994, almost double the \$180 million average in 1993. Adjustment borrowing on nonsettlement days by small- and medium-sized banks also increased in 1994, although by less than would have been expected on the basis of historical relationships from the early 1980s. Some of the shortfall in borrowing likely reflected a continuing reluctance to utilize the discount window, but the strong liquidity positions of many of these banks also may have played a role. Small- and medium-sized banks usually account for a considerable portion of nonsettlement-day borrowing.

The decline in average borrowing resulted entirely from a reduction in nonsettlement-day borrowing by large money center banks. These banks have traditionally concentrated their borrowing on settlement days, and in 1994 all of their borrowing occurred on those days. By contrast, members of this group borrowed seven times on nonsettlement days in 1993, either because of operational difficulties or temporarily elevated funds rates.

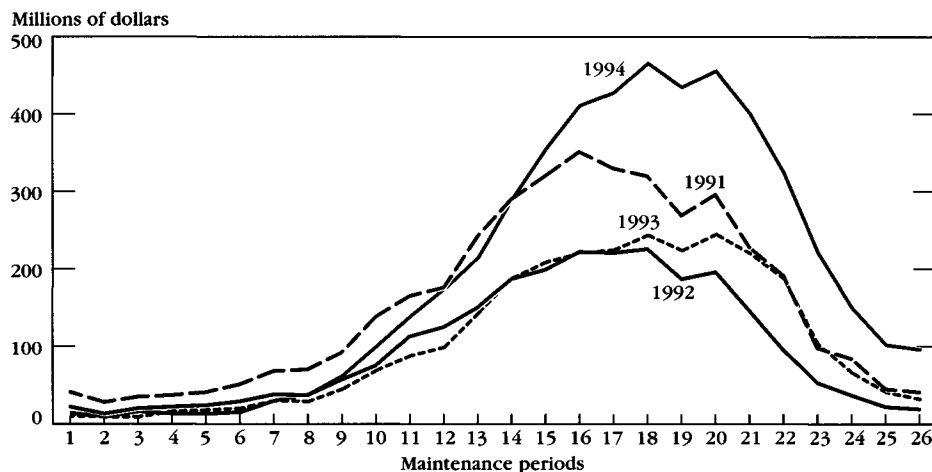
In the case of seasonal borrowing, the rate incentive for stepped up borrowing in 1994 was small because the rate charged on seasonal borrowing closely tracked federal funds and certificate of deposit rates. Nonetheless, seasonal borrowing was persistently higher than in recent years; it averaged \$193 million in 1994, compared with \$109 million the year before. It still followed the typical seasonal pattern, which reflected demands for agricultural loans (Chart 5). As a result, the Desk made ten upward technical adjustments to the formal borrowing allowance between May and August 1994 and nine downward adjustments over the remainder of the year. The increased use of the program was related in part to a marked rise in demand for farm credit at small banks. In addition, strong loan demand at midwestern correspondent banks might have constrained the correspondents' ability to provide seasonal funding to their respondent banks.⁶

Chart 4
**BORROWING AND THE BEHAVIOR OF THE FEDERAL FUNDS RATE
 AND THE DISCOUNT RATE**
 Maintenance Period Averages



Note: Discount rate reflects Federal Reserve Bank of New York rate.

Chart 5
SEASONAL BORROWING



Notes: Data are maintenance period averages and are not seasonally adjusted. For each set of annual observations, period 1 covers the end of the preceding year.

THE DESK'S APPROACH TO RESERVE MANAGEMENT⁷

Reserve patterns over the year

The behavior of narrowly defined money, M1, had an important influence on reserve supplies and demands over the year.⁸ Currency registered another year of strong growth, and the resulting record \$37 billion increase in currency in circulation was the primary factor behind the substantial need to provide reserves in 1994.⁹ A decline in the deposit component, however, limited the overall growth of M1 and contributed to a fall in the demand for reserves. Consequently, required reserves, the primary source of demand, slipped by about \$2 billion, reducing the need to add reserves over the year.

Several other factors also modestly reduced the Desk's need to provide reserves. Applied vault cash, a source of supply, increased by about \$3 billion, in part mirroring the currency expansion. Rising interest rates led banks to cut their required clearing balances by about \$2 billion as the rate at which they accumulated earned income credits rose.¹⁰ Because the declines were not offset by higher excess reserves, the lower clearing balances lessened the overall need to provide reserves. These balances had been increased sharply in 1991 and 1992, when banks were adapting to lower required reserve levels, and had been lifted modestly in 1993.¹¹ On balance, cumulative changes in other supply and demand factors had smaller effects on total reserve needs over the year.¹²

Outright transactions and changes in the System portfolio

The Trading Desk met the ongoing need to add reserves by increasing the Federal Reserve System's portfolio of U.S. government securities. Altogether, the Desk purchased about \$25 billion through six operations conducted in the market, four of them involving Treasury coupon issues.¹³ As in the past, the market entries were arranged when available forecasts suggested that large reserve shortages would persist for at least several maintenance periods. The market purchases were supplemented by nearly \$11 billion of acquisitions from foreign accounts, almost entirely Treasury bills. These purchases, typically modest in size, were arranged when orders were compatible with estimated reserve needs.

For a second consecutive year, the Desk did not sell securities, although it did redeem some. Because the Treasury no longer sells seven-year notes, the System's holdings of these notes must be redeemed early in each quarter as they mature; over \$2 billion came due in 1994. The Desk also redeemed agency securities when no suitable replacement securities were offered and when issues were called. Holdings of these issues fell for the fourteenth year in a row, declining by almost \$1 billion, to \$3.6 billion.

As a result of the Desk's outright activity, total holdings in 1994 grew by \$32 billion, to \$376 billion. Although somewhat less than the record rise of 1993, this increase was still the second highest ever. Slightly more than half of the increase occurred in Treasury bills, while growth in coupon holdings was strongest in the one-to-five-year sector. Consequently, the weighted average maturity of the System's holdings was virtually unchanged in 1994.¹⁴

Temporary operations

The Desk used self-reversing operations to meet the reserve shortages that developed between its outright operations and to address reserve imbalances created by short-lived movements in other factors affecting reserves. Almost all of the temporary operations in 1994 added reserves because of the underlying growth in reserve shortages and the Desk's preference for letting deficiencies build to a sizable level before arranging outright purchases. In fact, the Desk entered only one maintenance period facing an estimated need to drain more than a very small amount of reserves, and even that surplus was subsequently erased by revisions to forecasts of operating factors. Consequently, only five matched sale-purchase agreements were arranged all year, and none exceeded one business day.

All told, the Desk arranged \$362 billion of repurchase agreements (RPs) for the System and \$113 billion that were customer-related. The number and average size of multiday System RPs both fell in 1994. Several factors contributed to these declines. A greater share of the year's

reserve needs was met with outright operations: the Desk typically made outright purchases that left a remaining estimated need to be met with RPs, but on several occasions actual needs fell below the estimated needs. In addition, the Desk further increased its use of fixed-term operations in 1994 (discussed below), reducing the need for replacement RPs to offset early withdrawals.

Managing reserves within a maintenance period

When developing strategies for each maintenance period, the Desk took into account the estimated day-to-day distribution of reserve shortages or excesses, the potential for revisions to reserve estimates, and bank reserve management strategies.¹⁵ The Desk generally met each period's reserve needs gradually in order to accommodate sometimes uneven reserve distributions and possible revisions. It often arranged a series of multiday RPs, many of which matured in three or four days. The Desk also continued to be guided by the federal funds market. When faced with conflicting information between the funds rate and forecasts of reserve supply and demand, the Desk had to evaluate which indicator was likely to provide the more reliable information about reserve availability.

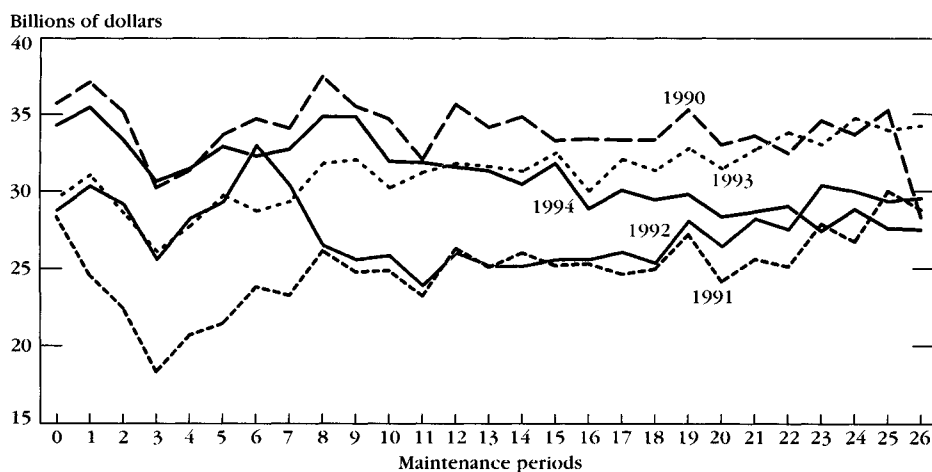
Banks' reserve management strategies can affect the funds rate because they influence reserve demands within a maintenance period. As several previous reports have explained, the cuts in reserve requirement ratios made between 1990 and 1992 reduced the level of required operating balances at the Federal Reserve.¹⁶ These lower levels increased the likelihood that depository institutions would be unable to eliminate unwanted excess positions without running an overnight overdraft. Consequently, in the early 1990s, depositories tended to concentrate their reserve holdings late in a period, showing particular caution about holding excess reserves over the weekend, when reserves count for three days. This reluctance to hold reserves over a weekend was the main contributor to soft funds rates on Fridays.

In 1994, banks used these reserve management practices less aggressively. By the end of 1993, rapid growth in required reserves and clearing balances had restored required operating balances to the levels prevailing right before the initial round of cuts in reserve requirement ratios in late 1990 (Chart 6). Perhaps as a result, the distribution of demands for excess reserves within a maintenance period appeared less skewed in 1994 than it had been in the preceding three years.¹⁷ Moreover, the degree of softness on Fridays was typically slight. Nonetheless, banks were still reluctant to accumulate large excess reserve holdings early in a maintenance period. By the end of 1994, the level of required operating balances had once again fallen back to the lower levels seen in late 1991 and in 1992, thus reducing banks' reserve management flexibility. This decline reflected the drops in required reserves and clearing balances and the expansion in applied vault cash noted earlier.

The Desk further increased its use of fixed-term RPs on Thursdays to run through the weekend, a strategy that avoided the risk of large early withdrawals on Fridays if the federal funds rate traded to the soft side while a large reserve need remained. The Desk believed that if withdrawable RPs had been arranged on a Thursday, dealers probably would have opted to refinance at lower rates the next day, forcing the Desk to find another opportunity to add back the reserves. The Desk also expanded the use of fixed-term RPs on the first Monday through Wednesday of each period, again to avoid unwanted withdrawals and to reduce the number of operations.¹⁸ Withdrawable RPs were still useful at times, particularly when the Desk felt that operating factors or required reserves might turn out to be sufficiently different from estimates to sharply reduce or eliminate the estimated reserve need. Thus, withdrawable RPs continued to be used over the final few days of many maintenance periods.

Market speculation during the year that monetary policy might be tightened sometimes put upward pressure on the federal funds rate that did not seem justified by estimates of reserve imbalances. The Desk remained sensitive to these situations when formulating its operations strategy to avoid any misunderstanding by market participants, who continued to view open market operations as a possible indicator of policy shifts.¹⁹ Consequently, on several occasions when the funds rate was very high, the Desk arranged overnight System RPs, in part to prevent any perception that it was either paving the way for a firming in policy or hinting at a Commit-

Chart 6
REQUIRED OPERATING BALANCES



Notes: Data are maintenance period averages. For each set of annual observations, period 0 is equal to the last complete maintenance period of the preceding year. Period 1 is the maintenance period that spans the year-end.

tee inclination to change policy.²⁰ As the year progressed and market analysts began to assume that the FOMC would indicate its policy actions through a public announcement, market participants came to feel that the Desk's open market activities were less likely to be used to communicate policy shifts. This perception gave the Desk more flexibility in selecting its operations to meet its reserve objectives.

Trading Room Automated Processing System

In 1994, the Desk began arranging its open market operations using the Trading Room Automated Processing System (TRAPS). Under TRAPS, the Desk announces reserve operations and dealers respond with their propositions through Fedline terminals. The system is also used to process operations and to notify dealers of the results. The Desk started using TRAPS for its temporary operations in July, followed in August by the first outright market purchase using the system.

DAYLIGHT OVERDRAFT PRICING

On April 14, the Federal Reserve began charging banks a fee of 10 basis points on overdrafts incurred in their reserve accounts during the day.²¹ Previously, daylight overdrafts had been subject to size limitations related to a bank's capital, but they were not subject to charges. For a few banks, such daylight overdrafts were substantial. The Trading Desk anticipated that the charges might affect its own operations by encouraging changes in the functioning of the federal funds and RP markets and in some banks' reserve management techniques. In preparation for pricing daylight overdrafts, Federal Reserve personnel had conversations with market participants and undertook some contingency planning. As it turned out, however, Desk operations were minimally affected in 1994.

Before charges were assessed for daylight overdrafts, reserve management was focused on end-of-day reserve balances rather than on intraday balances. End-of-day balances are important because they meet reserve requirements. Furthermore, banks need reserve balances at the end of the day to avoid overnight overdrafts and their associated stiff charges. In fact, total reserve balances vary considerably during the day, rising whenever the Federal Reserve or any entity maintaining an account at the Federal Reserve—the federal government, federally sponsored agencies, or foreign official institutions—makes payments and falling whenever it receives payments.²² The most dramatic movements in intraday balances, however, have been in the distribution of reserves, with large intraday balances occurring at some banks and huge overdrafts at others during part of the day.²³

The previous absence of fees had encouraged practices that resulted in large daylight overdrafts. For example, many financial market transactions, such as interbank federal funds and RP con-

tracts, did not specify transaction settlement times. Yet receipt and return times do influence the intraday distribution of reserves. In federal funds transactions, the sending bank controls the timing of the reserve transfer. Under daylight overdraft pricing, it was thought that banks facing intraday reserve charges might delay sending federal funds in order to increase their intraday balances. If Fedwire traffic became concentrated near the end of the day, the funds market could lose liquidity, thus making the rate a less reliable indicator of reserve availability.

In practice, however, after daylight overdraft pricing began, the average time for sending funds transfers over Fedwire moved only slightly later in the day. Apparently, many banks did not change their practices because they did not face large enough daylight overdrafts from their funds transactions to justify the cost of making changes. Federal funds brokers did report that some requests for transactions specified sending or returning funds during specific time periods and noted that some potential trades were rejected because the counterparty was reputed to be a "late sender." But these restrictions affected only a small portion of trades, and therefore did not impede market liquidity.

For securities transactions, the sender of the securities controls the transaction time. Consequently, banks lose reserve balances when they receive securities, but they cannot control the time at which that happens.²⁴ Dealers, who rely heavily on RPs to finance inventories, traditionally had their clearing banks send the securities to their counterparties' custody banks between late morning and early afternoon. Then, on the maturity date, the counterparties' banks typically returned the securities at the opening of business. The prevalence of this timing pattern caused both the dealers' and their banks' accounts to be overdrawn during the morning because the dealers began the day with small working balances. In anticipation of daylight overdraft pricing, the clearing banks informed their customers that they would pass on the overdraft charges.

Dealers indicated in conversations with the Federal Reserve that they planned to speed up their negotiation and processing of RPs in the morning so that any securities being returned and then refinanced would leave their accounts more quickly. Some participants predicted that this speedup in RP operations would cause the market to be liquid only briefly early in the morning. Such a development was of particular concern to the Federal Reserve because the Desk's temporary open market operations are routinely executed around 11:30 a.m. The Federal Reserve had chosen that time because information about reserve levels is received and analyzed gradually over the morning. Only part of the data flow could be accelerated. If the Desk were forced to arrange its open market operations a couple of hours earlier, it would have to base its decisions on less reliable data.

To address these concerns, the Desk did make one change in its procedures: it delayed the return time for the collateral on its own maturing RPs from the opening of business until 11 a.m., thereby leaving reserves in the banking system for a larger part of the day. It was hoped that the later return time would encourage the dealers to participate in the late morning operations.

Once pricing began, the RP market did experience a shift toward somewhat more morning activity, but a number of customers continued to seek RP investments during the late morning and early afternoon, so market liquidity was retained. More rapid processing of trades has accounted for most of the reduction in peak and average overdrafts.²⁵ In addition, the volume of afternoon trades for next day delivery has increased.

The Desk saw essentially no change in participation rates in its RP operations after April. Dealers reported somewhat smaller inventories of securities left to be financed at midmorning, but on most days, they were nonetheless able to submit propositions of sufficient size for the Desk to accomplish its planned operations. Furthermore, dealers' customers increased their participation in Trading Desk operations.

APPENDIX A: THE MONETARY AGGREGATES

Growth of the broader monetary aggregates remained subdued in 1994. The FOMC voted in February to retain the growth ranges for M2 and M3 adopted on a preliminary basis the previous summer. These ranges were consistent with the expected slowing of nominal income and the anticipated continuation of the substantial velocity increases experienced in recent years. The FOMC reaffirmed these ranges in July. For the entire year, M2 advanced a mere 1.0 percent, at the lower end of its annual growth cone (Chart A1), while M3 rose only 1.2 percent, within the

Chart A1
M2: LEVELS AND TARGETS
Cones and Parallel Bands

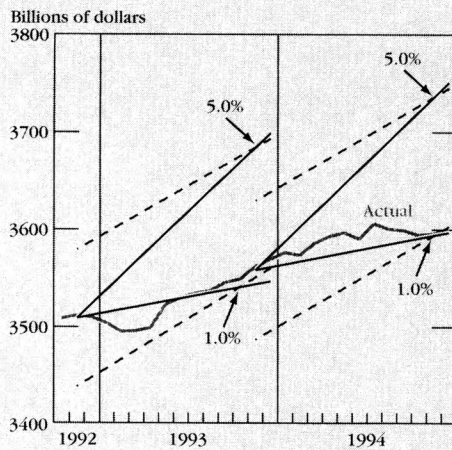


Chart A2
M3: LEVELS AND TARGETS
Cones and Parallel Bands

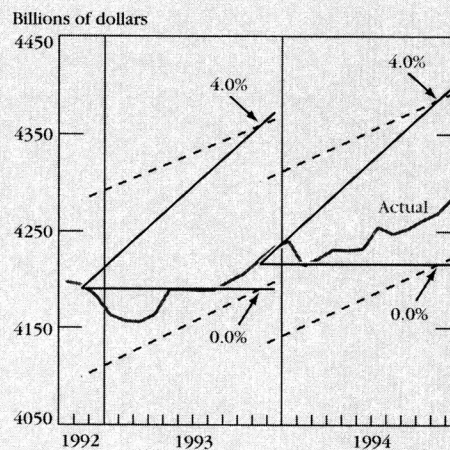


Chart A3
M1: LEVELS AND GROWTH RATES

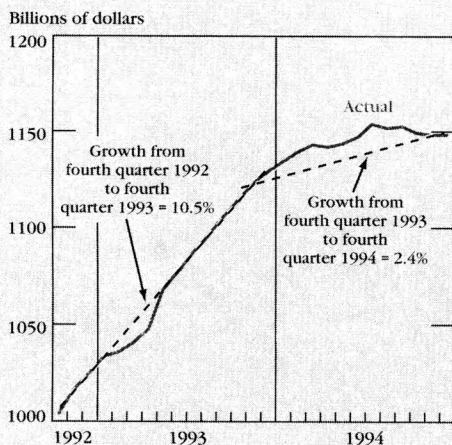
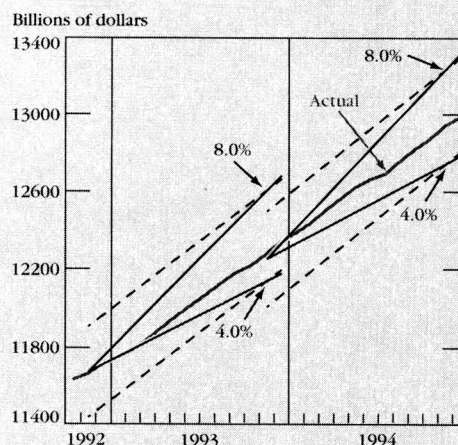


Chart A4
DOMESTIC NONFINANCIAL DEBT:
LEVELS AND MONITORING RANGES
Cones and Parallel Bands



lower half of its annual growth cone (Chart A2).²⁶ Growth in the broader aggregates was held down in 1994 by weakness in the liquid components, including savings and interest-bearing checkable deposits.²⁷ These deposits were relatively unattractive because depositories raised rates at a much slower pace than market rates rose.²⁸ The preference for market investments and the resultant increase in velocity were factors in the Committee's decisions to accept the weak aggregates.

Some components of the broader aggregates, however, did show strength. Depositories sharply increased their issuance of both overnight Eurodollars and RPs, thus lifting M2. In addition, during the second half of the year, issuance of consumer time deposits picked up, as did growth in retail money market mutual funds. M3 received some support from large time deposits and term RPs and Eurodollars, while institutional money funds were very weak early in the year but showed more robust growth later. The strength in some of these components reflected expanded bank funding needs. Total bank credit rose 6.8 percent in 1994, after having grown 5.0 percent the previous year. The increase was concentrated in bank lending; aggregate holdings of securities fell modestly on balance over the year.²⁹

After three consecutive years of rapid growth, M1 rose only 2.4 percent in 1994 (Chart A3). The slowdown in part reflected substantial increases in opportunity costs, which depressed deposits. Reduced mortgage refinancing activity also weakened demand deposits, and sweep programs initiated by several banks lowered other checkable deposits.³⁰ But currency, buoyed by heavy shipments overseas, registered another year of strong growth, expanding about 10 percent over the four quarters.

Finally, domestic nonfinancial debt grew by 5.3 percent in 1994 (Chart A4). The improved balance sheet condition of many borrowers supported growth of nonfederal debt. Total debt ended the year toward the lower end of its monitoring range.

APPENDIX B: RESERVE FORECAST ACCURACY

This appendix reviews the accuracy of staff forecasts of the factors affecting reserve supply and demand. For the year, the accuracy of the forecasts for required reserves was similar to that for 1993 at each stage of the maintenance period (see table). The Desk maintained a formal allowance of \$1 billion for excess reserves during each of the twenty-six maintenance periods in 1994, but it often made informal allowances when demand for excess reserves was expected to be above or below the path allowance.³¹

On average, the estimates available at the beginning of the period of the factors affecting the supply of nonborrowed reserves improved. The smaller forecast errors largely resulted from better estimates of the Treasury balance and less distortion from the treatment of premiums on RPs, while currency projections showed some deterioration.

There was a marked improvement in the first-day estimates of the Treasury's balance at the Federal Reserve in 1994, particularly around the important September and December tax payment dates. A surge in tax receipts can cause the Treasury's total cash holdings to exceed the capacities of the Treasury Tax & Loan (TT&L) note accounts at depository institutions, with any excess flowing into the Treasury's balance at the Federal Reserve. Forecasting the balance in the Federal Reserve account, therefore, can be particularly difficult around these times. In 1994, Treasury cash levels were above the capacity of the TT&L accounts on fourteen days, much less frequently than in 1993, when capacity was exceeded on thirty-two days. Two developments

APPROXIMATE MEAN ABSOLUTE ERRORS FOR VARIOUS FORECASTS OF RESERVES AND OPERATING FACTORS
Millions of Dollars

	1994			1993		
	First Day	Midperiod	Final Day	First Day	Midperiod	Final Day
Required reserves	285-340	160-170	40-65	290-335	160-180	55-65
Factors	710-750	425-465	65-75	785-885	420-465	55-70
Treasury	610	285-305	45-50	750-760	365-485	40-45
Currency	500-515	180-205	15-25	330-400	160-210	10-20
Float	220-250	140-160	25-45	245	150	35-65
Pool	240	90	10	270	110	15
Other items	190	90	35	250	135	20

Notes: A range indicates varying degrees of accuracy for the staff forecasts of the Federal Reserve Bank of New York and the Board of Governors. Values are rounded to the nearest \$5 million.

accounted for much of the difference: In September 1994, the capacity was about \$8 billion to \$10 billion higher than it was a year earlier, making room for more tax receipts. In December, approximately \$35 billion of Treasury cash management bills matured without replacement, compared with \$14 billion in December 1993. The enlarged maturities limited the size of the Treasury's total cash holdings.

Another factor reducing measured forecast errors was a decline in average premiums on RPs and on coupon securities purchased, elements in the "other items" category. The measured impact of any reserve transaction is based on the par value of the securities, although the actual impact depends on the market value of the securities. In practice, the Desk allows for possible net premiums (premiums less discounts) when they are expected to be large, so that the premiums do not constitute actual forecast misses. Average net premiums in 1993 had grown to 8 percent on all RPs and to 15 percent on market purchases of coupons as a result of falling interest rates. Because of rising interest rates in 1994, however, the average net premiums on securities held under RP fell back to about 2 percent of the par value, with discounts outweighing premiums on some operations. Average net premiums fell to 8 percent on coupons purchased in the market.

Currency projections at the beginning of maintenance periods deteriorated in 1994. Currency often behaved in a manner at odds with past seasonal patterns, which are used for forecasting purposes. In the first and last maintenance periods of 1994, typically times of large seasonal swings, currency drained fewer reserves than initially anticipated.

APPENDIX C: TABLES SUMMARIZING 1994 DESK ACTIVITY

The tables in this appendix support the text discussion of the Trading Desk's approach to reserve management in 1994. The operating factors affecting bank reserves appear in Table C1. The Desk's outright operations are summarized in Table C2, and the operations' effects on the System portfolio are presented in Tables C3 through C5. Temporary operations are reported in Table C6.

Table C1
RESERVE MEASURES AND FACTORS AFFECTING RESERVES

	Maintenance Period Ended January 4, 1995	Change during 1994 ^a 1993 ^b	
Bank reserves (millions of dollars, not seasonally adjusted)			
Nonborrowed reserves	61,372	-2,133	6,100
Borrowed reserves			
Adjustment plus seasonal	246	404	-127
Adjustment	151	25	-131
Seasonal	95	79	4
Required reserves ^c	60,451	-1,954	6,116
Excess reserves	1,167	-74	-144
System portfolio and operating factors (billions of dollars) ^d			
System portfolio and repurchase agreements outstanding ^e	385.3	31.5	36.2
Operating factors ^f			
Foreign currency ^f	17.3	-2.1	0.7
U.S. currency	403.0	-37.2	-31.5
Treasury balance	7.1	1.4	-1.1
Float	0.7	-0.5	-1.2
Special drawing rights	8.0	0.0	0.0
Gold deposits	11.1	0.0	0.0
Foreign deposits	0.2	-0.1	0.1
Applied vault cash	36.4	3.1	2.2
Other items	20.8	2.1	1.3
Foreign repurchase agreement pool ^g	8.1	-0.4	-0.2

Note: Figures may not add to totals because of rounding.

^a Change from maintenance period ended January 5, 1994, to that ended January 4, 1995.

^b Change from maintenance period ended January 6, 1993, to that ended January 5, 1994.

^c Not adjusted for changes in required reserve ratios.

^d Indicates impact of changes in operating factors on bank reserves. All items are biweekly averages.

^e Matched sale-purchase agreements with foreign accounts are added back in.

^f Acquisition value plus interest. Revaluations of foreign currency holdings are included in "other items."

^g Includes customer-related repurchase agreements.

Table C2

SYSTEM OUTRIGHT OPERATIONS BY TYPE OF TRANSACTION
AND COUNTERPARTY

Billions of Dollars

	<u>1994</u>	<u>1993</u>
Total outright	38.5	38.6
By type of transaction		
Purchases	35.3	36.9
Bills	17.5	17.7
Coupons	17.8	19.2
Sales	0.0	0.0
Bills	0.0	0.0
Coupons	0.0	0.0
Redemptions	3.2	1.7
Bills	0.0	0.0
Coupons	2.3	0.8
Agency issues	0.9	0.9
By counterparty		
Total outright in market	24.7	25.4
Purchases	24.7	25.4
Bills	7.7	8.6
Coupons	17.0	16.8
Sales	0.0	0.0
Bills	0.0	0.0
Coupons	0.0	0.0
Agency issues	0.0	0.0
Total outright with foreign accounts	10.6	11.5
Purchases	10.6	11.5
Bills	9.8	9.1
Coupons	0.8	2.4
Sales	0.0	0.0
Bills	0.0	0.0
Coupons	0.0	0.0

Note: Values are on a commitment basis.

Table C3

SYSTEM PORTFOLIO: SUMMARY OF HOLDINGS

Billions of Dollars

	Year-End 1994	Change during	
		1994	1993
Total holdings	376.2	32.1	35.3
Bills	185.4	17.5	17.7
Coupons	187.1	15.5	18.4
Agency issues	3.6	-0.9	-0.9

Notes: Values are on a commitment basis. Changes in holdings are from year-end to year-end. Figures may not add to totals because of rounding.

Table C4

SYSTEM PORTFOLIO OF TREASURY AND FEDERAL AGENCY SECURITIES

End of	Total Portfolio \$ Millions	Treasury Bills		Treasury Coupon Issues								Federal Agency Securities	
		\$ Millions	% ^a	Under One Year \$ Millions	% ^a	One-to-Five Years \$ Millions	% ^a	Five-to-Ten Years \$ Millions	% ^a	Over Ten Years \$ Millions	% ^a	\$ Millions	% ^a
1960	26,984	2,900	10.7	11,955	44.3	10,680	39.6	1,178	4.4	271	1.0	0	0.0
1965	40,478	9,101	22.5	15,478	38.2	14,066	34.7	1,448	3.6	385	1.0	0	0.0
1970	62,142	25,965	41.8	10,373	16.7	19,089	30.7	6,046	9.7	669	1.1	0	0.0
1975	93,290	37,708	40.4	8,730	9.4	30,273	32.5	6,425	6.9	4,082	4.4	6,072	6.5
1980	131,344	46,994	35.8	12,749	9.7	34,505	26.3	13,354	10.2	15,002	11.4	8,739	6.7
1985	190,072	89,471	47.1	20,179	10.6	35,650	18.8	14,785	7.8	21,759	11.4	8,227	4.3
1986	210,249	108,571	51.6	18,863	9.0	36,469	17.3	15,451	7.3	23,066	11.0	7,829	3.7
1987	231,243	112,475	48.6	22,966	9.9	47,512	20.5	15,313	6.6	25,424	11.0	7,553	3.3
1988	245,756	117,910	48.0	26,123	10.6	55,279	22.5	12,568	5.1	26,909	10.9	6,966	2.8
1989	235,566	106,847	45.4	28,883	12.3	54,076	23.0	12,529	5.3	26,706	11.3	6,525	2.8
1990	247,586	118,675	47.9	25,963	10.5	58,749	23.7	13,121	5.3	24,736	10.0	6,342	2.6
1991	278,628	138,732	49.8	30,542	11.0	64,299	23.1	14,469	5.2	24,540	8.8	6,045	2.2
1992	308,848	150,219	48.6	37,758	12.2	68,750	22.3	18,903	6.1	27,805	9.0	5,413	1.8
1993	344,105	167,936	48.8	35,423	10.3	79,826	23.2	24,659	7.2	31,739	9.2	4,522	1.3
1994	376,197	185,419	49.3	35,841	9.5	88,401	23.5	28,053	7.5	34,845	9.3	3,637	1.0

Notes: Figures may not add to totals because of rounding. Values are on a commitment basis.

^a As percent of total System Account portfolio.

*Table C5*WEIGHTED AVERAGE MATURITY OF MARKETABLE TREASURY DEBT
Months

End of	Federal Reserve Holdings ^a	Holdings outside Federal Reserve	Total Outstanding
1960	19	61	55
1965	16	70	60
1970	24	45	40
1975	31	34	33
1980	55	46	48
1985	49	61	59
1986	46	64	62
1987	44	69	66
1988	42	71	67
1989	43	73	69
1990	41	71	68
1991	38	72	68
1992	36	71	67
1993	38	68	65
1994	38	66	63

^a The effects of all outstanding temporary transactions, including repurchase agreements and matched sale purchase agreements with foreign accounts, are excluded from the calculation of the average maturity of the portfolio.

Table C6
SYSTEM TEMPORARY TRANSACTIONS

	1994		1993	
	Number ^a	Volume (\$ Billions)	Number ^a	Volume (\$ Billions)
Repurchase agreements				
System	92	362.0	0	510.5
Maturing next business day	26	104.9	0	149.5
Term	66	257.1	0	361.0
Fixed-term	44	175.3	31	127.2
Withdrawable	22	81.8	49	233.8
Customer-related	54	112.7	0	117.1
Matched sale-purchase agreements				
In market	5	13.1	0	10.9
Maturing next business day	5	13.1	0	7.2
Term	0	0.0	0	3.8
With foreign accounts ^b	251	1,688.2	0	1,464.1
Total temporary transactions	402	2,176.1	0	2,102.7
In market	151	487.8	0	638.6

Note: Figures may not add to totals because of rounding.

^a Number of rounds. If the Desk arranged repurchase agreements with two different maturities on the same day, the agreements are treated as one round. The Desk arranged such multiple repurchase agreements on two days in 1993; none were arranged in 1994.

^b Volumes exclude amounts arranged as customer-related repurchase agreements.

ENDNOTES

1. The behavior of the monetary aggregates and the Committee's targets for them are discussed in Appendix A.

2. Most announcements of policy changes were made early in the afternoon, shortly after the FOMC had completed its meeting. However, at the two-day meeting in February 1994, the announcement was made in the morning on the second day, soon after the Committee made its decision. In that instance, the Committee preferred to make the information available before the weekend and ahead of the Desk's regular 11:30 a.m. operating time. The one policy action taken between meetings was also announced in the morning.

In February 1995, the Committee formally adopted new procedures for conveying information to the public. The procedures include the announcement of all changes in the stance of monetary policy on the day the changes are made.

3. Higher interest rates extended the expected durations of mortgage-backed securities, thereby compounding the downward pressure on prices for this debt. Holders of mortgage-backed securities often hedge their exposures by selling intermediate-term Treasury debt.

4. Roughly \$20 billion of securities held by the highly leveraged Orange County fund were sold. Most of these securities were government agency notes, many of them derivative instruments that paid interest according to formulas based on movements in market yields.

5. The borrowing relationship has been discussed more extensively in previous annual reports of the Open Market Function.

6. Only small banks are eligible for the seasonal credit program.

7. Many of the statistics cited in this section appear in tables in Appendix C.

8. Changes in the components of M1 and the reasons for the components' behavior are described in Appendix A.

9. Currency in circulation, which is the factor that affects reserve balances, includes cash held by depository institutions; for money supply calculations, however, this vault cash is subtracted.

10. Earned income credits accumulate at a rate linked to the federal funds rate. The credits may be used only to pay for certain priced services provided by the Federal Reserve, and many large banks hold clearing balances sufficient to generate credits to pay for all the services they use. As

the rate at which the credits are earned increases, the maximum useful level of a bank's clearing balance decreases.

11. Technically, clearing balances are treated as a factor reducing the supply of reserves, although they are actually a source of demand for reserves.

12. The various foreign-exchange-related activities on the System's balance sheet drained less than \$0.5 billion. The historical value of the foreign currency sold was \$3.0 billion, about \$0.7 billion below the market value. The value of the System's foreign exchange holdings was increased by \$2.4 billion as a result of upward revaluations, while interest earnings totaled \$0.9 billion. In the reserve factor categories, interest earnings and the historical value of foreign currency transactions appear under "foreign currency," while revaluations and the profit or loss on foreign currency transactions appear in the "other items" category.

13. The Desk bought, in par values, \$3.3 billion of Treasury coupon securities on March 15, \$5.0 billion of coupons on April 12 (a record volume), \$3.8 billion of bills on June 1, \$4.5 billion of coupons on August 30, \$3.9 billion of bills on November 9, and \$4.2 billion of coupons on November 29.

14. The average maturity of the portfolio is also affected by the reinvestment choices made for maturing securities at auctions.

15. The accuracy of the staff forecasts for reserve supply and demand is reviewed in Appendix B.

16. Required operating balances are defined as required reserves plus required clearing balances less applied vault cash; they represent the working balances held by depository institutions at the Federal Reserve for supporting payment transactions.

17. The average levels of excess reserves in the first and second weeks of a maintenance period in 1994 were \$725 million and \$1,375 million, respectively. During 1993, the corresponding figures were \$170 million and \$1,980 million, and a similar distribution characterized 1992 after the round of reserve requirement cuts made in April of that year. Before December 1990, the distribution of excess reserves within the maintenance period was, on average, fairly even. Of course, Desk reserve provision strategies, which may not match ex ante demands, also contribute to the actual pattern of excess reserves.

18. A total of forty-four fixed-term RPs were arranged in 1994 (thirty of which were in place on Fridays), compared with thirty-one in the previous year (twenty-three covering Fridays). By contrast, just nine fixed-term operations had been arranged in 1992.

19. Misinterpretations did in fact arise. On February 3, with fed funds trading just $\frac{1}{16}$ of a percentage point above the level associated with the desired degree of reserve pressures, the Desk took no market action to affect reserves because a shortage was not seen. With an FOMC meeting scheduled to start later that day, and with expectations of a policy shift running high, some participants interpreted the Desk's inaction as indicating such a shift. In fact, this was not the case, although the FOMC did decide to firm pressures the following day. This episode occurred before the FOMC began to announce policy changes.

20. With expectations of an easing in policy almost entirely absent in 1994, the Desk felt freer to add reserves when called for by its reserve projections, even when the funds rate was slightly soft. It did so on numerous occasions.

21. The fee reflects an annual rate of 24 basis points using a standard ten-hour day for Fedwire operations. The charge is made on all end-of-minute overdrafts in excess of a deductible based on 10 percent of the bank's capital. The "Overview of the Federal Reserve's Payments System Risk Policy," published by the Federal Reserve System in October 1993, describes the calculations in detail.

22. Differences in posting times for check credits and debits also influence aggregate intraday reserve levels.

23. In the six months before daylight overdraft charges took effect, peak overdraft levels averaged \$124 billion. From mid-April through year-end, they averaged \$70 billion. To put the overdraft figures in perspective, total end-of-day reserve balances averaged \$34.5 billion and \$31 billion, respectively, over those two periods.

24. Under the delivery-versus-payment system used for the transfer of government securities, reserve balances are automatically moved from the account of the bank receiving the securities to that of the bank sending them when the transfer is processed.

25. Average daylight overdrafts fell from \$70 billion in the six months before pricing to \$43 billion over the balance of 1994.

26. The data on all the monetary aggregates are as of January 26, 1995, and do not reflect the annual seasonal factor and benchmark revisions of February 2. The earlier data are used because they more closely approximate the information the Committee had when it made its policy decisions. The revisions generally had a minimal effect on total growth over the year. On balance, the revisions redistributed a little more of the net increases in M1 and M2 into the first half of the year and shifted more of the growth in M3 into the second half of the year. The annual

changes of the monetary aggregates are measured from the fourth quarter of 1993 to the fourth quarter of 1994. Data on nonfinancial debt reported in this section are as of March 3, 1995.

27. The behavior of the monetary aggregates is described in more detail in the "Monetary Policy Report to the Congress Pursuant to the Full Employment and Balanced Growth Act of 1978" (Board of Governors of the Federal Reserve System), July 20, 1994, and February 21, 1995.

28. Investors moving out of mutual funds favored instruments not included in the aggregates, such as the direct purchase of Treasury debt. For this reason, and because of capital losses suffered by many funds, M2 plus bond and stock mutual funds rose less than 1 percent in 1994, an increase similar to that for M2 and well below the nearly 7 percent gain of the previous year.

29. Credit expansion was partially funded by bank borrowings from abroad, which nearly doubled over the year.

30. In January, one large regional bank initiated a sweep program that transferred funds from other checkable deposits into money market deposit accounts. Another large regional bank phased in a similar program during September and October. Altogether, these programs lowered M1 growth by about 1 percentage point in 1994. The sweep programs shifted funds between accounts included in M2 and therefore had no impact on the broader aggregates.

31. Excess reserves are estimated from a combination of models and observed behavior during maintenance periods. Any analysis of the accuracy of these estimates would be misleading because it would not take account of the informal revisions.

TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE OPERATIONS FOR 1994: AN OVERVIEW

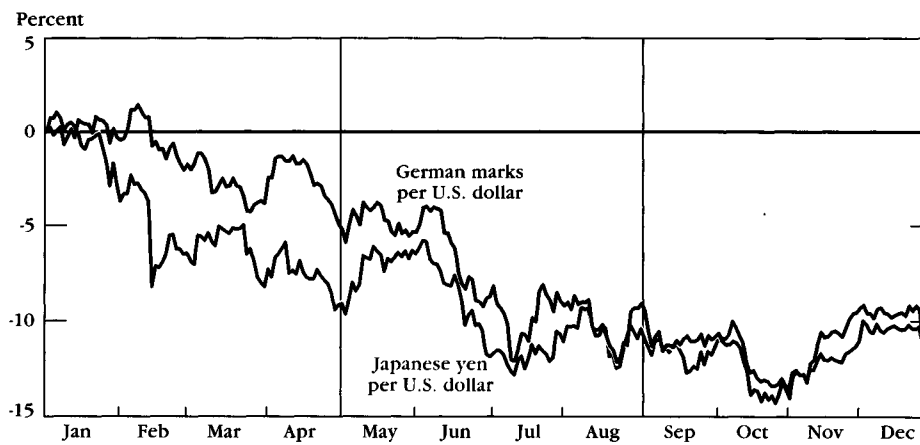
During 1994, the dollar declined 10.9 percent against the German mark, 10.8 percent against the Japanese yen, and 8.4 percent on a trade-weighted basis. Over the same period, the dollar rose 5.8 percent against the Canadian dollar and 56.1 percent against the Mexican peso. The U.S. monetary authorities intervened on five occasions during 1994—April 29, May 4, June 24, November 2, and November 3—each time buying dollars against the mark and the yen (see table). All of these purchases were divided equally between the Treasury Department's Exchange Stabilization Fund and the Federal Reserve System. In other operations, the U.S. monetary authorities liquidated all non-mark and non-yen reserves during the February–April period. A more detailed discussion of these operations can be found in the quarterly foreign exchange reports that follow.

Please note that until July 1 the reports were issued on a quarterly basis that started on February 1. The change to a calendar quarter was accomplished with a two-month report covering the May–June period.

U.S. FOREIGN EXCHANGE INTERVENTION ACTIVITY DURING 1994
Millions of Dollars

<u>Dollar purchases (+) or sales (-)</u>	<u>Against the Mark</u>	<u>Against the Yen</u>	<u>Total</u>
April 29	+500	+200	+700
May 4	+750	+500	+1,250
June 24	+950	+610	+1,560
November 2	+800	+800	+1,600
November 3	+500	+500	+1,000
Total	+3,500	+2,610	+6,110

PERCENTAGE CHANGE IN THE DOLLAR DURING 1994
Spot Exchange Rate



Source: Federal Reserve Bank of New York.

TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE OPERATIONS

November 1993–January 1994

The dollar appreciated modestly against most major currencies during the November-January period. It rose 2.9 percent against the German mark, 0.1 percent against the Japanese yen, and 0.5 percent on a trade-weighted basis.¹ The U.S. monetary authorities did not undertake any intervention operations during the period.

THE DOLLAR ENDS THE PERIOD VIRTUALLY UNCHANGED AGAINST THE YEN

After opening at ¥108.64 on November 1, the dollar rose against the yen in thin year-end markets, reaching a high of ¥113.55 before coming down to end the period unchanged. Initially, the dollar rose as market participants turned their attention to Japan's lingering recession and to the prospect of interest rate differentials moving in favor of the dollar. This shift in focus was prompted by continued weakness in Japanese money supply growth, employment, industrial production, and retail sales. Moreover, Japanese equity prices dropped sharply in November—with the Nikkei stock index falling nearly 17 percent over the course of the month—and remained volatile throughout December. Growing pessimism over the economic outlook for Japan, as well as the uncertain prospects for the Hosokawa government's long-awaited fiscal stimulus package, helped fuel expectations of an additional cut in the Bank of Japan's Official Discount Rate (ODR).

Over the course of December, trading activity in the dollar-yen exchange market started to ebb as first corporate and then interbank participants pulled back from the market ahead of the

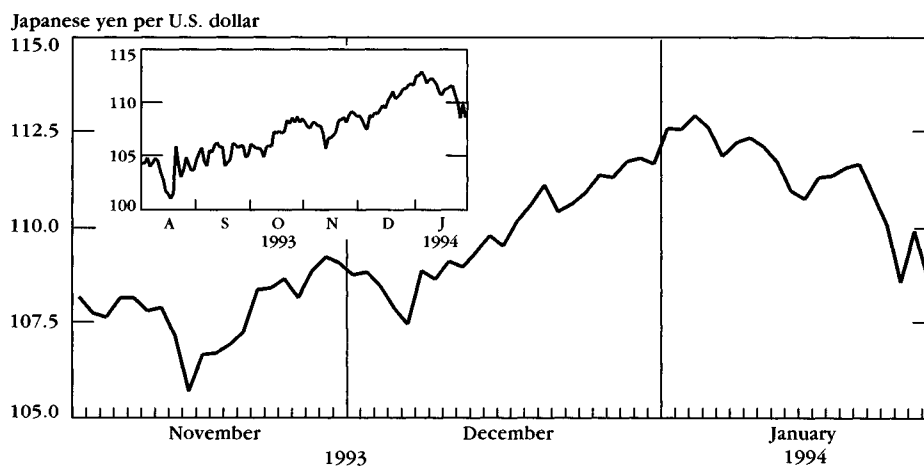
This report, presented by Peter R. Fisher, Senior Vice President, Federal Reserve Bank of New York, and Manager for Foreign Operations, System Open Market Account, describes the foreign exchange operations of the U.S. Department of the Treasury and the Federal Reserve System for the period from November 1993 through January 1994. Nicholas Pfifer was primarily responsible for preparation of the report.

year-end holidays. Japanese exporters, who regularly sell dollars to the market to hedge their foreign currency receivables, were notably absent toward the end of the month. In this environment, market conditions were increasingly characterized by the dominance of technically oriented traders who bought up the U.S. currency in anticipation of further dollar gains, and the dollar rose gradually through December from a low of ¥107.37 to a high of ¥112.05.

In late December, Treasury Secretary Bentsen was asked whether he saw a need to intervene in the foreign exchange market to stem the yen's decline. He responded that he did not think intervention would be necessary, but rather thought that the foreign exchange market would focus on Japan's substantial trade surplus when determining the relative value of the dollar and the yen. Secretary Bentsen expressed concern that Japan was not meeting its commitment to achieve domestic demand-led growth and a significant reduction in its external surplus. He expanded on this view in early January when he said that the proper way for Japan to address its economic imbalances was through a combination of effective fiscal stimulus and market-opening measures, not through a depreciation of the yen.

The dollar reached its period high of ¥113.55 on January 5, but soon drifted lower when expected movements in interest rates failed to materialize. Market participants turned their attention to the shifting fortunes of Japanese political reform and to bilateral trade talks with the

Chart 1
THE DOLLAR AGAINST THE JAPANESE YEN
Spot Exchange Rate



Source: Federal Reserve Bank of New York.

Note: Inset panel shows the six-month exchange rate movement.

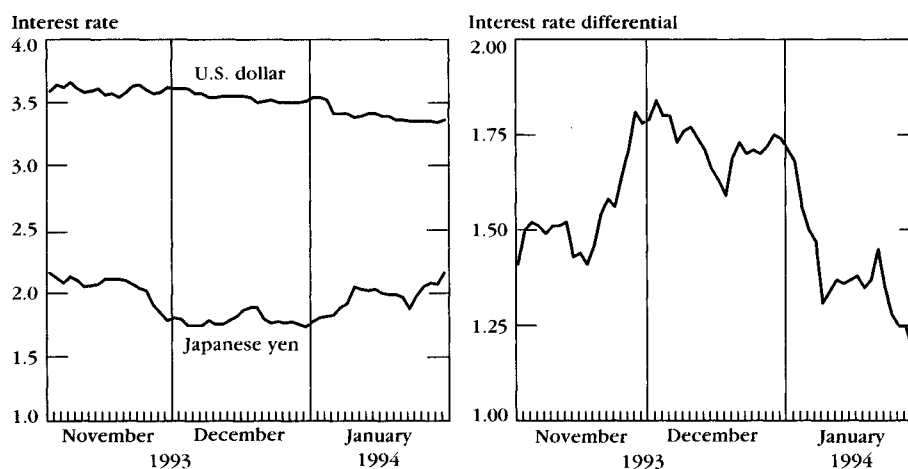
United States, but they were unable to develop a lasting view on how the success or failure of these two initiatives would affect exchange rates. Reflecting the market's uncertainty about the near-term direction of the dollar against the yen, the implied one-month option volatility for the dollar-yen exchange rate spiked higher in the second half of January. At the same time, foreign investors purchased the equivalent of \$10.5 billion in Japanese equities during January; these flows contributed to a sharp rebound in Japanese stock prices and helped support the yen.

The upper house of the Japanese Diet passed Prime Minister Hosokawa's political reform bill on January 29, permitting the government to turn its attention to other policy issues. As the period came to a close, U.S.-Japan trade talks were continuing and the Japanese government was reportedly at work on a record stimulus package for the economy. Reflecting the positive implications of such a package for Japanese domestic demand growth, the Nikkei surged nearly 8 percent on the last day of the period and expectations of additional interest rate cuts in Japan receded even further. These factors helped strengthen the yen, and the dollar closed at ¥108.65 on January 31.

THE DOLLAR APPRECIATES MODESTLY AGAINST THE MARK

During November and most of December, the dollar was relatively stable against the German mark, trading in a narrow range around the DM 1.70 level. Market sentiment toward the dollar was generally positive, however, with dealers taking note of the increasingly divergent paths of

Chart 2
DIFFERENTIAL BETWEEN DOLLAR AND YEN INTEREST RATES
 Implied by the Three-Month Eurodeposit Futures (March 1994 Contracts)

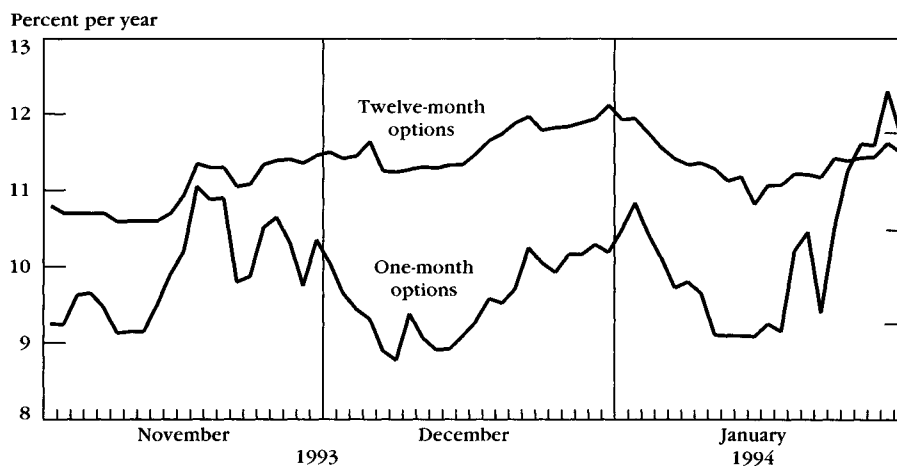


Source: Bloomberg L.P.

the U.S. and German economies. In this environment, market participants began to anticipate a fairly rapid convergence of short-term German and U.S. interest rates. The Bundesbank, which had surprised the foreign exchange market in late October when it cut its discount and Lombard rates by 50 basis points, trimmed its key money-market repurchase rate from 6.40 percent at the start of the period to 6.25 percent on December 1. At its December 2 council meeting, the Bundesbank announced a prefixed rate of 6.0 percent for the next five weekly auctions of fourteen-day repurchase agreements. Market participants generally interpreted this move as an effort to nudge short-term interest rates lower while also dampening speculation of further monetary easing.

The dollar broke out of its trading range in late December, jumping four pfennigs higher in the last three days of the month. Dealers expressed initial skepticism over the rise, which occurred in thin year-end markets. Nonetheless, the dollar subsequently extended its gains to reach a twenty-eight-month high of DM 1.7562 on January 14. As the dollar moved higher, it gained broad support from a series of U.S. and German statistical releases—notably retail sales, factory orders, and the purchasing managers index for the United States, and industrial production, unemployment, and real GDP for Germany—that further contrasted economic conditions in the two countries.

Chart 3
**DOLLAR-YEN EXCHANGE RATE VOLATILITY IMPLIED BY
 OPTION PRICES**



Source: Reuters.

During the latter part of January, the dollar settled into a new trading range against the mark. Expectations of near-term volatility in the dollar-mark exchange rate dropped off sharply, with the implied one-month option volatility falling from nearly 12 percent in early January to less than 9 percent at month-end. While market rumors of central bank sales helped cap the dollar's rise, movements in actual and expected interest rate differentials also weighed on the U.S. currency. At its two January meetings, the Bundesbank Council kept its repurchase rate fixed at 6.0 percent, disappointing the market and further deflating expectations about the pace of German interest rate cuts. Similarly, a perceived lack of inflationary pressures in the United States led dealers to rethink their expectations of a near-term hike in short-term U.S. interest rates. During most of January, therefore, differentials in three-month Eurodeposit rates, as well as those in the expected three-month deposit rates implied by futures prices, moved in the mark's favor. The dollar closed the period on January 31 at DM 1.7338.

Table 1

FEDERAL RESERVE RECIPROCAL CURRENCY ARRANGEMENTS
Millions of Dollars

<u>Institution</u>	<u>Amount of Facility as of January 31, 1994</u>	<u>Drawings during Period</u>
Austrian National Bank	250	0
National Bank of Belgium	1,000	0
Bank of Canada	2,000	0
National Bank of Denmark	250	0
Bank of England	3,000	0
Bank of France	2,000	0
Deutsche Bundesbank	6,000	0
Bank of Italy	3,000	0
Bank of Japan	5,000	0
Bank of Mexico	700	0
Netherlands Bank	500	0
Bank of Norway	250	0
Bank of Sweden	300	0
Swiss National Bank	4,000	0
Bank for International Settlements		
Dollars against Swiss francs	600	0
Dollars against other authorized European currencies	1,250	0
Total	30,100	0

OTHER OPERATIONS

As of the end of January, cumulative valuation gains on outstanding foreign currency balances were \$2,868.4 million for the Federal Reserve and \$2,513.0 million for the Treasury's Exchange Stabilization Fund (ESF). There were no realized profits or losses for the quarter.

Table 2

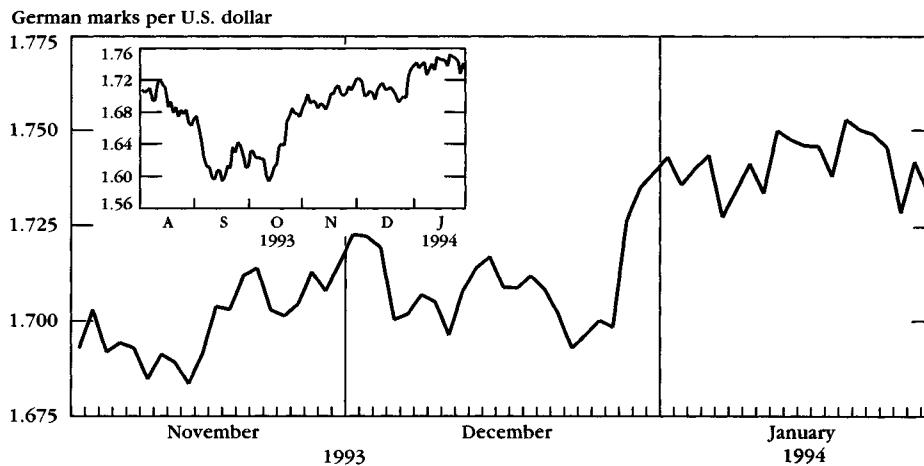
NET PROFITS (+) OR LOSSES (-) ON U.S. TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE OPERATIONS, BASED ON HISTORICAL COST-OF-ACQUISITION EXCHANGE RATES
Millions of Dollars

	<u>Federal Reserve</u>	<u>U.S. Treasury Exchange Stabilization Fund</u>
Valuation profits and losses on outstanding assets and liabilities as of October 31, 1993	+3,368.5	+2,839.0
Realized profits and losses November 1, 1993 - January 31, 1994	0.0	0.0
Valuation profits and losses on outstanding assets and liabilities as of January 31, 1994	+2,868.4	+2,513.0

Note: Data are on a value-date basis.

Chart 4

THE DOLLAR AGAINST THE GERMAN MARK Spot Exchange Rate



Source: Federal Reserve Bank of New York.

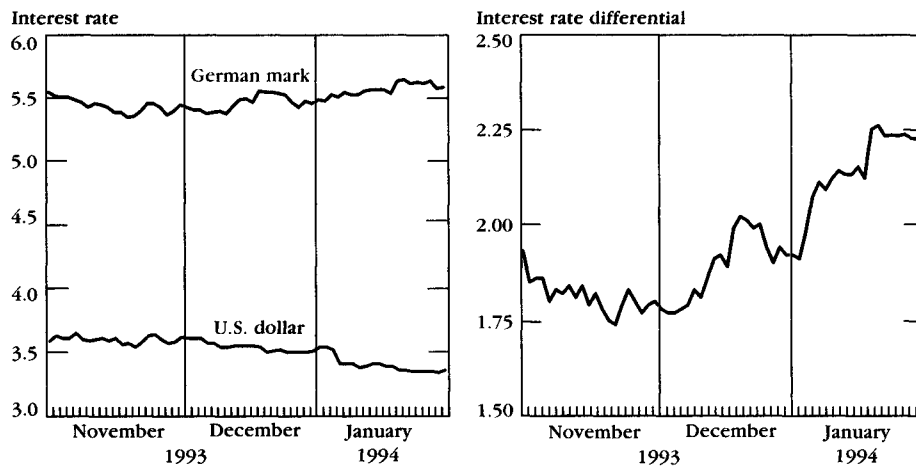
Note: Inset panel shows the six-month exchange rate movement.

The Federal Reserve and the ESF regularly invest their foreign currency balances in a variety of instruments that yield market-related rates of return and have a high degree of liquidity and credit quality. A portion of the balances is invested in securities issued by foreign governments. As of the end of January, the Federal Reserve and the ESF held, either directly or under repurchase agreements, \$10,740.5 million and \$10,436.2 million, respectively, in foreign government securities valued at end-of-period exchange rates.

ENDNOTE

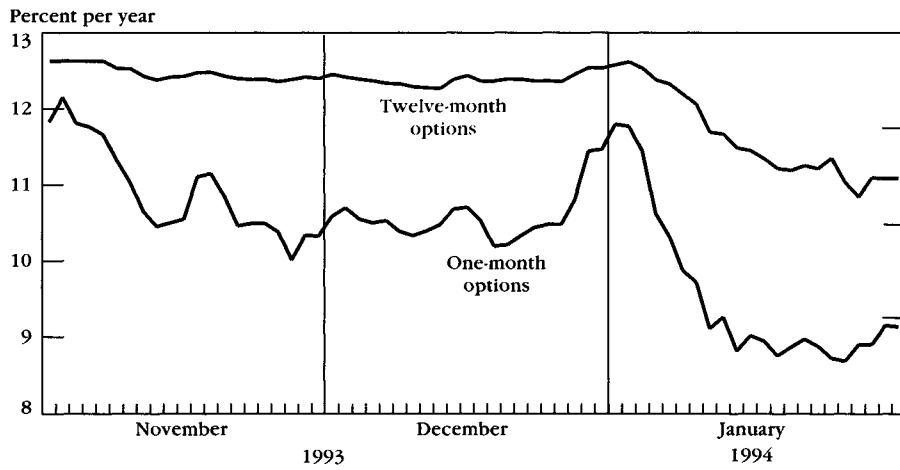
1. The dollar's movements on a trade-weighted basis are measured using an index developed by staff at the Board of Governors of the Federal Reserve System.

Chart 5
**DIFFERENTIAL BETWEEN GERMAN MARK AND DOLLAR
INTEREST RATES**
Implied by the Three-Month Eurodeposit Futures (March 1994 Contracts)



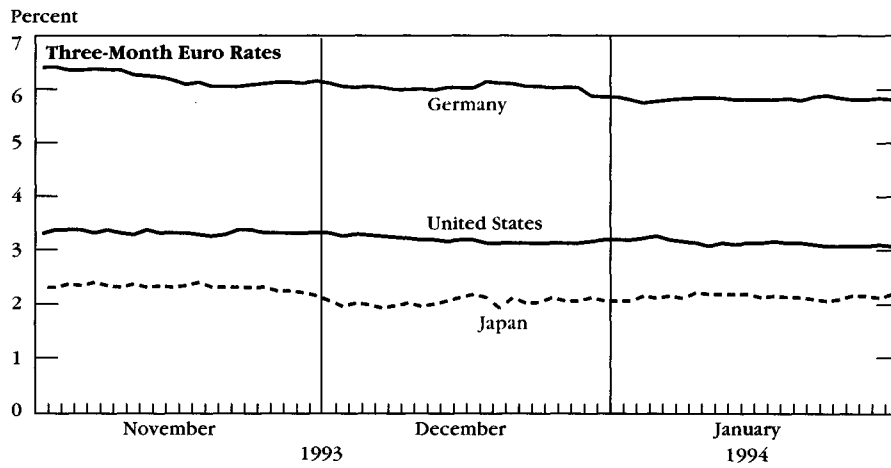
Source: Bloomberg L.P.

Chart 6
DOLLAR-MARK EXCHANGE RATE VOLATILITY IMPLIED BY
OPTION PRICES



Source: Reuters.

Chart 7
SHORT-TERM INTEREST RATES FOR SELECTED COUNTRIES



Source: Bank for International Settlements.

TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE OPERATIONS

February–April 1994

During the February-April period, the dollar declined 4.6 percent against the German mark, 6.5 percent against the Japanese yen, and 3.6 percent on a trade-weighted basis.¹ On the last business day of the period, April 29, the Federal Reserve Bank of New York's Foreign Exchange Desk entered the market to purchase \$500 million against the German mark and \$200 million against the yen for the U.S. monetary authorities. Contemporaneously, Treasury Secretary Bentsen issued a statement confirming the intervention. In other operations, the Desk liquidated the non-yen and non-mark reserves of the Federal Reserve System and the U.S. Treasury Department's Exchange Stabilization Fund (ESF). Following the assassination of the leading Mexican presidential candidate, U.S. monetary authorities provided a \$6 billion temporary swap facility to Mexico. This was superseded on April 26, when the monetary authorities of the United States, Canada, and Mexico announced the creation of the North American Financial Group and the establishment of a trilateral foreign exchange swap facility.

THE DOLLAR RISES BRIEFLY IN EARLY FEBRUARY

As the period opened, many market participants had positioned themselves for an extended dollar rally. This anticipated appreciation of the dollar rested in part on the expectation that interest rate differentials would start to move more rapidly in the dollar's favor. Dealers believed that with the U.S. economy strengthening, the Federal Reserve would eventually tighten monetary conditions in the United States, perhaps by the end of the first quarter. Dealers also expected the Bundesbank to lower short-term German interest rates quickly, allowing rates in

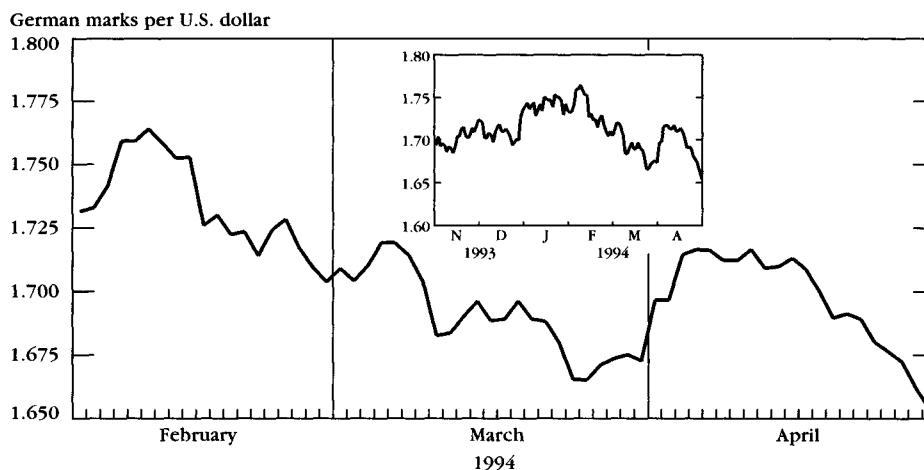
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other parts of Europe to fall as well. Against this backdrop, market participants entered the period holding substantial long-dollar positions against the mark and the yen, and also holding large positions in European government bonds. On February 4, Chairman Greenspan announced the decision of the Federal Open Market Committee (FOMC) to increase pressure on bank reserves, a move that resulted in an increase in the federal funds rate from 3.0 to 3.25 percent. The dollar spiked higher in the days immediately following the tightening, reaching period highs of DM 1.7675 and ¥109.65 before starting to drift lower (Charts 1 and 2).

THE DOLLAR DECLINES FIRST AGAINST THE YEN AND THEN THE MARK

As the February 11 summit meeting between President Clinton and Japanese Prime Minister Hosokawa approached, market participants increasingly expected the two leaders to announce a compromise resolution of the trade issues under discussion between the two countries in bilateral "framework" talks. Correspondingly, expectations grew that the dollar would start to appreciate once the meeting was over, and market participants began to build up significant long-dollar positions. The dollar closed at ¥108.13 on Thursday, February 10. Reflecting this positive sentiment toward the dollar, the premium on dollar put options over equally out-of-the-money dollar call options diminished a few days before the meeting. Thus, when President Clinton and Prime Minister Hosokawa announced late in the afternoon on Friday, February 11,

Chart 1
THE DOLLAR AGAINST THE GERMAN MARK
 Spot Exchange Rate



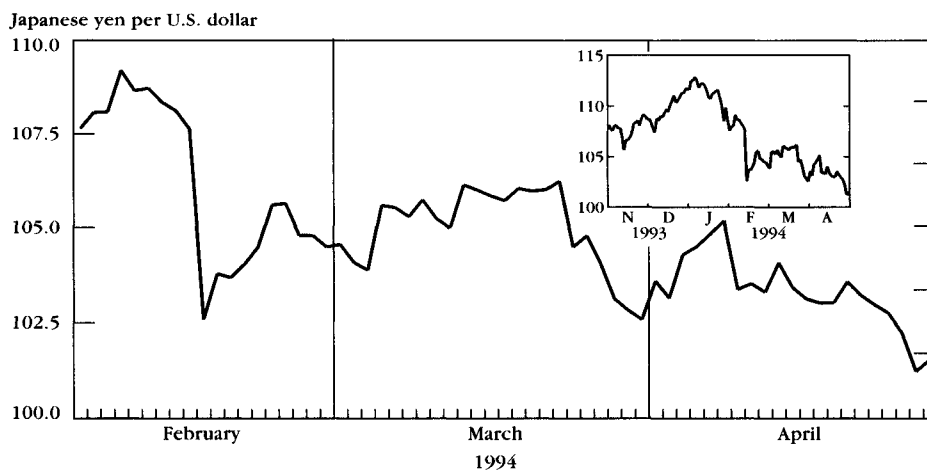
Source: Federal Reserve Bank of New York.
 Note: Inset panel shows the six-month exchange rate movement.

that they had failed to reach an agreement and were suspending the framework talks, surprised market participants began to unwind their long-dollar positions. The dollar began to decline in late New York trading and continued to move lower through Asian, European, and early New York dealings on Monday, February 14. The dollar's price adjustment against the yen culminated at about midday, when the dollar dropped sharply to an intraday low of ¥101.10. The dollar recovered by the end of the day, however, and traded above ¥103 for the balance of the month.

As the Bundesbank's February 17 council meeting approached, market participants anticipated that the German central bank would act to lower interest rates for the first time since early December 1993. While the Bundesbank did reduce its discount rate by 50 basis points to 5.25 percent, it disappointed these expectations by leaving its key money market rate, the securities repurchase rate, unchanged. The dollar-mark exchange rate began to trade lower in subsequent days, but sharp sell-offs in U.S. and European bond markets generally dominated market attention during late February.

In early March, the dollar traded above the ¥105 level, gaining support from signs that Japan was considering private and public initiatives to address its trade surplus. Market participants also appeared to take comfort in the fact that the Clinton Administration's decision to revive "Super

Chart 2
THE DOLLAR AGAINST THE JAPANESE YEN
 Spot Exchange Rate



Source: Federal Reserve Bank of New York.
 Note: Inset panel shows the six-month exchange rate movement.

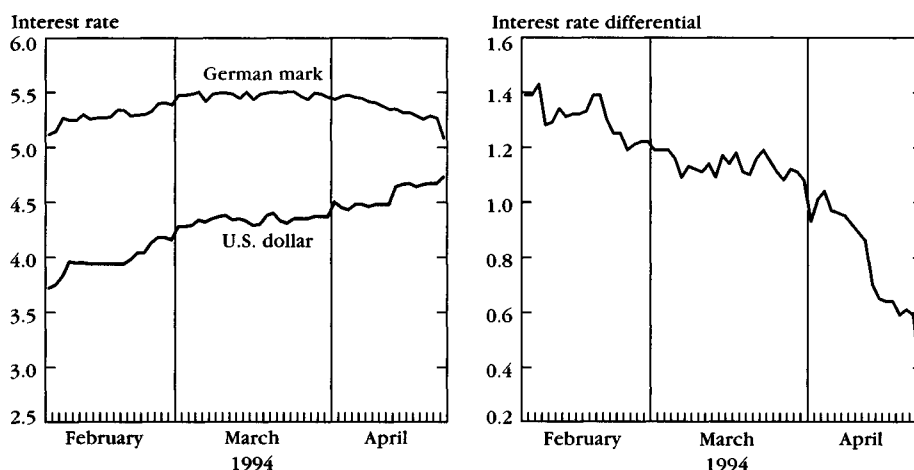
301” trade sanction powers would not result—at least in the short term—in new trade sanctions. However, in mid-March attention increasingly focused on reports that substantial foreign flows of funds into Japanese equity and bond markets were leading to further strength in the yen.

Against the mark, a slower than expected narrowing of short-term interest rate differentials weighed on the dollar during much of March. A surge in German M3 money supply growth, coupled with growing frustration over the Bundesbank’s cautious step-by-step reduction of its securities repurchase rate, spurred market participants to reassess their expectation of sharply lower German interest rates (Chart 3). These developments also encouraged the view that further rate reductions by the Bundesbank would be calibrated to the Fed’s rate increases to minimize the impact on the dollar-mark exchange rate. In this environment, the second 25 basis point rate increase in the federal funds rate resulting from the FOMC’s decision, announced after its March 22 meeting, had little impact on the dollar.

THE DOLLAR MOVES UP AND THEN DOWN IN APRIL

In early April, the dollar moved higher against the mark and the yen on a much higher than expected increase in March U.S. nonfarm payrolls and on a brief recovery in U.S. securities prices. The dollar soon came under pressure against the yen, however, when the resignation of Prime Minister Hosokawa led to a widespread perception in the foreign exchange market that

Chart 3
**DIFFERENTIAL BETWEEN GERMAN MARK AND DOLLAR
 SHORT-TERM INTEREST RATES**
 Implied by the Three-Month Eurodeposit Futures (June 1994 Contracts)



Source: Bloomberg L.P.

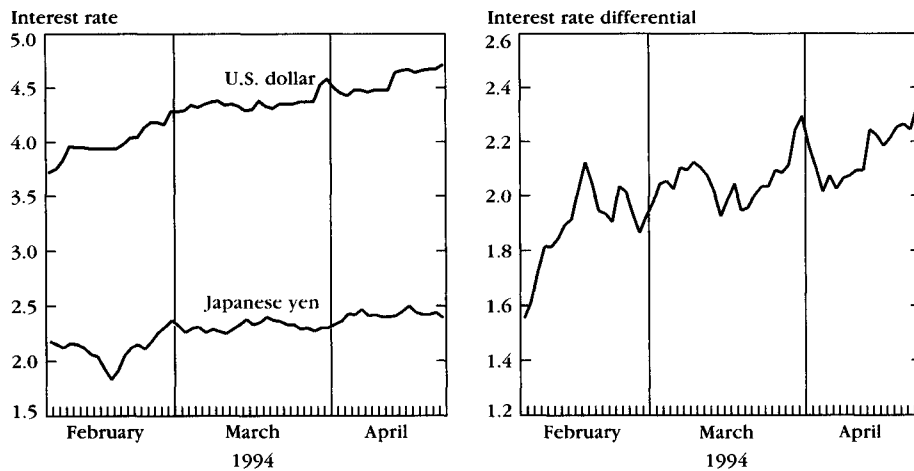
the bilateral trade talks would encounter further delays. Political uncertainty in Japan lingered, and dealers came to doubt whether Japan would be able to meet its commitment to have a new package of market-opening measures in place before the Group of Seven (G-7) summit in July. The political uncertainty in Japan also created a concern among dealers that the Japanese government would be unable to pass measures to stimulate domestic demand and that the yen would consequently appreciate over the longer term as well.

During April, a change in market perception strengthened the mark against both the dollar and the yen. With the Bundesbank easing cautiously since mid-February, the expected trend in short-

Table 1
**FOREIGN EXCHANGE HOLDINGS OF U.S. MONETARY
 AUTHORITIES AT PERIOD END**
 Millions of Dollars

	<u>Federal Reserve</u>	<u>U.S. Treasury Exchange Stabilization Fund</u>
German marks	13,615.8	8,413.7
Japanese yen	9,375.3	12,600.3
Total	22,991.1	21,014.0

Chart 4
**DIFFERENTIAL BETWEEN DOLLAR AND JAPANESE YEN
 SHORT-TERM INTEREST RATES**
 Implied by the Three-Month Eurodeposit Futures (June 1994 Contracts)



Source: Bloomberg L.P.

term German interest rates, as implied by several series of Euromark futures contracts, backed up sharply over the latter part of the period (Chart 5). The surprise announcement by the Bundesbank on April 14 that it was cutting its discount and Lombard rates by 25 basis points, to 5.0 and 6.5 percent, respectively, appeared to signal to market participants that further significant near-term easing was unlikely. This change in sentiment can be seen in the flattening of near-term Euromark contracts around the 5 percent level (Chart 5). This was followed by the announcement of a third 25 basis point increase in the federal funds rate on April 18. With market participants perceiving little prospect for a further narrowing in the interest differential in the short run, the mark strengthened against both the dollar and the yen as the short end of the German yield curve looked increasingly attractive.

The mark continued to rise against the dollar through the end of April, even though expected interest rate differentials, as implied by futures contracts on Eurodollar and Euromark deposits, were now moving more clearly in the dollar's favor (Charts 3 and 4). Sentiment toward the dollar became increasingly negative as dealers expressed growing anxiety that the dollar-yen exchange rate might drop swiftly below its historical lows. This risk was reflected in options markets, where dollar put options traded at a substantial premium over equally out-of-the-money

Table 2

NET PROFITS (+) OR LOSSES (-) ON U.S. TREASURY AND
FEDERAL RESERVE FOREIGN EXCHANGE OPERATIONS, BASED
ON HISTORICAL COST-OF-ACQUISITION EXCHANGE RATES
Millions of Dollars

	<u>Federal Reserve</u>	<u>U.S. Treasury Exchange Stabilization Fund</u>
Valuation profits and losses on outstanding assets and liabilities as of January 31, 1994	2,868.4	2,513.0
Realized profits and losses January 31 - April 29, 1994	81.7 ^a	5.6 ^b
Valuation profits and losses on outstanding assets and liabilities as of April 29, 1994	4,163.4	3,804.9

Note: Data are on a value-date basis.

^a This figure represents net realized profit on market sales of Swiss francs, British pounds, Canadian dollars, French francs, Belgian francs, and Dutch guilders. The figure excludes intervention sales transacted on April 29, which settled during the first week of May and are thus not reflected here.

^b This figure represents net realized profit on market sales of Swiss francs and British pounds. The figure excludes intervention sales transacted on April 29, which settled during the first week of May and are thus not reflected here.

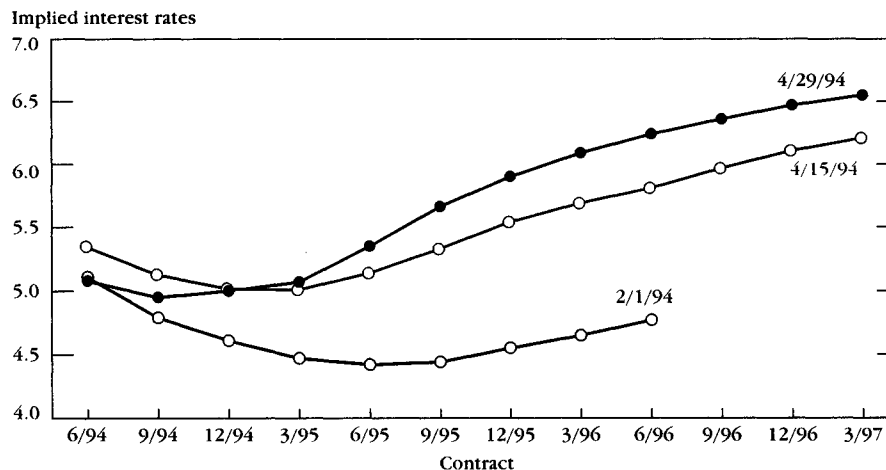
dollar call options. With market participants focused on the risk that the dollar might decline against the yen, and the mark receiving solid support against the yen at the ¥60 per mark level, the prospect for the dollar appreciating against the mark appeared remote.

Following the G-7 meetings on the weekend of April 23-24, market participants were somewhat disappointed over the lack of official guidance on exchange rates, and the dollar began to move down against both the mark and the yen. At this time, a perception was growing that dollar weakness had begun to affect the U.S. bond market adversely, and market participants expressed concern that a lower dollar would spark inflationary pressures and thereby diminish the value of dollar-denominated assets. Dealers increasingly focused on the parallel movements in U.S. bond prices and the value of the dollar. On Thursday, April 28, the U.S. bond market recorded sharp losses, and the dollar approached its postwar low of ¥100.40 in thin and nervous trading.

U.S. MONETARY AUTHORITIES ENTER THE MARKET TO BUY DOLLARS AGAINST THE MARK AND THE YEN

On Friday, April 29, in early New York trading, the dollar started to drop abruptly against the mark, falling nearly two pfennigs in less than an hour before bottoming out at a six-month low of DM 1.6440. At the time, the dollar was trading just below ¥102. Trading became increasingly volatile, with market participants reporting that dealers were not answering phones and that customers were having trouble finding out whether their orders had been filled. Shortly before 10:30 a.m., the Federal Reserve Bank of New York's Foreign Exchange Department entered the

Chart 5
INTEREST RATES IMPLIED BY EUROMARK FUTURES CONTRACTS



Source: Bloomberg L.P.

market, purchasing dollars against the mark for the U.S. monetary authorities. Soon thereafter, Treasury Secretary Lloyd Bentsen issued the following statement confirming the intervention:

U.S. monetary authorities intervened today in foreign exchange markets to counter disorderly conditions. This is in line with our previously articulated policy which recognizes that excessive volatility is counterproductive to growth. We stand ready to continue to cooperate in foreign exchange markets.

Shortly before 11:30 a.m., the Desk again entered the market, purchasing dollars against both the mark and the yen. In total, U.S. monetary authorities purchased \$500 million against the mark and \$200 million against the yen; these amounts were equally divided between the Federal Reserve and the ESF.

Table 3
FEDERAL RESERVE RECIPROCAL CURRENCY ARRANGEMENTS
 Millions of Dollars

<u>Institution</u>	<u>Amount of Facility as of April 29, 1994</u>	<u>Drawings during Period</u>
Austrian National Bank	250	0
National Bank of Belgium	1,000	0
Bank of Canada	2,000	0
National Bank of Denmark	250	0
Bank of England	3,000	0
Bank of France	2,000	0
Deutsche Bundesbank	6,000	0
Bank of Italy	3,000	0
Bank of Japan	5,000	0
Bank of Mexico	3,000	0
Netherlands Bank	500	0
Bank of Norway	250	0
Bank of Sweden	300	0
Swiss National Bank	4,000	0
Bank for International Settlements		
Dollars against Swiss francs	600	0
Dollars against other authorized European currencies	1,250	0
Total	32,400	0

Following the intervention, the dollar began to gain ground in orderly trading, reaching an intraday high of 1.6635 against the mark and 102.50 against the yen. The dollar drifted lower in the afternoon, however, and closed the period at DM 1.6535 and ¥101.55.

NORTH AMERICAN SWAP LINES

Following the March 23 assassination of Luis Donaldo Colosio, the presidential candidate of Mexico's Institutional Revolutionary Party (PRI), U.S. monetary authorities established a \$6.0 billion temporary bilateral swap facility for the Bank of Mexico at the request of the Mexican authorities. The facility included reciprocal swap arrangements already in place. The assassination of Colosio had prompted the closing of Mexican markets on March 24 and gave rise to concerns that the reopening of the markets on March 25 would be accompanied by market disorders that could spill over into the U.S. financial markets. No drawings were made on this facility.

On April 26, the monetary authorities of the United States, Canada, and Mexico announced the creation of the North American Financial Group to provide a forum for more regular consultation on economic and financial developments and policies in these countries. These arrangements were unrelated to developments in Mexico; they had been planned several months earlier in recognition of the three nations' increasingly interdependent economic relationships. In connection with the creation of the North American Financial Group, the monetary authorities of the three countries announced the establishment of the trilateral foreign exchange swap facility to expand the pool of potential resources available to the monetary authorities of each country to maintain orderly exchange markets. The United States and Mexico put in place swap agreements for up to \$6.0 billion, with the Treasury and the Federal Reserve each participating up to \$3.0 billion. In addition, the Bank of Canada and the Bank of Mexico expanded their existing swap agreement to C\$1.0 billion. Finally, the Federal Reserve and the Bank of Canada reaffirmed their existing swap agreement in the amount of \$2.0 billion. Each party has reciprocal privileges to draw on the other's currency in amounts equivalent to the amounts indicated.

The Mexican peso, which opened the period at 3.1060, traded to a low of 3.3694 per dollar following the assassination but strengthened toward the end of the period to close at 3.2700 pesos per dollar.

OTHER OPERATIONS

During the period, the Federal Reserve Bank of New York sold in the market all non-mark and non-yen foreign exchange reserve holdings of the Federal Reserve and the Exchange Stabilization Fund (ESF) of the U.S. Treasury. The Federal Reserve liquidated the equivalent of \$703.8 million, while the ESF liquidated the equivalent of \$64.4 million. Swiss francs repre-

sented \$629.0 million of the amount liquidated by the Federal Reserve and \$37.3 million of the amount liquidated by the Treasury. Swiss franc sales took place on the following days: February 15, February 22, March 1, March 8, April 5, April 12, and April 26. The remaining sales for the account of the Federal Reserve were as follows: \$1.0 million of Belgian francs on February 25, \$38.0 million of Dutch guilders on March 29, \$0.3 million of Canadian dollars on March 29, \$26.9 million of British pounds on April 12, and \$8.7 million of French francs on April 12. The remaining sale for the account of the Treasury was a liquidation of \$27.1 million of British pounds on April 26. It was decided to eliminate these currency holdings in light of the U.S. monetary authorities' practice in recent years of conducting intervention operations in German marks and Japanese yen. The sales were conducted in accordance with a schedule reflecting the maturity of investments in the individual currencies.

At the end of the period, the current values of the foreign exchange reserve holdings of the Federal Reserve and the U.S. Treasury were \$23.0 billion and \$21.0 billion, respectively. These holdings are invested in a variety of instruments that yield market-related rates of return and have a high degree of liquidity and credit quality. The Federal Reserve and the U.S. Treasury held, either directly or under repurchase agreement, \$11.7 billion and \$11.3 billion, respectively, in foreign government securities.

ENDNOTE

1. The dollar's movements on a trade-weighted basis are measured using an index developed by staff at the Board of Governors of the Federal Reserve System.

TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE OPERATIONS

May-June 1994

During the May-June period, the dollar declined 4.0 percent against the German mark, 3.0 percent against the Japanese yen, and 2.7 percent on a trade-weighted basis.¹ The dollar opened the period at DM 1.6548 and ¥101.75, and closed the period at DM 1.5869 and ¥98.50. The Federal Reserve Bank of New York's Foreign Exchange Desk intervened twice during the period on behalf of the U.S. monetary authorities, purchasing \$1,250 million on May 4 and \$1,560 million on June 24. On both occasions, the Desk intervened as part of a concerted operation to support the dollar.

THE UNITED STATES INITIATES A CONCERTED OPERATION

In the weeks leading up to the reporting period, the dollar declined against the mark and the yen in increasingly volatile trading. On the last business day of the previous period, the U.S. monetary authorities intervened in the foreign exchange market.

On May 4, in early European trading, the dollar reached a new six-month low of DM 1.6330 before recovering to approximately DM 1.6470 after Bundesbank President Tietmeyer stated that too strong an appreciation of the mark against the dollar was not in the interest of the German economy. At about 8:30 a.m., the Desk, joined by eighteen other central banks, entered the market to purchase dollars against the yen and the mark. Shortly after this initial round of intervention, Treasury Secretary Bentsen released the following statement confirming the intervention:

This report, presented by Peter R. Fisher, Senior Vice President, Federal Reserve Bank of New York, and Manager for Foreign Operations, System Open Market Account, describes the foreign exchange operations of the U.S. Department of the Treasury and the Federal Reserve System for the period from May 1994 through June 1994. Ladan Archin was primarily responsible for preparation of the report.

I am concerned by recent developments in the exchange markets. This Administration sees no advantage in an undervalued currency.

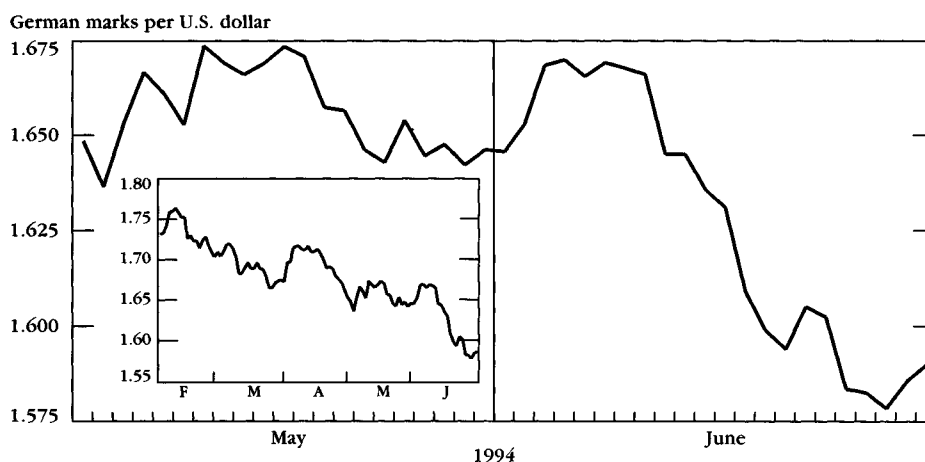
The monetary authorities of the major countries are joining this morning in concerted intervention. These operations reflect our view that recent movements in exchange markets have gone beyond what is justified by economic fundamentals.

Following the Secretary's statement, the dollar reached its intraday highs of DM 1.6645 and ¥102.40. The Desk continued to purchase dollars against the mark and the yen throughout the morning, concluding the operation at midday. The dollar closed the day at DM 1.6530 and ¥101.83. In total, the Desk purchased \$1,250 million, of which \$750 million was against the mark and \$500 million was against the yen. These amounts were equally divided between the Federal Reserve and the U.S. Treasury's Exchange Stabilization Fund (ESF).

EXPECTATIONS OF FUTURE INTEREST RATES BEGIN TO CHANGE

In the week following the intervention, the dollar gradually firmed against both the mark and the yen. This occurred as market participants came to expect that central banks would follow up on their intervention operations with interest rate changes that would also have the effect of supporting the dollar.

Chart 1
THE DOLLAR AGAINST THE GERMAN MARK
Spot Exchange Rate



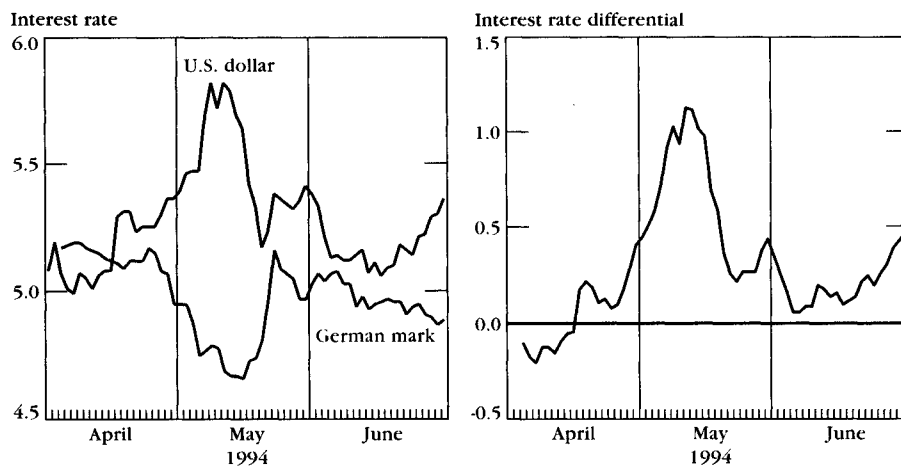
Source: Federal Reserve Bank of New York.

Note: Inset panel shows the five-month exchange rate movement.

In early May, the Bank of Japan was more accommodative in its money market operations, as reflected in a decline in the overnight call money rate to an historical low of 2.03 percent. On May 11, the Bundesbank reduced its discount and Lombard rates by 50 basis points to 4.5 percent and 6.0 percent, respectively. On May 17, the Federal Reserve announced the Board of Governors' decision to raise the discount rate by 50 basis points. At the same time, the Federal Reserve announced a decision by the Federal Open Market Committee (FOMC) to provide a corresponding increase in pressure on bank reserves, resulting in a 50 basis point increase in the federal funds rate. The Federal Reserve Board's statement that the interest rate changes made up to this date in 1994 had "substantially remove[d] the degree of monetary accommodation which prevailed throughout 1993" reduced market participants' expectations for further near-term rate increases in the United States. Similarly, the size of the Bundesbank's interest rate cuts lowered expectations for further official reductions in interest rates in Germany. Thus, following these official interest rate changes, expected interest rate differentials, which had widened quite substantially in the dollar's favor in early May, began to narrow rapidly (Chart 2).

The dollar subsequently moved lower against the mark and traded in a narrow range for the rest of the month as market participants reassessed the likelihood that interest rate changes would lead to dollar appreciation. This period of reassessment was encouraged by the comments of

Chart 2
DIFFERENTIAL BETWEEN DOLLAR AND GERMAN MARK
SHORT-TERM INTEREST RATES
 Implied by the Three-Month Eurodeposit Futures (September 1994 Contracts)



Source: Bloomberg L.P.

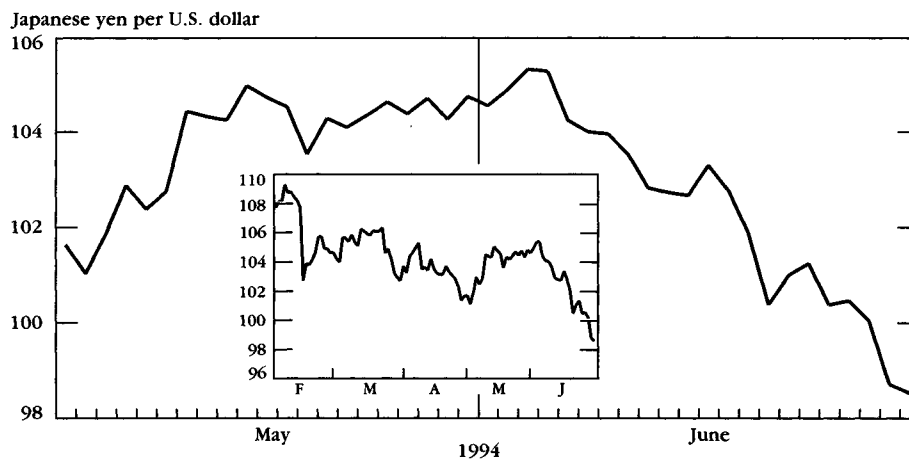
various Bundesbank officials, who indicated that further changes in official interest rates might not occur. At the same time, several data releases in Germany, particularly the figures on industrial production for April and first-quarter GDP, encouraged market participants to view the outlook for the German economy more optimistically.

Table 1
**FOREIGN EXCHANGE HOLDINGS OF U.S. MONETARY
 AUTHORITIES AT PERIOD END**
 Millions of Dollars

	<u>Federal Reserve</u>	<u>U.S. Treasury Exchange Stabilization Fund</u>
German marks	13,350.0	7,753.3
Japanese yen	8,996.6	12,466.9
Total	22,346.5	20,220.2

Note: Figures do not add to totals because of rounding.

Chart 3
THE DOLLAR AGAINST THE JAPANESE YEN
 Spot Exchange Rate



Source: Federal Reserve Bank of New York.

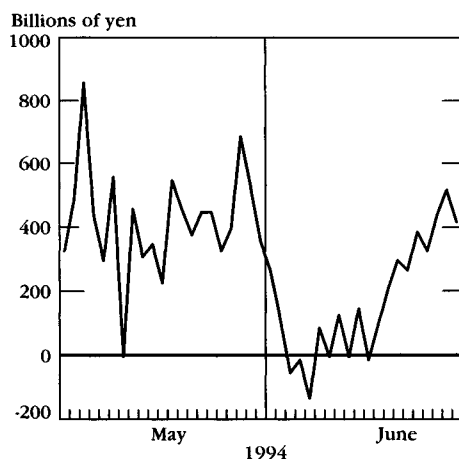
Note: Inset panel shows the five-month exchange rate movement.

THE DOLLAR STRENGTHENS AGAINST THE YEN, BUT THEN MOVES LOWER

In late May and early June, the dollar posted modest gains against the yen when U.S.-Japanese trade relations showed signs of progress. On May 24, the United States and Japan reopened the framework trade talks that were suspended on February 11. In subsequent days, press reports and various official comments led market participants to regard settlement on a range of trade issues between the United States and Japan as more likely. As this view became increasingly widespread, the dollar strengthened against the yen, reaching its period high of ¥105.50 on June 6.

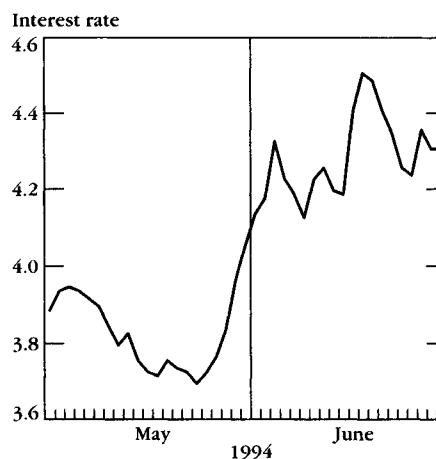
However, the yen appreciated after comments on June 7 and 8 by senior Administration officials indicating that the United States had not changed its goals in the trade talks and was prepared to impose trade sanctions if the framework talks failed. Several other factors also appeared to strengthen the yen. First, although the accommodative money market operations by the Bank of Japan in May had led some market participants to expect a reduction in the Bank of Japan's Official Discount Rate (ODR), these expectations started to unwind by the first week of June as Japanese government bond yields rose and the Bank of Japan returned to a more neutral stance (Chart 4). Moreover, the June 10 release of the Tankan business survey, as well as

Chart 4A
**DEVIATIONS OF JAPANESE
BANK RESERVES FROM
REQUIRED LEVELS**



Source: Bank of Japan.

Chart 4B
**JAPANESE TEN-YEAR
GOVERNMENT
BOND YIELD**



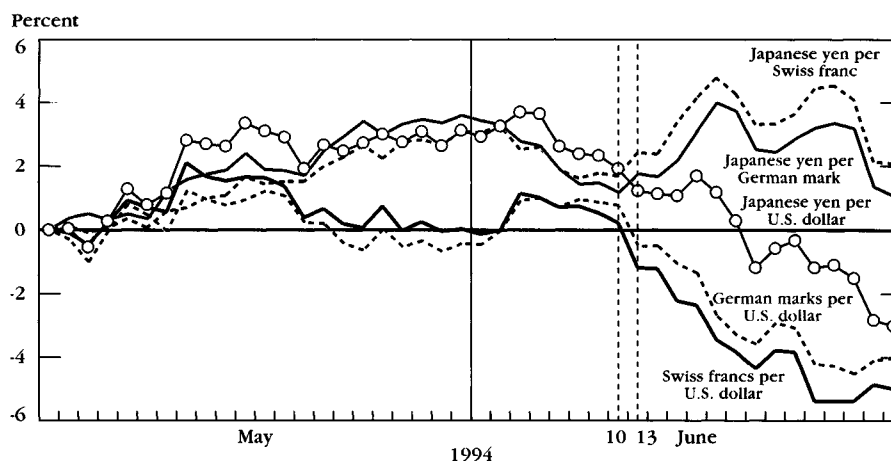
Source: Bank for International Settlements.

subsequent comments by Japanese officials, suggested that the Japanese economy had bottomed out and was poised for a recovery. Also in early June, expectations grew that the Hata government would face a no-confidence vote as soon as the budget process for fiscal year 1994-95 was completed and, consequently, that the Japanese political situation would further delay trade negotiations and the implementation of fiscal measures in Japan.

THE MARK AND THE SWISS FRANC BEGIN TO STRENGTHEN

With the dollar declining against the yen and the market reassessing the prospects of dollar appreciation against the mark, a series of events in mid-June caused a sudden strengthening of the mark and the Swiss franc (Chart 5). Over the weekend of June 11-12, tensions with North Korea mounted, leading to market anxiety about Japan's proximity to the peninsula and uncertainty about the likely U.S. policy response. On Sunday, June 12, German Chancellor Kohl's party, the Christian Democratic Union (CDU), performed better than expected in elections for the European parliament, a development that appeared to promise greater continuity in German policies after the fall national elections. Then, on Monday, June 13, Swiss National Bank President Lusser said that further interest rate cuts in Switzerland would not be forthcoming, even though inflationary pressures in the Swiss economy remained muted. This combination of events prompted substantial flows into Swiss francs and German marks, leading to a broad-based appreciation of those currencies. After initially breaking lower against the Swiss franc, the

Chart 5
PERCENTAGE CHANGE IN SELECTED CURRENCIES
 Period: April 29, 1994, to June 30, 1994



Source: Federal Reserve Bank of New York.

U.S. currency soon came under selling pressure against the mark and eventually against the yen. In this environment, market participants became increasingly anxious about the dollar's near-term prospects and began to question the U.S. Administration's level of concern about the U.S. currency.

On Friday, June 17, in extremely thin market conditions, the dollar fell more than two pfennigs following the breach of DM 1.6280, an important technical level, and on headlines reporting views of a private sector research economist that, in the absence of a high real interest rate policy in the United States, the dollar could fall by 10 percent against the mark over the next eighteen months. During the day, the dollar dropped to DM 1.6065, its lowest level since October 1993. The dollar's sharp price adjustment took place in a very short period, giving market participants little opportunity to adjust their positions and putting added pressure on the dollar as the next week began.

THE DOLLAR FALLS SHARPLY AGAINST THE YEN

Liquidations of long-dollar positions against the yen abruptly pushed the dollar down by more than two yen to a new low of ¥99.85 during Tuesday, June 21. As the dollar reached new lows, negative sentiment and technical conditions became self-reinforcing, with market participants increasingly interpreting the dollar's movements as reflecting a lack of confidence in U.S. economic policies.

Table 2
NET PROFITS (+) OR LOSSES (-) ON U.S. TREASURY AND
FEDERAL RESERVE FOREIGN EXCHANGE OPERATIONS, BASED
ON HISTORICAL COST-OF-ACQUISITION EXCHANGE RATES
Millions of Dollars

	<u>Federal Reserve</u>	<u>U.S. Treasury Exchange Stabilization Fund</u>
Valuation profits and losses on outstanding assets and liabilities as of April 29, 1994	+ 4,163.4	+ 3,804.9
Realized profits and losses April 29, 1994 - June 30, 1994	+ 310.4 ^a	+ 229.8 ^a
Valuation profits and losses on outstanding assets and liabilities as of June 30, 1994	+ 4,458.2	+ 4,253.8

Note: Data are on a value-date basis.

^a This figure represents net realized profit on intervention sales of German marks and Japanese yen.

The dollar was supported briefly by Secretary Bentsen's statement on June 22:

I am concerned by recent movements in the exchange markets. We are carefully monitoring developments. We continue to be in close communication with our G-7 partners, and we continue to be prepared to act as appropriate.

Ultimately, what is important is the fundamental strength of our economy, and I am very confident in the outlook. We are now in the midst of the first investment-led recovery from a low-inflation base in 30 years. And there is increased evidence of recovery abroad. We share with the Fed and with our G-7 partners the common goal of sustaining recovery with low inflation.

On the same day, Federal Reserve Chairman Greenspan, testifying before the House Budget Committee, said that the U.S. monetary authorities "cannot be indifferent to major movements in our currency."

Table 3

FEDERAL RESERVE RECIPROCAL CURRENCY ARRANGEMENTS
Millions of Dollars

<u>Institution</u>	Amount of Facility as of	
	<u>June 30, 1994</u>	<u>Drawings during Period</u>
Austrian National Bank	250	0
National Bank of Belgium	1,000	0
Bank of Canada	2,000	0
National Bank of Denmark	250	0
Bank of England	3,000	0
Bank of France	2,000	0
Deutsche Bundesbank	6,000	0
Bank of Italy	3,000	0
Bank of Japan	5,000	0
Bank of Mexico	3,000	0
Netherlands Bank	500	0
Bank of Norway	250	0
Bank of Sweden	300	0
Swiss National Bank	4,000	0
Bank for International Settlements		
Dollars against Swiss francs	600	0
Dollars against other authorized European currencies	1,250	0
Total	32,400	0

On Thursday, June 23, however, there was renewed selling pressure on the dollar. Market anxiety about the risk of a rapid downward movement of the dollar, especially against the yen, was reflected in options markets, where dollar puts began to trade at an extraordinarily high premium over equally out-of-the-money dollar calls. The dollar closed that day at DM 1.6024 and ¥101.22. On Friday, June 24, during Asian and European trading, the dollar again began to move lower against the mark and the yen, reaching lows of DM 1.5855 and ¥99.93, while U.S. and European bond yields rose and European stock markets declined.

On Friday morning, the Desk entered the market shortly before 9:30 a.m. to purchase dollars against the mark and the yen. Sixteen other central banks joined the Desk in a concerted intervention. Soon after the Desk entered the market, Treasury Secretary Bentsen confirmed the intervention, stating:

Our actions today in cooperation with our G-7 partners and other monetary authorities reflect a shared concern about recent developments in financial markets. We look forward to continued cooperation to maintain the conditions necessary for sustained economic expansion with low inflation.

The Desk continued purchasing dollars through late morning. However, market participants sold the dollar aggressively during the operation, especially against the mark, and at noon the dollar traded at DM 1.5855 and ¥100.40. Shortly after 12:30 p.m., the Desk entered the market for a final round of intervention, purchasing dollars against both marks and yen. In total, the Desk purchased \$1,560 million, of which \$950 million was against the German mark and \$610 million was against the Japanese yen. These amounts were equally divided between the Federal Reserve and the ESF. The dollar closed the day at DM 1.5835 and ¥100.35. U.S. bond and stock prices closed the day sharply lower as market participants perceived that the risk of interest rate changes in the aftermath of the intervention had increased.

In the week following the intervention, the dollar steadied against most European currencies and U.S. stock and bond markets initially regained some of the losses recorded on Friday. The dollar traded in a range of ¥98 to ¥101. The resignation of Prime Minister Hata on June 25 and the subsequent election of Tomiichi Murayama, the head of the Socialist party, as the new prime minister on June 29 buoyed the yen as market participants anticipated that political uncertainty in Japan would delay progress in bilateral trade negotiations with the United States and the enactment of further economic stimulus measures in Japan. On June 30, the final day of the period, the dollar traded to a new post-World War II low of ¥98.35 before rebounding slightly to close the period at ¥98.50. Against the mark, the dollar closed the period at DM 1.5869.

RESERVE POSITION

Intervention operations during the May-June period totaled \$2.81 billion, divided equally between the Federal Reserve and the U.S. Treasury's Exchange Stabilization Fund (ESF). However, because operations conducted on the last business day of April settled in early May, intervention operations settling in May and June totaled \$3.51 billion. This full settlement amount was also divided equally between the Federal Reserve and the ESF. During the period, the Federal Reserve and the ESF realized total profits of \$310.4 million and \$229.8 million, respectively, on intervention sales based on historical cost-of-acquisition exchange rates.

At the end of the period, the current values of the foreign exchange reserve holdings of the Federal Reserve and the ESF were \$22.3 billion and \$20.2 billion, respectively. The U.S. monetary authorities regularly invest their foreign currency balances in a variety of instruments that yield market-related rates of return and have a high degree of liquidity and credit quality. A portion of the balance is invested in foreign government securities. As of June 30, the Federal Reserve and the ESF each held, either directly or under repurchase agreement, \$12.0 billion in foreign government securities.

ENDNOTE

1. The dollar's movements on a trade-weighted basis are measured using an index developed by staff at the Board of Governors of the Federal Reserve System.

TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE OPERATIONS

July–September 1994

During the July-September quarter, the dollar consolidated within increasingly narrow ranges. It rose 0.6 percent against the Japanese yen and 0.1 percent against the Mexican peso, but declined 2.3 percent against the German mark, 2.9 percent against the Canadian dollar, and 1.9 percent on a trade-weighted basis.¹ Much of the period was characterized by thin summer markets and the predominance of interbank dealers and short-term speculative traders—conditions that occasionally resulted in abrupt but temporary movements in exchange rates. U.S. monetary authorities did not conduct any intervention operations during the quarter.

THE DOLLAR TRADES TO ITS LOWS OF THE PERIOD BUT SOON RETURNS TO ITS OPENING LEVELS

At the end of the prior period, with the dollar trading at DM 1.5869 and ¥98.50, many market participants perceived a risk of a further decline in the dollar, given the prospect of stronger growth in Europe and concern about the continued trade imbalances of the United States and Japan. There was some market anticipation in advance of the Naples Summit that the Group of Seven (G-7) might launch a coordinated “dollar support package.” When no formal dollar support package was announced, the dollar resumed its decline. On Monday, July 11, the dollar dropped sharply as some market participants liquidated remaining long-dollar positions and others established sizable short-dollar positions. The dollar fell further the next day, briefly reaching a twenty-month low of DM 1.5165 against the mark and a new postwar low of ¥96.60 against the yen. With the dollar perceived as oversold on a technical basis, however, traders

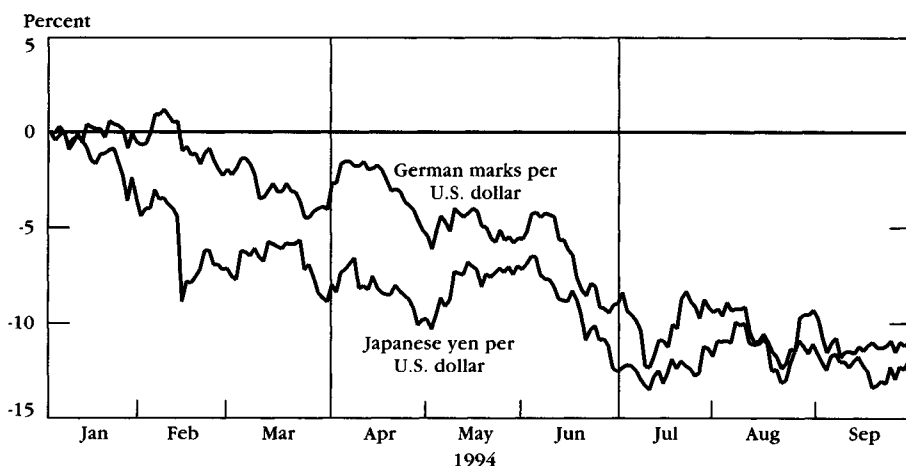
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soon took profits on their short-dollar positions, and by the end of the week the dollar had recovered almost all of its post-summit losses.

The dollar rose further in mid-July when senior U.S. officials articulated a clear preference for a stronger dollar and highlighted its advantages for the U.S. economy. Secretary Bentsen stated on July 14, "We're going to continue to be in accord with the Federal Reserve as far as their objectives to see that we have substantial growth with low inflation and work toward a stronger dollar." On July 20, Federal Reserve Chairman Alan Greenspan, in his semiannual Humphrey-Hawkins testimony before the Senate Banking Committee, said that he was troubled by the dollar's decline and noted that "any evidences of weakness in [the dollar] are neither good for the international financial system nor good for the American economy." The next day, Undersecretary of the Treasury Lawrence Summers, in his semiannual report to Congress on international economic and exchange rate policy, stated:

The Administration believes that a strengthening of the dollar against the yen and the mark would have important economic benefits for the United States. It would restore the confidence in financial markets that is important to sustaining recovery. It would boost the attractiveness of U.S. assets and the incentive for longer-term investment in the economy, and help to keep inflation low. In addition we believe—and this view is shared by other G-7 countries—

Chart 1
PERCENTAGE CHANGE IN THE DOLLAR DURING 1994
Spot Exchange Rate



Source: Federal Reserve Bank of New York.

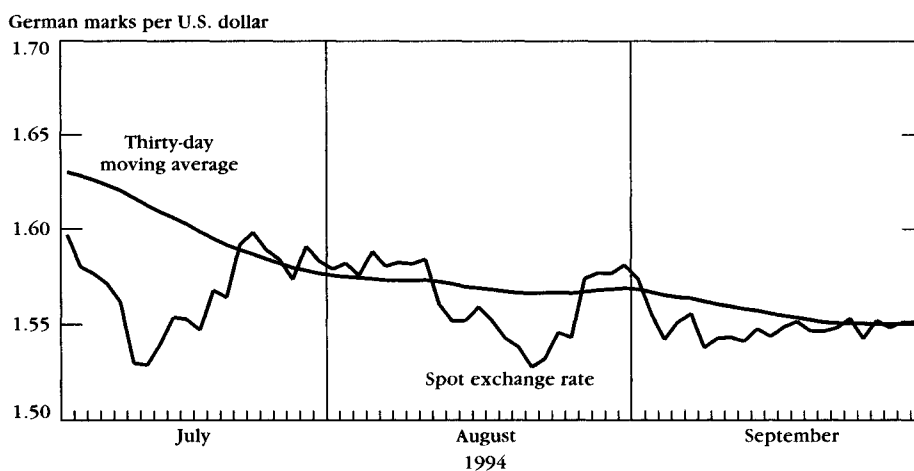
that a renewed decline of the dollar would be counterproductive to global recovery.

Market participants reacted positively to these remarks. Earlier worries that U.S. officials were unconcerned about the dollar began to dissipate, and by the end of July the dollar had moved back to DM 1.5830 and ¥99.85.

THE DOLLAR TRADES CAUTIOUSLY HIGHER AGAINST THE YEN

The dollar continued to rise gradually against the yen in late July and early August, reaching its period high of ¥101.75 on August 8. At the time, the release of positive Japanese economic statistics, notably June industrial production data and new machinery orders, fostered a market perception that Japan's economy was improving and that increased imports would help reduce its trade surplus. Moreover, foreign investors turned into net sellers of Japanese bonds and equities in July, selling the equivalent of \$5.8 billion, and this development may have helped to reduce the yen's strength. Against this backdrop, news that the United States and Japan had failed to reach an agreement on liberalizing Japan's government procurement sector before the July 31 deadline caused only a short-lived drop in the dollar. This muted reaction also reflected a realization that any possible U.S. trade sanctions would not be imposed before the end of a sixty-day "cooling off" period.

Chart 2
THE DOLLAR AGAINST THE GERMAN MARK
Spot Exchange Rate



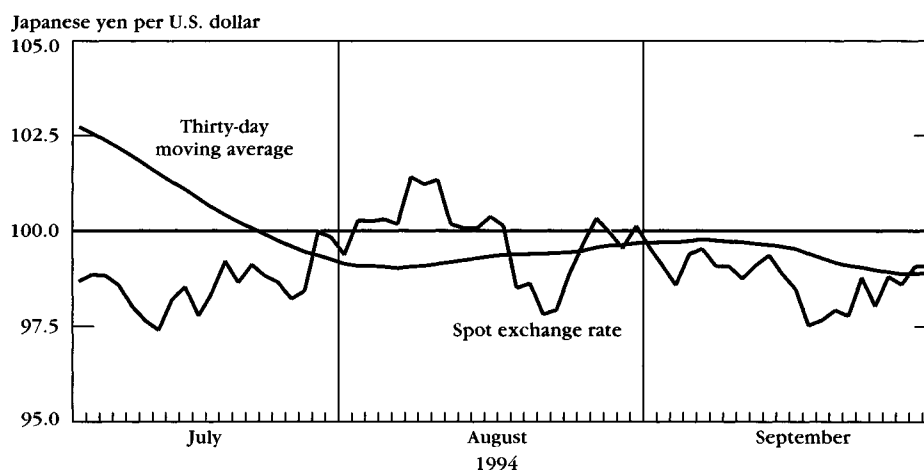
Source: Federal Reserve Bank of New York.

EXPECTATIONS OF HIGHER SHORT-TERM INTEREST RATES IN EUROPE EMERGE

In late July and early August, the dollar traded narrowly around the DM 1.58 level despite its rise against the yen. In part, the dollar's limited movement reflected a steadily growing perception among market participants that the Bundesbank's process of easing short-term interest rates might be approaching its end. Moreover, increased market concern over large fiscal deficits in several European countries served to keep the mark firm against other European currencies and, secondarily, against the dollar.

On August 11, the central banks of Italy and Sweden surprised the markets with 50 basis point increases in official lending rates and, in Sweden, a 28 basis point hike in its key money market rate. For many market participants, these unexpected rate increases created a sudden anxiety that European interest rates in general had reached their trough and would now be rising. In the days after the news, bond yields in Germany and other European countries spiked higher and the mark, buoyed by a flow of funds into mark-denominated money market instruments, rose abruptly against most European currencies. The mark also increased sharply against the dollar in the days following the rate hikes, moving from roughly DM 1.59 to DM 1.55. The dollar declined further after increases of 50 basis points in the U.S. federal funds and discount rates on August 16, as market participants apparently perceived a reduced likelihood of further U.S. rate hikes in the near term. The dollar fell to DM 1.5265 on August 22, but then started to reverse.

Chart 3
THE DOLLAR AGAINST THE JAPANESE YEN
Spot Exchange Rate



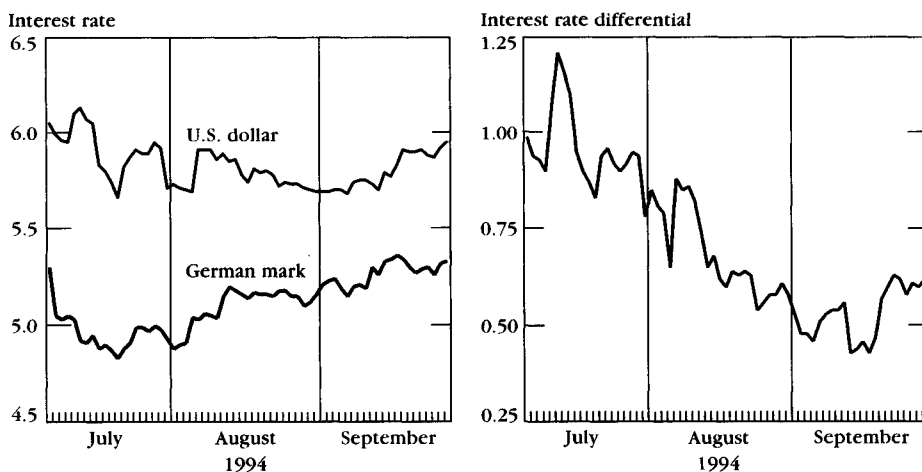
Source: Federal Reserve Bank of New York.

THE DOLLAR SETTLES INTO A NARROW RANGE AGAINST THE MARK

In late August and early September, the dollar-mark exchange rate developed a trading pattern in which it would move uneventfully for much of each week but then react abruptly on Friday to a series of data releases on U.S. GDP, nonfarm payrolls, producer prices, and industrial production and capacity utilization. The dollar's sudden swings on those Fridays appeared to track movements in U.S. bond prices, notably those of the thirty-year Treasury bond. This relationship appeared to reflect the view among some foreign exchange traders that the long bond offered a surrogate measure of foreign interest in U.S. securities, and the view among other traders that the long bond provided a proxy for inflationary expectations in the U.S. economy.

The dollar spent most of September between the DM 1.5450 and DM 1.5550 levels. In part, the dollar's tight range reflected an absence of large positions in the market and a clear reluctance on the part of market participants, many of whom had suffered trading losses during the first eight months of the year, to put capital at risk. The dollar's limited movement also appeared to reflect a mix of views on likely interest rate movements in the United States and Germany during the rest of the year. Some observers expected the Federal Reserve to raise U.S. rates aggressively to counter a perceived rise in inflationary pressures; others, anticipating a deceleration in U.S. growth, expected only a moderate rise in U.S. rates. Similarly, although most traders expected the Bundesbank to keep German rates on hold, some speculated that the Bundesbank would

Chart 4
**DIFFERENTIAL BETWEEN DOLLAR AND GERMAN MARK
SHORT-TERM INTEREST RATES**
Implied by the Three-Month Eurodeposit Futures (December 1994 Contracts)



Source: Bloomberg L.P.

raise rates by year-end while others continued to look for one more cut after the October 16 federal elections. During the latter part of September, as investors started to focus on uncertainty surrounding the German election, a reduction of long-mark positions against other European currencies provided modest support for the dollar against the mark. The dollar closed the period at DM 1.5510.

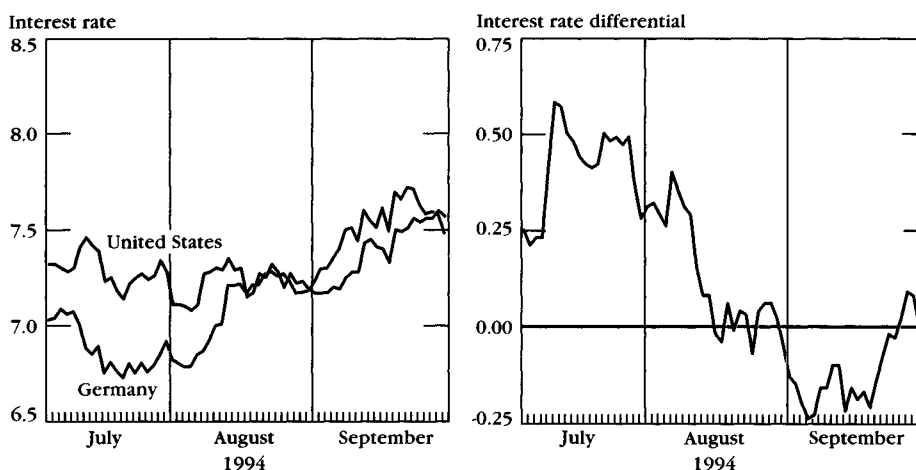
THE DOLLAR ALSO SETTLES INTO A NARROW RANGE AGAINST THE YEN AS ATTENTION SHIFTS TO U.S. TRADE TALKS WITH JAPAN

During the latter half of August, the dollar-yen exchange rate briefly dipped back below the ¥98 level, moving lower in line with the dollar-mark exchange rate. Contributing to the decline was the August 18 release of U.S. trade data for June showing a decrease in the overall trade deficit

Table 1
FOREIGN EXCHANGE HOLDINGS OF U.S. MONETARY AUTHORITIES AT PERIOD END
 Millions of Dollars

	<u>Federal Reserve</u>	<u>U.S. Treasury Exchange Stabilization Fund</u>
German marks	13,900.2	8,032.6
Japanese yen	9,163.9	12,415.2
Total	23,064.1	20,447.8

Chart 5
U.S. AND GERMAN TEN-YEAR GOVERNMENT BOND YIELDS



Source: Bloomberg L.P.

but an increase in the bilateral deficit with Japan, a development that refocused attention on U.S. trade relations with Japan.

For the remainder of the quarter, the dollar traded between the ¥98 and ¥100 levels; in large part, movements within that range were driven by changing perceptions about the likely results of the framework trade talks between the United States and Japan and the chances of an

Table 2

NET PROFITS (+) OR LOSSES (-) ON U.S. TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE OPERATIONS, BASED ON HISTORICAL COST-OF-ACQUISITION EXCHANGE RATES

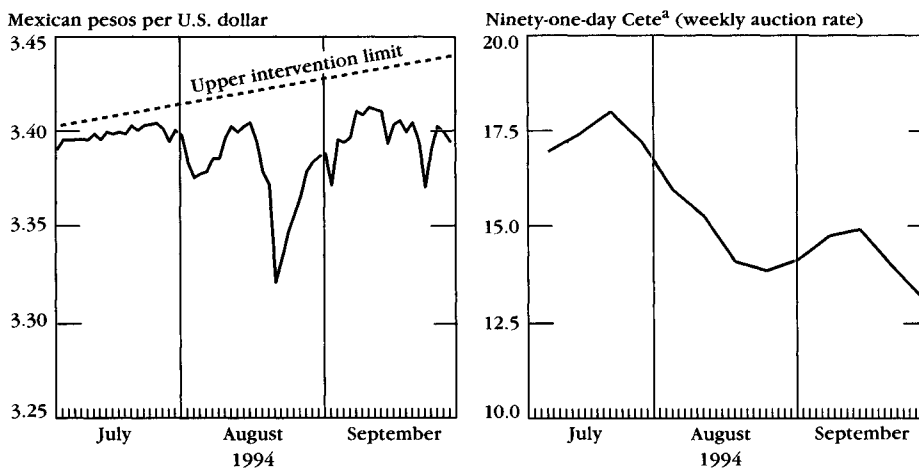
Millions of Dollars

	<u>Federal Reserve</u>	<u>U.S. Treasury Exchange Stabilization Fund</u>
Valuation profits and losses on outstanding assets and liabilities as of June 30, 1994	+4,458.2	+4,253.8
Realized profits and losses June 30, 1994 - September 30, 1994	0.0	0.0
Valuation profits and losses on outstanding assets and liabilities as of September 30, 1994	+4,973.4	+4,356.7

Note: Data are on a value-date basis.

Chart 6

THE U.S. DOLLAR AGAINST THE MEXICAN PESO AND MEXICAN SHORT-TERM INTEREST RATES



Source: Bloomberg L.P.
^a Mexican peso-denominated treasury bill.

agreement before the September 30 deadline. During the first half of September, the dollar firmed to the upper end of this range as comments by U.S. and Japanese officials suggested that the two sides were making progress toward an accord. Toward the end of the month, however, the dollar moved lower on news of a larger than expected U.S. trade deficit for July and on statements by U.S. officials suggesting that the United States would impose trade sanctions on Japan if the two sides failed to strike an agreement. As the period drew to a close, the dollar firmed again as a high-level team of Japanese officials traveled to the United States for a final round of negotiations, leading some market participants to expect a last-minute breakthrough. The dollar-yen exchange rate closed the quarter at ¥99.10.

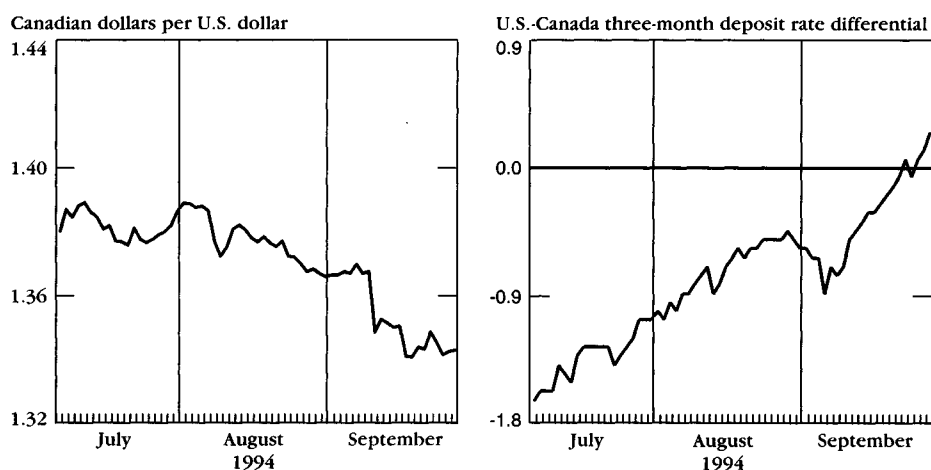
THE DOLLAR CLOSES UNCHANGED AGAINST THE MEXICAN PESO

Beginning in late July, market participants started to anticipate that Ernesto Zedillo, candidate of Mexico's Institutional Revolutionary Party (PRI), would win the August 21 presidential election. This view, combined with expectations of faster growth and lower interest rates in the year ahead, led to greater demand for Mexican stocks and peso-denominated government debt. Supported by such investor inflows, the Mexican peso rose modestly against the dollar, short-term Mexican interest rates fell, and the Mexican stock market increased about 20 percent in the month before the election.

With a Zedillo victory well discounted in the market by the time of the election, the peso gave up some of its gains on profit taking once the results became clear. Subsequently, the market

Chart 7

THE U.S. DOLLAR AGAINST THE CANADIAN DOLLAR AND THE U.S.-CANADIAN SHORT-TERM INTEREST RATE DIFFERENTIAL



Source: Bloomberg L.P.

began to focus on the renegotiation of Mexico's annual wage and price agreement between business, labor, and government—known as the “Pacto”—which also governs the workings of Mexico's crawling band exchange rate regime. Foreign and domestic investors reacted favorably to the September 24 news of the Pacto's renegotiation, in which the peso's allowable rate of depreciation was left unchanged at 0.0004 pesos per day and Mexico's inflation target was lowered from 6 percent in 1994 to 4 percent in 1995. Near the end of the period, however, these gains were offset by the assassination on September 28 of Jose Francisco Ruiz Massieu, general secretary of the PRI. The dollar-peso exchange rate closed the quarter at NP 3.3930, little changed from where it opened.

THE CANADIAN DOLLAR APPRECIATES AS POLITICAL UNCERTAINTY RECEDES

During the quarter, the Canadian dollar strengthened against the U.S. dollar as market concerns

Table 3

FEDERAL RESERVE RECIPROCAL CURRENCY ARRANGEMENTS

Millions of Dollars

<u>Institution</u>	<u>Amount of Facility as of September 30, 1994</u>	<u>Drawings during Period</u>
Austrian National Bank	250	0
National Bank of Belgium	1,000	0
Bank of Canada	2,000	0
National Bank of Denmark	250	0
Bank of England	3,000	0
Bank of France	2,000	0
Deutsche Bundesbank	6,000	0
Bank of Italy	3,000	0
Bank of Japan	5,000	0
Bank of Mexico	3,000	0
Netherlands Bank	500	0
Bank of Norway	250	0
Bank of Sweden	300	0
Swiss National Bank	4,000	0
Bank for International Settlements		
Dollars against Swiss francs	600	0
Dollars against other authorized European currencies	1,250	0
Total	32,400	0

over Quebec separatism receded, allowing investors to turn their attention to Canada's favorable mix of strong growth and low inflation. The U.S. dollar opened the period at C\$1.3791. The Canadian dollar began to appreciate in early August as opinion polls suggested that even though the Parti Québécois ("PQ") was likely to win Quebec's September 12 provincial election, support for its separatist platform was more limited. By the eve of the election, the Canadian dollar had firmed to about C\$1.3670 while spreads on Canadian interest rates over equivalent U.S. rates had narrowed considerably. The Canadian dollar firmed suddenly on September 13, the day after the election, as the PQ's narrower than expected victory over the incumbent Liberal Party and its inability to garner 50 percent of the popular vote suggested that a referendum on Quebec independence would probably not succeed. Buoyed by foreign demand for Canadian financial assets, the Canadian dollar traded to a high of C\$1.3400 in the days after the election and then closed at C\$1.3430. Canadian interest rates declined further, and by late September Canadian short-term rates were below U.S. rates.

TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE RESERVES

At the end of the period, the current value of the foreign exchange reserve holdings of the Federal Reserve and the Treasury Department's Exchange Stabilization Fund (ESF) were \$23.1 billion and \$20.4 billion, respectively. The U.S. monetary authorities regularly invest their foreign currency balances in a variety of instruments that yield market-related rates of return and have a high degree of liquidity and credit quality. A portion of the balances is invested in securities issued by foreign governments. As of September 30, the Federal Reserve and the ESF held, either directly or under repurchase agreement, \$12.4 and \$12.0 billion, respectively, in foreign government securities.

ENDNOTE

1. The dollar's movements on a trade-weighted basis are measured using an index developed by staff at the Board of Governors of the Federal Reserve System.

TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE OPERATIONS

October–December 1994

During the fourth quarter of 1994, the dollar fell 0.1 percent against the German mark, but rose 0.5 percent against the Japanese yen and 1.0 percent on a trade-weighted basis.¹ On November 2, the U.S. monetary authorities purchased \$800 million against the German mark and an equal amount against the Japanese yen, and Treasury Secretary Lloyd Bentsen issued a statement affirming the Administration's support for a stronger dollar. On November 3, the U.S. monetary authorities intervened again, this time purchasing \$500 million against the German mark and an equal amount against the Japanese yen. In other operations, the U.S. and Mexican monetary authorities activated their \$6 billion swap facility after Mexico announced, before the market opened on December 22, that the peso would be allowed to float.

THE DOLLAR DECLINES DURING OCTOBER

Having closed the prior period at DM 1.5510, the dollar traded fairly steadily against the German mark. Against the Japanese yen, the dollar rose briefly from ¥99.10, its close at the end of the prior quarter, after a partial trade agreement between the United States and Japan was announced on October 1. Soon thereafter, however, the dollar started to decline against both currencies.

Early in the period, continued signs of robust growth in the U.S. economy led market participants to question the Federal Reserve's decision not to raise rates at its September 27 meeting,

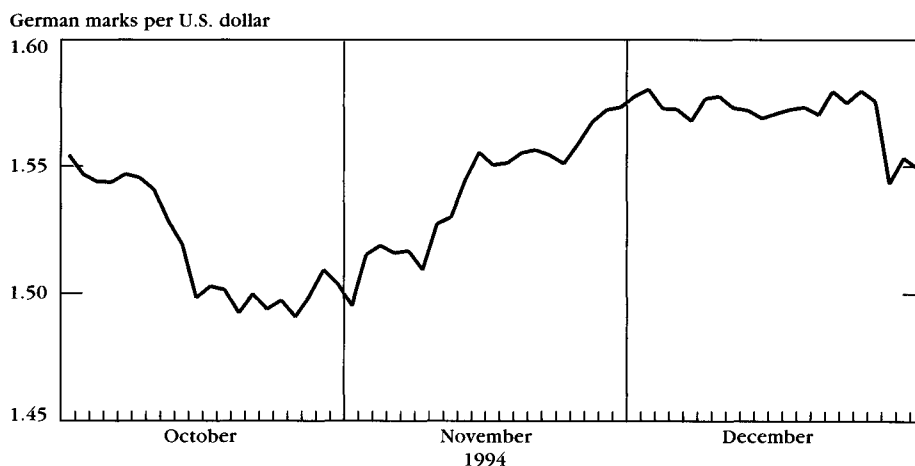
This report, presented by Peter R. Fisher, Executive Vice President, Federal Reserve Bank of New York, and Manager for Foreign Operations, System Open Market Account, describes the foreign exchange operations of the U.S. Department of the Treasury and the Federal Reserve System for the period from October 1994 through December 1994. Carol Osler was primarily responsible for preparation of the report.

and concern that the stance of monetary policy was inadequate to contain price pressures began to grow. At the same time, market participants perceived short-term and long-term U.S. rates as too low relative to comparable foreign rates and found in these differentials an explanation for the dollar's weakness during the year and a reason for further dollar weakness.

Against the mark, the dollar started to decline sharply on October 13. This occurred as expectations rose that the coalition government of Chancellor Helmut Kohl would be returned to office in Germany's October 16 federal elections and as German bond and stock markets rallied. The dollar's downward movement accelerated as it breached a number of important technical points. From its closing level of DM 1.5405 on October 12, the dollar fell to DM 1.4937 on October 17. After this abrupt decline, market discomfort with the level of U.S. interest rates grew more pronounced and market participants began to express the view that the U.S. Administration was becoming less concerned about the dollar. At the same time, the dollar also began to decline against the yen, particularly as a result of heavy dollar sales by Japanese exporters.

By October 25, the dollar had declined to ¥96.40 and a period low of DM 1.4860. The release on October 28 of GDP data containing encouraging news about the U.S. price deflator provided a brief respite, but as November began, pressure on the dollar intensified once again.

Chart 1
THE DOLLAR AGAINST THE GERMAN MARK
Spot Exchange Rate



Source: Federal Reserve Bank of New York.

U.S. MONETARY AUTHORITIES ENTER THE MARKET TO BUY DOLLARS AGAINST THE MARK AND THE YEN

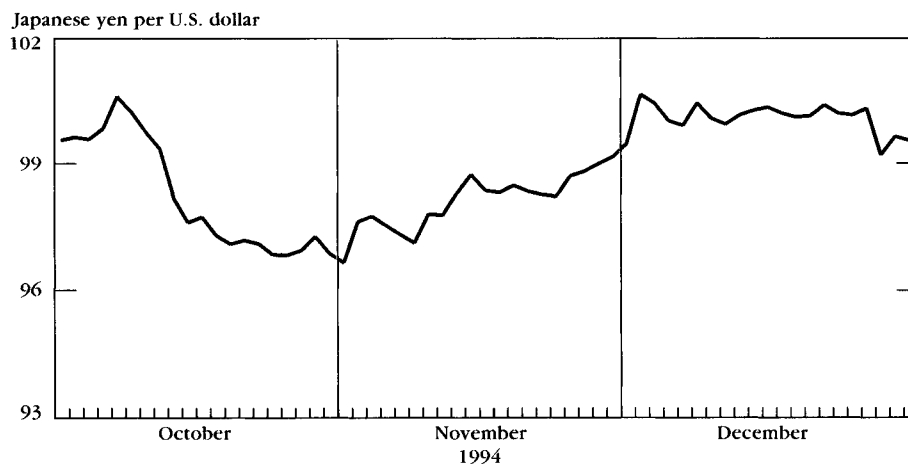
On the morning of Wednesday, November 2, the dollar fell to a new postwar low of ¥96.11 and was trading at DM 1.4910. Shortly after 11:00 a.m., the Federal Reserve Bank of New York's Foreign Exchange Desk entered the market, purchasing dollars for the U.S. monetary authorities. During the course of the day, the Desk purchased \$800 million against the mark and \$800 million against the yen.

As the intervention began, Treasury Secretary Bentsen issued the following statement:

I believe that recent movements in the dollar are inconsistent with the fundamentals of a strong investment-led recovery in the United States and the greatly enhanced ability of U.S. firms to compete around the world. This Administration is committed to sound economic policies that expand the economy's capacity and sustain recovery with low inflation. Continuation of recent foreign exchange trends would be counterproductive for the United States and the world economy. A stronger dollar will reduce inflation pressures, improve American living standards, and promote investment. We will continue to monitor developments closely in cooperation with our G-7 [Group of Seven] partners.

Later that day Bundesbank President Hans Tietmeyer expressed support for the U.S. operation,

Chart 2
THE DOLLAR AGAINST THE JAPANESE YEN
Spot Exchange Rate



Source: Federal Reserve Bank of New York.

saying "I welcome the fact that the American monetary authorities have clearly expressed their interest in a stronger dollar and want to back this with an appropriate policy. This statement [by Secretary Bentsen] is likely to contribute to bringing the value of the dollar on markets more into line with the fundamental data." After reaching intraday highs of DM 1.5220 and ¥98.00, the dollar closed at DM 1.5149 and ¥97.60.

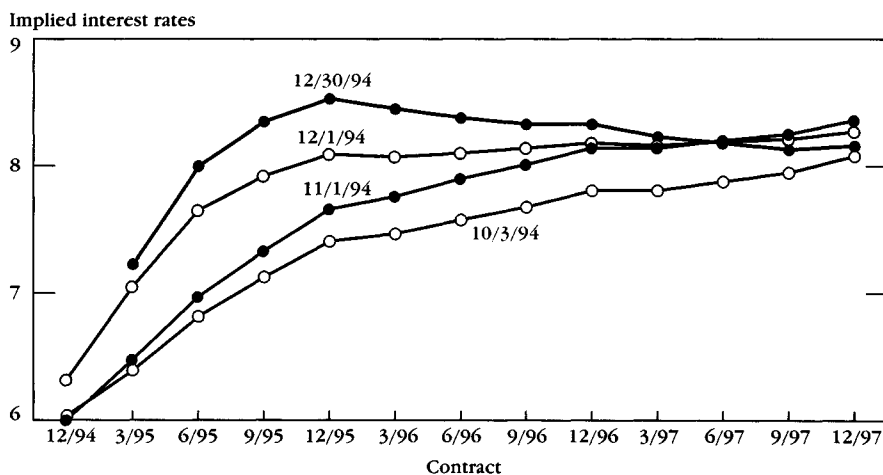
Shortly after 11:00 a.m. on Thursday, November 3, with the dollar trading at DM 1.5145 and ¥97.65, the Desk intervened a second time on behalf of the U.S. monetary authorities. During the course of the day, the Desk purchased \$500 million against the mark and \$500 million against the yen. The dollar reached intraday highs of DM 1.5260 and ¥98.30 before closing at DM 1.5185 and ¥97.73.

On both days of intervention, the yen operations of the U.S. monetary authorities were coordinated with the operations of the monetary authorities of another country. All the dollar purchases of the U.S. monetary authorities were divided equally between the Federal Reserve and the Exchange Stabilization Fund (ESF) of the Department of the Treasury.

THE DOLLAR CONTINUES TO STRENGTHEN DURING NOVEMBER

Following the intervention, the dollar continued to rise against the mark as market participants became increasingly confident that the Federal Reserve would raise official U.S. interest rates at

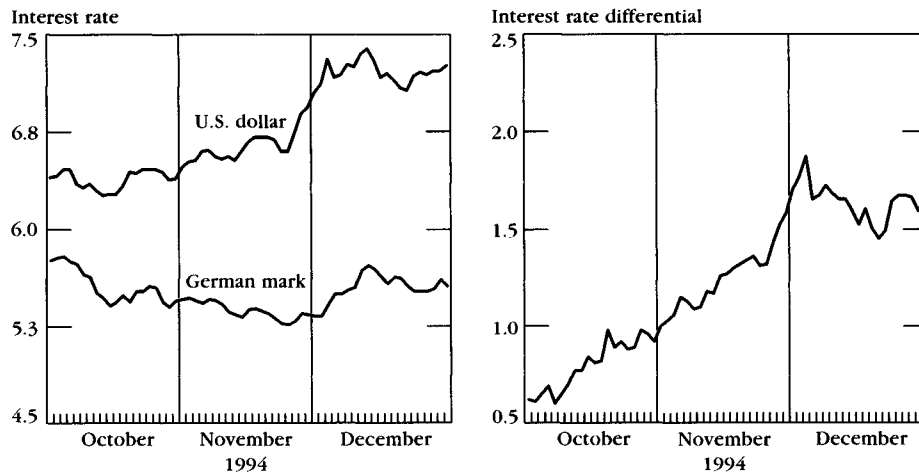
Chart 3
DOLLAR INTEREST RATES IMPLIED BY SERIES OF THREE-MONTH EURODEPOSIT FUTURES CONTRACTS



Source: Federal Reserve Bank of New York.

the November 15 meeting of the Federal Open Market Committee (FOMC). On November 9, in Asian and early European trading hours, the dollar rose abruptly in response to the results of the previous day's U.S. elections, in which the Republican party took control of both the House and the Senate. From its closing levels the day before, the dollar rose nearly two pfennigs to DM 1.5265 and about half a yen to ¥97.70 by the time the New York market opened on November 9, then traded around these levels for the rest of the day.

Chart 4
DIFFERENTIAL BETWEEN DOLLAR AND GERMAN MARK
SHORT-TERM INTEREST RATES
 Implied by the Three-Month Eurodeposit Futures (March 1995 Contracts)



Source: Bloomberg L.P.

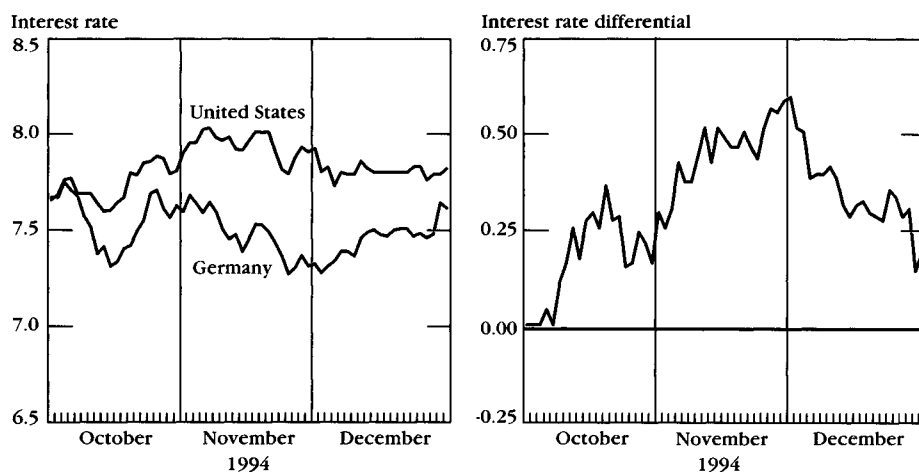
Table 1
FOREIGN EXCHANGE HOLDINGS OF U.S. MONETARY
AUTHORITIES AT PERIOD END
 Millions of Dollars

	<u>Federal Reserve</u>	<u>U.S. Treasury Exchange Stabilization Fund</u>
German marks	13,405.2	7,500.6
Japanese yen	8,510.0	11,801.0
Total	21,915.2	19,301.6

By the eve of the November 15 FOMC meeting, the dollar had risen further, reaching DM 1.5441 and ¥98.28. In the event, the Federal Reserve's decision to raise the federal funds and discount rates by 75 basis points surprised many market participants, who had generally expected the Federal Reserve to raise rates by only 50 basis points. The dollar spiked higher in response. The perceived aggressiveness of the action also encouraged some market participants to anticipate additional tightening in December.

The dollar's rally continued through the end of November as the notable widening of short-term interest rate differentials encouraged market participants to accumulate dollar positions. Market behavior began to reflect the perception that the Federal Reserve would bring short-term interest rates to levels that were high enough to restrain incipient inflationary pressures. Indeed, the dollar rose on stronger than expected U.S. data on consumer confidence, third-quarter GDP, and November nonfarm payrolls. Market participants also came to view U.S. rates as sufficiently high to compensate investors for the continued risk of dollar decline. For example, three-month U.S. rates, which had only moved above equivalent German rates in September, had come to surpass German rates by about 100 basis points. For foreign exchange market participants, the stability and subsequent decline of long-term U.S. bond yields during late November also helped to support the dollar, since these developments suggested good demand for long-term U.S. paper. The dollar closed the month at DM 1.5692 and ¥98.90, up 4.4 percent and 2.1 percent, respectively, over its values at the end of October.

Chart 5
U.S. AND GERMAN TEN-YEAR GOVERNMENT BOND YIELDS



Source: Bloomberg L.P.

THE DOLLAR TRADES QUIETLY AGAINST THE MARK AND YEN DURING MOST OF DECEMBER

The dollar's rise came to an end in early December and, with the volume of transactions reduced by the holiday season, the currency traded for most of the month around the DM 1.57 and ¥100 levels. Expectations among some market participants that the Federal Reserve would raise interest rates in late December—a view partly based on Chairman Greenspan's December 7 testimony before Congress, in which he characterized U.S. growth as stronger than expected—helped support the dollar. At the same time, however, strong German GDP data for the third quarter and volatility in U.S. interest rate markets, caused by the liquidation of the financing positions of the Orange County investment pool and of other portfolios, appeared to limit the dollar's upside. At its December 20 meeting, the Federal Reserve left U.S. interest rates unchanged, a decision that had no immediate impact on the dollar. By the end of the period, however, the dollar was nearly three pfennigs and about half a yen lower, with most of the decline coming on December 28 in thin market conditions. The dollar closed the quarter at DM 1.5490 and ¥99.55.

THE CANADIAN DOLLAR DECLINES STEADILY

After opening at C\$1.3450, the Canadian dollar weakened steadily against the U.S. currency and finished the quarter at C\$1.4025, down 4.2 percent. International investors were discouraged from purchasing Canadian dollars by short-term interest rate differentials that, for much of the period, favored the U.S. currency, especially after the mid-November rise in U.S. short-term rates. These investors also expressed concern about large Canadian government budget deficits

Table 2

NET PROFITS (+) OR LOSSES (-) ON U.S. TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE OPERATIONS, BASED ON HISTORICAL COST-OF-ACQUISITION EXCHANGE RATES

Millions of Dollars

	<u>Federal Reserve</u>	<u>U.S. Treasury Exchange Stabilization Fund</u>
Valuation profits and losses on outstanding assets and liabilities as of September 30, 1994	+4,973.4	+4,356.7
Realized profits and losses September 30 - December 31, 1994	+313.7	+270.9
Valuation profits and losses on outstanding assets and liabilities as of December 31, 1994	+4,577.6	+4,054.1

Note: Data are on a value-date basis.

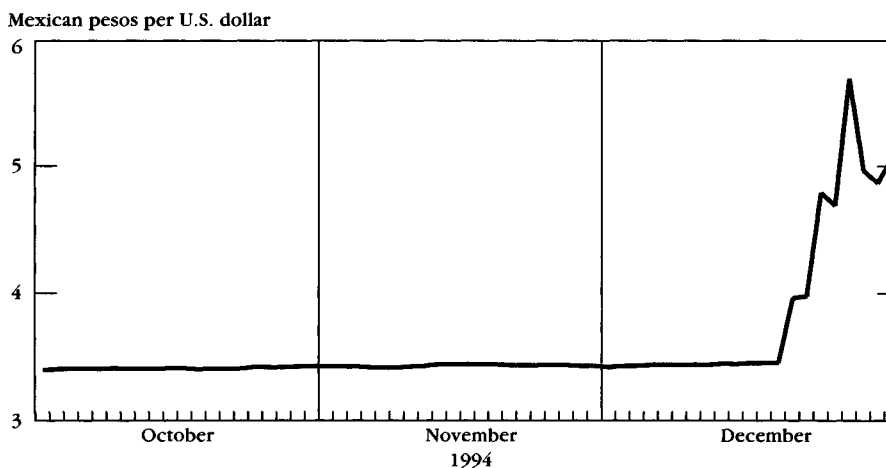
at the federal and provincial levels, and about political uncertainty stemming from Quebec's quest for sovereignty.

MEXICAN AUTHORITIES ALLOW THE PESO TO FLOAT

Over the quarter, the peso declined by 30 percent against the dollar from its initial level of 3.3930 new pesos (NP) per dollar. The move began as a gradual depreciation within the permissible range set by the government. The peso remained within its band through November and for a few weeks past President Zedillo's December 1 inauguration, despite considerable financial market pressures and increasing concern among market participants about possible inconsistencies within the Mexican economic strategy. The view increasingly took hold that, even at the lower limit of the band, the peso was overvalued given Mexico's past inflation and a current account deficit estimated at nearly 8 percent of the country's GDP. Nevertheless, investors remained hopeful that Mexico would not ultimately be required to change its exchange rate policy.

From the start of the quarter through Monday, December 19, the peso declined 2 percent to reach 3.4632. On the morning of December 20, the Mexican financial authorities, in agreement with representatives of labor and business, changed the peso's lowest permissible value against the dollar by 0.53 pesos, to NP 4.0016 from NP 3.4712 the prior day. Market participants reacted negatively, and the peso was quickly pushed to its new limit. The peso's value against the dollar dropped 12.5 percent over the course of the day.

Chart 6
THE DOLLAR AGAINST THE MEXICAN PESO
Spot Exchange Rate



Source: Federal Reserve Bank of New York.

With pressure on the peso continuing unabated, the Mexican financial authorities announced before the market opened on December 22 that "the supply and demand for currency would freely determine the exchange rate until the exchange market stabilized." It was also announced that Mexican and U.S. monetary authorities had jointly activated a pre-existing swap facility of \$6 billion. The peso closed the day at NP 4.70, 15.7 percent below its close on December 20.

During the rest of December the peso remained volatile as foreign investors continued to reduce their peso exposure. The peso closed the year at NP 4.85 per dollar.

TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE RESERVES

The U.S. monetary authorities intervened twice during the period, purchasing a total of \$2,600 million against German marks and Japanese yen. This amount was divided equally between the

Table 3

FEDERAL RESERVE RECIPROCAL CURRENCY ARRANGEMENTS

Millions of Dollars

<u>Institution</u>	<u>Amount of Facility as of December 31, 1994</u>	<u>Drawings during Period</u>
Austrian National Bank	250	0
National Bank of Belgium	1,000	0
Bank of Canada	2,000	0
National Bank of Denmark	250	0
Bank of England	3,000	0
Bank of France	2,000	0
Deutsche Bundesbank	6,000	0
Bank of Italy	3,000	0
Bank of Japan	5,000	0
Bank of Mexico	3,000	0
Netherlands Bank	500	0
Bank of Norway	250	0
Bank of Sweden	300	0
Swiss National Bank	4,000	0
Bank for International Settlements		
Dollars against Swiss francs	600	0
Dollars against other authorized European currencies	1,250	0
Total	32,400	0

Federal Reserve and the Treasury Department's ESF. The Federal Reserve and the ESF realized profits of \$313.7 million and \$270.9 million, respectively, on this intervention activity. These profits are based on historical cost-of-acquisition exchange rates.

At the end of the period, the current values of the foreign exchange reserve holdings of the Federal Reserve and the ESF were \$21.9 billion and \$19.3 billion, respectively. The U.S. monetary authorities regularly invest their foreign currency balances in a variety of instruments that yield market-related rates of return and have a high degree of liquidity and credit quality. A portion of the balances is invested in securities issued by foreign governments. As of December 31, the Federal Reserve and the ESF held, either directly or under repurchase agreement, \$9.2 billion and \$12.5 billion, respectively, in foreign government securities.

ENDNOTE

1. The dollar's movements on a trade-weighted basis are measured using an index developed by staff at the Board of Governors of the Federal Reserve System.

Financial Statements
STATEMENT OF CONDITION
 In Dollars

Assets	Dec. 30, 1994	Dec. 31, 1993
Gold certificate account	4,133,635,217	3,753,286,002
Special drawing rights certificate account	2,808,000,000	2,808,000,000
Coin	<u>18,697,679</u>	<u>10,962,156</u>
Total	6,960,332,896	6,572,248,158
Advances	0	9,250,000
United States government securities:		
Bought outright ^a	134,693,405,585	114,654,212,455
Held under repurchase agreements	9,565,000,000	12,187,000,000
Federal agency obligations:		
Bought outright	1,343,797,883	1,601,778,522
Held under repurchase agreements	<u>1,025,000,000</u>	<u>1,025,000,000</u>
Total loans and securities	146,627,203,468	129,477,240,977
Other assets:		
Cash items in process of collection	648,912,240	788,551,991
Bank premises	137,094,609	140,351,696
All other ^b	<u>10,429,060,558</u>	<u>11,003,359,701</u>
Total other assets	11,215,067,407	11,932,263,388
Interdistrict settlement account	5,852,633,645	12,725,458,508
Total assets	<u>170,655,237,416</u>	<u>160,707,211,031</u>

^a Includes securities loaned—fully secured 1,255,000,000 296,000,000

^b Includes assets denominated in foreign currencies revalued monthly at market rates.

Financial Statements
STATEMENT OF CONDITION
 In Dollars

Liabilities	Dec. 30, 1994	Dec. 31, 1993
Federal Reserve notes (net)	151,607,516,466	134,963,730,980
Reserve and other deposits:		
Depository institutions	7,105,402,568	6,968,803,928
United States Treasury—general account	7,161,094,854	14,809,010,583
Foreign—official accounts	149,274,664	287,626,759
Other	<u>263,134,324</u>	<u>196,045,821</u>
Total deposits	14,678,906,410	22,261,487,091
Other liabilities:		
Deferred availability cash items	550,535,468	746,714,038
All other	<u>1,843,013,572</u>	<u>797,989,922</u>
Total other liabilities	2,393,549,040	1,544,703,960
Total liabilities	<u>168,679,971,916</u>	<u>158,769,922,031</u>
 Capital Accounts		
Capital paid in	987,632,750	968,644,500
Surplus	<u>987,632,750</u>	<u>968,644,500</u>
Total capital accounts	<u>1,975,265,500</u>	<u>1,937,289,000</u>
Total liabilities and capital accounts	<u><u>170,655,237,416</u></u>	<u><u>160,707,211,031</u></u>

*Financial Statements***STATEMENT OF EARNINGS AND EXPENSES FOR
THE CALENDAR YEARS 1994 AND 1993**In Dollars

	1994	1993
Total current earnings	7,438,763,300	6,606,811,777
Net expenses	<u>305,700,181</u>	<u>226,105,484</u>
Current net earnings	7,133,063,119	6,380,706,293
Additions to current net earnings:		
Profit on sales of United States government securities and federal agency obligations (net)	—	14,033,132
Profit on foreign exchange	689,950,602	76,941,700
All other	<u>42,821</u>	<u>1,488,759</u>
Total additions	689,993,423	92,463,591
Deductions from current net earnings:		
Loss on sales of United States government securities and federal agency obligations (net)	9,095,296	—
All other	<u>3,305,653</u>	<u>101,114,496</u>
Total deductions	12,400,949	101,114,496
Net additions (deductions)	677,592,474	(8,650,905)
Assessments by the Board of Governors:		
Board expenditures	41,453,600	40,674,400
Federal Reserve currency costs	<u>144,484,979</u>	<u>116,794,492</u>
Total assessments	185,938,579	157,468,892
Net earnings available for distribution	<u>7,624,717,014</u>	<u>6,214,586,496</u>
Distribution of net earnings:		
Dividends paid	58,789,295	55,967,417
Transferred to surplus	18,988,250	83,623,900
Payments to United States Treasury (interest on Federal Reserve notes)	<u>7,546,939,469</u>	<u>6,074,995,179</u>
Net earnings distributed	<u>7,624,717,014</u>	<u>6,214,586,496</u>

CHANGES IN DIRECTORS AND SENIOR OFFICERS

CHANGES IN DIRECTORS

In May 1994, the Board of Governors of the Federal Reserve System reappointed Maurice R. Greenberg a class C director of this Bank for a three-year term beginning January 1995 and redesignated him Chairman of the Board and Federal Reserve Agent for the year 1995. Mr. Greenberg, who is Chairman and Chief Executive Officer of American International Group, Inc., New York, N.Y., has been serving as a class C director since June 1988 and as Chairman and Federal Reserve Agent since January 1994. He also served as Deputy Chairman for the years 1992 and 1993.

Also in May 1994, the Board of Governors reappointed David A. Hamburg Deputy Chairman for the year 1995. Dr. Hamburg, who is President of the Carnegie Corporation, New York, N.Y., has been serving as a class C director and as Deputy Chairman since January 1994.

In January 1995, member banks in Group 1 elected J. Carter Bacot a class A director, and Eugene R. McGrath a class B director, both for three-year terms beginning January 1995. Mr. Bacot, Chairman and Chief Executive Officer of The Bank of New York, New York, N.Y., succeeded Thomas G. Labrecque, Chairman and Chief Executive Officer of The Chase Manhattan Bank (National Association), New York, N.Y., who had served as a class A director from January 1992 through December 1994. Mr. McGrath, Chairman, President, and Chief Executive Officer of the Consolidated Edison Company of New York, Inc., New York, N.Y., succeeded Robert E. Allen, Chairman and Chief Executive Officer of AT&T, New York, N.Y., who had served as a class B director from April 1992 through December 1994.

Buffalo Branch

In August 1994, the Board of Governors reappointed Donald R. Rust a director of this Bank's Buffalo Branch for a three-year term beginning January 1995. Mr. Rust, who is Plant Manager of the Tonawanda Engine Plant, GM Powertrain Division, General Motors Corporation, Buffalo, N.Y., has been serving as a Branch director since January 1992.

In December 1994, the Board of Directors of this Bank appointed William E. Swan a director of the Buffalo Branch for a three-year term beginning January 1995. Mr. Swan is President and Chief Executive Officer of Lockport Savings Bank, Lockport, N.Y. On the Branch Board, he succeeded Charles M. Mitschow, Chairman of the Board, Western Region, Marine Midland Bank, Buffalo, N.Y., who had served as a director of the Branch since January 1992.

Also in December 1994, the Board of Directors of this Bank appointed Mark W. Adams a director of the Buffalo Branch for a three-year term beginning January 1995. Mr. Adams is the owner of Adams Poultry Farm, Naples, N.Y. On the Branch Board, he succeeded Richard H. Popp, Operating Partner, Southview Farm, Castile, N.Y., who had served as a Branch director since January 1989.

At the same time, the Board of this Bank redesignated Joseph J. Castiglia Chairman of the Board of the Buffalo Branch for the year 1995. Mr. Castiglia, who is President and Chief Executive Officer of Pratt & Lambert, Inc., Buffalo, N.Y., has been serving as a director of the Buffalo Branch since January 1991 and as Chairman of the Branch Board since June 1993.

CHANGES IN SENIOR OFFICERS

The following changes in the official staff at the level of vice president and above have occurred since the publication of the previous *Annual Report*:

Effective March 17, 1994:

Peter Bakstansky, formerly Vice President, was appointed Senior Vice President and assigned to the Public Information Function.

Paul B. Bennett, Senior Vice President, was designated Senior Vice President and Acting Director of Research pending the appointment of a successor to Richard G. Davis, who elected early retirement.

Terrence J. Checki, formerly Vice President, was appointed Senior Vice President and assigned to the International Bank Examinations Function.

Christine M. Cumming, formerly Vice President, was appointed Senior Vice President and assigned to the Bank Analysis and the Specialized Examinations Functions.

Christopher J. McCurdy, formerly Vice President, was appointed Senior Vice President and assigned to the Banking and Payments Studies Function.

Kathleen A. O'Neil, formerly Vice President, was appointed Senior Vice President and assigned to the Personnel and the Planning and Control Functions and as the senior officer responsible for planning, administration, and coordination in the Corporate Group.

Robert A. O'Sullivan, formerly Vice President, was appointed Senior Vice President and assigned to the Domestic Bank Examinations Function.

Carl W. Turnipseed, formerly Vice President, was appointed Senior Vice President and Branch Manager, succeeding James O. Aston, who began a leave of absence to accept a position as Senior Adviser with the Greater Buffalo Partnership.

Donald T. Vangel, Senior Vice President, was assigned as the officer in charge of the Domestic Bank Examinations Function.

Nancy Bercovici, formerly Assistant Vice President, was appointed Vice President and assigned to the International Bank Examinations Function.

Arturo Estrella, formerly Assistant Vice President, was appointed Vice President and assigned to the Financial and Market Analysis Function.

James K. Hodgetts, formerly Assistant Vice President, was appointed Vice President and assigned to the Community Affairs Office and the Compliance Examinations Function.

Willene A. Johnson, formerly Assistant Vice President, was appointed Vice President and assigned to the International Affairs Function and the Equal Employment Opportunity Office.

Barbara L. Walter, Vice President, was assigned to the Banking and Payments Studies Function and as the senior officer responsible for planning, administration, and coordination in the Research and Market Analysis Group.

Effective May 19, 1994:

Margaret L. Greene, Senior Vice President, was designated Senior Vice President and Economic Adviser and assigned to the Research and Market Analysis Group.

M. Akbar Akhtar, formerly Vice President, was designated Economic Adviser and assigned to the Research and Market Analysis Group.

Effective June 20, 1994:

Elizabeth Tibbals joined the Bank as Counsel and Vice President in the Legal Function. Ms. Tibbals had been Deputy Superintendent and Counsel at the New York State Banking Department.

Effective September 8, 1994:

Frederic S. Mishkin joined the Bank as Executive Vice President and Director of Research. Dr. Mishkin had been Professor of Economics at Columbia University's Graduate School of Business.

Paul B. Bennett was designated Senior Vice President and Deputy Director of Research.

Effective September 30, 1994:

Kathleen A. O'Neil, Senior Vice President, and Nirmal V. Manerikar, Vice President, were assigned to the new Office of Corporate Consultancy, in addition to their other responsibilities.

Effective October 6, 1994:

Peter Ryerson Fisher, formerly Senior Vice President, was appointed Executive Vice President with responsibility for the Markets Group.

Mary R. Clarkin, Senior Vice President, elected early retirement and was assigned interim responsibility for the Loans and Credits Function.

Pauline E. Chen, formerly Assistant Vice President, was appointed Vice President and assigned to the new Market Accounting and Operations Function.

Betsy Buttrill White, Vice President, was assigned responsibility for the Market Surveillance Function.

Effective November 7, 1994:

MarySue Fisher, Counsel and Vice President, was designated Vice President and assigned to the Banking and Payments Studies Function.

Effective January 1, 1995:

The Federal Reserve Banks established a new financial services management structure and a series of product offices. One of these new offices, the Wholesale Product Office—encompassing all large-dollar transfer businesses, including the Fedwire funds transfer and book-entry securities services—was assigned to James H. Oltman, First Vice President of this Bank, as Product Director. Carol W. Barrett, Senior Vice President, was designated Wholesale Product Manager. Daniel C. Bolwell, formerly Assistant Vice President, was appointed Vice President and assigned to that Office. Dara Hunt, formerly of the Federal Reserve Bank of Chicago, joined the Bank as Vice President and was also assigned to that Office.

John M. Eighmy, Senior Vice President, was assigned as the senior officer responsible for planning, administration, and coordination in the Banking Services Group. All of his other assignments continued.

Michele S. Godfrey, formerly Secretary and Vice President, was appointed Senior Vice President in charge of the Central Bank Services Function.

Betsy Butrill White, formerly Vice President, was appointed Senior Vice President, continuing as the officer in charge of the Market Surveillance Function and as the senior officer responsible for planning, administration, and coordination in the Markets Group.

M. Akbar Akhtar was designated Vice President and assigned to the Public Information Function.

Robert J. Ambrose, Assistant General Auditor, was promoted to the level of vice president.

Steven J. Garofalo, Vice President, was assigned responsibility for the Electronic Payments and the Fiscal Services Functions.

Patricia Y. Jung, Vice President, was assigned to the Systems Development Function with responsibility for the Open Systems Support Department, the Markets and Accounts Systems Department, and the Special Projects Staff.

Dino Kos, formerly Assistant Vice President, was appointed Vice President and assigned to the Foreign Exchange Function.

Sandra C. Krieger, formerly Assistant Vice President, was appointed Vice President and assigned to the Open Market Function.

Monika K. Novik, formerly Assistant Vice President, was appointed Vice President and assigned to the Systems Development Function with responsibility for the Bank Supervision and Administrative Systems Department, the Cash and Check Systems Department, the Data Base Administration Department, and the Advanced Technology Staff.

Janet K. Rogers, formerly Assistant Vice President, was appointed Vice President and assigned to the Loans and Credits Function.

George W. Ryan, Vice President, was assigned as officer in charge of the Fiscal Services Function in anticipation of the retirement of Whitney R. Irwin, Vice President.

Robert C. Scrivani, formerly Assistant Vice President, was appointed Vice President in charge of the Human Resources Function.

Effective January 13, 1995:

Edward J. Frydl, Senior Adviser, Financial and Market Analysis Group, resigned from the Bank. Mr. Frydl joined the Bank in 1973 and was appointed an officer in 1981.

Effective February 1, 1995:

Sandra C. Krieger, Vice President, was designated as the officer in charge of the Open Market Function and as Manager for Domestic Operations of the System Open Market Account. In these respects, she succeeded Joan E. Lovett, Senior Vice President, who had elected early retirement and who was assigned the interim role of adviser to the Bank.

James O. Aston, formerly Vice President, retired from the Bank. Mr. Aston joined the Bank in 1957 and was appointed an officer in 1968.

Effective February 2, 1995:

Terrence J. Checki, Senior Vice President, was appointed Adviser to the President, reporting to the President on matters related to financial developments in emerging nations.

On March 16, 1995, the Bank announced the appointment of Ernest T. Patrikis as First Vice President of the Bank, effective June 1, 1995. Mr. Patrikis, formerly Executive Vice President and General Counsel, succeeds James H. Oltman, who announced his retirement, effective May 31, 1995, after more than thirty-four years of distinguished service. Mr. Oltman joined the Bank in February 1961 and was appointed an officer in January 1964.

Effective March 16, 1995:

Thomas C. Baxter, Jr., formerly Deputy General Counsel and Senior Vice President, was appointed Executive Vice President and General Counsel.

Kathleen A. O'Neil, formerly Senior Vice President, was appointed Executive Vice President and assigned responsibility for the Corporate Group.

Mary R. Clarkin, Senior Vice President, was designated Senior Adviser for market-related issues.

Janet K. Rogers, Vice President, was assigned as the officer in charge of the Loans and Credits Function and as the senior officer responsible for planning, administration, and coordination in the Corporate Group.

Christine M. Cumming, Senior Vice President, was assigned responsibility for the Advisory and Technical Services Function, in the Bank Supervision Group. Her responsibilities for the Bank Analysis Function continue.

Robert A. O'Sullivan, Senior Vice President, was assigned to the Financial Examinations Function.

Donald T. Vangel, Senior Vice President, was assigned responsibility for the Financial Examinations Function.

Nancy Bercovici, Vice President, was assigned to the Financial Examinations Function.

Frank C. Eiseman, formerly Senior Operations Officer at the Federal Reserve Employee Benefits System, rejoined the Bank as Vice President and was assigned to the Statistics Function.

James K. Hodgetts, Vice President, was assigned responsibility for Career Development in the Bank Supervision Group.

George R. Junker, Vice President, was assigned to the Advisory and Technical Services Function.

Elaine D. Mauriello, formerly Assistant Vice President, was appointed Vice President and assigned responsibility for the Supervision Support Function.

Raleigh M. Tozer, Counsel and Vice President, was designated Deputy General Counsel and Vice President.

Effective April 5, 1995:

Willene A. Johnson, Vice President, was assigned to the Equal Employment Opportunity Office.

DIRECTORS OF THE FEDERAL RESERVE BANK OF NEW YORK

<i>Directors</i>	<i>Term expires Dec. 31</i>	<i>Class</i>
ROBERT G. WILMERS Chairman, President, and Chief Executive Officer Manufacturers and Traders Trust Company, Buffalo, N.Y.	1995	A
J. WILLIAM JOHNSON Chairman and Chief Executive Officer The First National Bank of Long Island, Glen Head, N.Y.	1996	A
J. CARTER BACOT Chairman and Chief Executive Officer The Bank of New York, New York, N.Y.	1997	A
WILLIAM C. STEERE, JR. Chairman and Chief Executive Officer Pfizer Inc., New York, N.Y.	1995	B
SANDRA FELDMAN President, United Federation of Teachers, New York, N.Y.	1996	B
EUGENE R. McGRATH Chairman, President, and Chief Executive Officer Consolidated Edison Company of New York, Inc., New York, N.Y.	1997	B
HERBERT L. WASHINGTON Owner, HLW Fast Track, Inc., Rochester, N.Y.	1995	C
DAVID A. HAMBURG, <i>Deputy Chairman</i> President, Carnegie Corporation, New York, N.Y.	1996	C
MAURICE R. GREENBERG, <i>Chairman and Federal Reserve Agent</i> Chairman and Chief Executive Officer American International Group, Inc., New York, N.Y.	1997	C
 <i>Directors—Buffalo Branch</i>		
GEORGE W. HAMLIN IV President and Chief Executive Officer The Canandaigua National Bank and Trust Company, Canandaigua, N.Y.	1995	
F.C. RICHARDSON President, Buffalo State College, Buffalo, N.Y.	1995	
JOSEPH J. CASTIGLIA, <i>Chairman</i> President and Chief Executive Officer Pratt & Lambert, Inc., Buffalo, N.Y.	1996	

Directors—Buffalo Branch (Continued)

Term expires Dec. 31

LOUISE C. WOERNER Chairman and Chief Executive Officer HCR, Rochester, N.Y.	1996
MARK W. ADAMS Owner, Adams Poultry Farm, Naples, N.Y.	1997
DONALD L. RUST Plant Manager, Tonawanda Engine Plant, GM Powertrain Division General Motors Corporation, Buffalo, N.Y.	1997
WILLIAM E. SWAN President and Chief Executive Officer Lockport Savings Bank, Lockport, N.Y.	1997

ADVISORY GROUPS

Federal Advisory Council

Second District Member and Alternate Member

WALTER V. SHIPLEY, *Member*
Chairman
Chemical Banking Corporation, New York, N.Y.

EDWARD D. MILLER, *Alternate Member*
President
Chemical Banking Corporation, New York, N.Y.

Economic Advisory Panel

JAMES ANNABLE
First National Bank of Chicago

GLENN HUBBARD
Columbia University

BEN S. BERNANKE
Princeton University

PETER B. KENEN
Princeton University

PHILLIP D. CAGAN
Columbia University

MICKEY LEVY
Nations Bank

RUDIGER W. DORNBUSCH
Massachusetts Institute of Technology

WILLIAM POOLE
Brown University

MARTIN S. FELDSTEIN
Harvard University

ROBERT J. SHILLER
Yale University

BENJAMIN M. FRIEDMAN
Harvard University

WILLIAM L. SILBER
New York University

Advisory Council on Small Business and Agriculture

FREDERICK D. CLAUSER
President, Koh-I-Noor Inc., Bloomsbury, N.J.

CHRISTOPHER C. COLLINS
President, Nuttall Gear Corporation, Niagara Falls, N.Y.

JOHN W. LINCOLN
President, Linholm Farm, Bloomfield, N.Y.

FRANK A. NIGRELLI
President and Chief Executive Officer
Knight Manufacturing Co., Lindenhurst, N.Y.

JAMES I. NIXON
President and Chief Executive Officer
Inline Brake Manufacturing Corp., Clifton, N.J.

MARTIN SILVER
President and Chief Executive Officer
Northeast Wood Crafts Inc., Amsterdam, N.Y.

JOAN SNYDER
The American Family Farm, Inc., Stuyvesant, N.Y.

J. BRIAN THEBAULT
President and Chief Executive Officer
L.P. Thebault Company, Parsippany, N.J.

International Capital Markets Advisory Committee

WILLIAM J. BRODSKY
President and Chief Executive Officer
Chicago Mercantile Exchange
Chicago, Illinois

MATHIS CABIALLAVETTA
Executive Vice President and Member of the Executive
Board
Union Bank of Switzerland
Zurich, Switzerland

MEINHARD CARSTENSEN
Member of the Board of Managing Directors
Dresdner Bank Aktiengesellschaft
Frankfurt, Germany

JON CORZINE
Senior Partner and Chairman
Goldman, Sachs and Co.
New York, N.Y.

BRUCE C. GALLOWAY
Senior Executive Vice President
Corporate Banking
Royal Bank of Canada
Toronto, Canada

ING. RICARDO GUAJARDO TOUCHE
Director General
Bancomer
La Colonia Xoco, Mexico

JOHN G. HEIMANN
Chairman
Global Financial Institutions
New York, N.Y.

JOHN M. HENNESSY
Chairman and Chief Executive Officer
CS First Boston, Inc.
New York, N.Y.

JAN KALFF
Chairman, Managing Board
ABN/Amro Bank
Amsterdam, The Netherlands

HENRY KAUFMAN
President
Henry Kaufman and Company, Inc.
New York, N.Y.

KOICHI KIMURA
Deputy President
Daiwa Securities Co., Ltd.
Tokyo, Japan

YOH KUROSAWA
President
The Industrial Bank of Japan, Ltd.
Tokyo, Japan

International Capital Markets Advisory Committee (Continued)

KENNETH LIPPER
Chairman
Lipper & Company, LP
New York, N.Y.

TOSHIO MORIKAWA
President
The Sumitomo Bank, Ltd.
Tokyo, Japan

H. ONNO RUDING
Vice Chairman
Citicorp - Citibank
New York, N.Y.

EUGENE B. SHANKS, JR.
President
Bankers Trust New York Corporation
New York, N.Y.

ANDREW M. TUCKEY
Chairman
Baring Brothers Limited
London, England

Thrift Institutions Advisory Panel

DAVID E. A. CARSON
President and Chief Executive Officer
People's Bank
Bridgeport, Conn.

HERBERT G. CHORBAJIAN
Chairman, President, and Chief Executive Officer
Albany Savings Bank, FSB
Albany, N.Y.

JOSEPH P. GEMMELL
Chairman, President, and Chief Executive Officer
Bankers Savings
Perth Amboy, N.J.

EDWARD C. GIBNEY
President
Boiling Springs Savings Bank
Rutherford, N.J.

LEONARD S. GUDELSKI
President and Chief Executive Officer
Hudson City Savings Bank
Paramus, N.J.

JAMES M. LARGE, JR.
Chairman and Chief Executive Officer
The Dime Savings Bank, FSB
Hewlett, N.Y.

THOMAS M. O'BRIEN
Chairman, President, and Chief Executive Officer
North Side Savings Bank
Floral Park, N.Y.

WILLIAM E. SWAN
President and Chief Executive Officer
Lockport Savings Bank
Lockport, N.Y.

CHARLES M. WHITNEY
President and Chief Executive Officer
Empire Corporate Federal Credit Union
Albany, N.Y.

OFFICERS OF THE FEDERAL RESERVE BANK OF NEW YORK

WILLIAM J. McDONOUGH, President
JAMES H. OLTMAN, First Vice President
ERNEST T. PATRIKIS, Executive Vice President^a

THOMAS C. BAXTER, JR., Executive Vice President and General Counsel, Legal	FREDERIC S. MISHKIN, Executive Vice President and Director of Research, Research and Market Analysis
SUZANNE CUTLER, Executive Vice President, Banking Services	KATHLEEN A. O'NEIL, Executive Vice President, Corporate
CHESTER B. FELDBERG, Executive Vice President, Bank Supervision	ROBERTA J. PUSCHEL, Executive Vice President, Bank Supervision
PETER RYERSON FISHER, Executive Vice President, Markets	ISRAEL SENDROVIC, Executive Vice President, Automation and Systems Services

Audit

ROBERT M. ABPLANALP, General Auditor and Senior Vice President	LORETTA G. ANSBRO, Audit Officer
ROBERT J. AMBROSE, Assistant General Auditor	EDWARD J. CHURNEY, Manager, Auditing Department
IRA M. LEVINSON, Assistant Vice President	DAVID TICK, Manager, Auditing Department

AUTOMATION AND SYSTEMS SERVICES GROUP

ISRAEL SENDROVIC, Executive Vice President

Automation Planning and Support

JAMES H. GAVER, Vice President

Building Services

JOHN F. SOBALA, Vice President	RICHARD L. PRISCO, Manager, Building Services Department
JASON M. STERN, Assistant Vice President	DONALD J. ROHRBACH, Manager, Administrative Support Services Department
JEROME P. PERLONGO, Manager (Night Officer)	

^a Appointed First Vice President effective 6/1/95 following retirement of James H. Oltman on 5/31/95.

AUTOMATION AND SYSTEMS SERVICES GROUP (Continued)

Data Processing

PETER J. FULLEN, Vice President

PETER M. GORDON, Assistant Vice President

GERALD HAYDEN, Assistant Vice President

IRA S. ADLER, Manager, Contingency Operations and Quality Assurance Department

JEFFREY C. BLYE, Data Processing Technical Officer, Operations and Communications Support Department

LEONARD E. FRIEDMAN, Manager, Fedwire and Communications Operations Department

LENNOX A. MYRIE, Manager, General Computer Operations Department

ISAAC B. OBSTFELD, Manager, Operations and Communications Support Department

Security Control

RALPH A. CANN, III, Senior Vice President

HERBERT W. WHITEMAN, JR., Vice President

RICHARD P. PASSADIN, Assistant Vice President

Statistics

SUSAN F. MOORE, Vice President

FRANK C. EISEMAN, Vice President

KENNETH P. LAMAR, Manager, Financial Reports Department

PAULA BETH SCHWARTZBERG, Manager, Data Reporting Department

Systems Development

RALPH A. CANN, III, Senior Vice President

OM P. BAGARIA, Vice President

PATRICIA Y. JUNG, Vice President

MONIKA K. NOVIK, Vice President

CLAUDIA H. COUCH, Assistant Vice President

MICHAEL J. RECUPERO, Assistant Vice President

MIRIAM I. WIEBOLDT, Assistant Vice President

STANLEY G. BARWINSKI, Manager, Data Systems Department

DESMOND W. BURKE, Manager, Electronic Payments Systems Department

MAUREEN G. COZZI, Manager, Markets and Accounts Systems Department

VIERA A. CROUT, Manager, Advanced Technology Staff

CHRISTOPHER M. KELL, Systems Development Officer, Special Projects Staff

PETER SMEJKAL, Manager, Operations Systems Department

MARIE J. VEIT, Manager, Electronic Payments Systems Department

HARRY M. ZIMBALIST, Manager, Open Systems Support Department

BANK SUPERVISION GROUP

CHESTER B. FELDBERG, Executive Vice President

ROBERTA J. PUSCHEL, Executive Vice President

BANK SUPERVISION GROUP (Continued)

Advisory and Technical Services

CHRISTINE M. CUMMING, Senior Vice President
GEORGE R. JUNCKER, Vice President
ADAM GILBERT, Assistant Vice President
JOSEPH L. GALATI II, Manager

BARBARA A. KLEIN, Manager
JEANNETTE M. PODGORSKI, Manager
THOMAS WINES, Manager

Bank Analysis

CHRISTINE M. CUMMING, Senior Vice President
GARY HABERMAN, Adviser
KAUSAR HAMDANI, Assistant Vice President

SARAH DAHLGREN, Manager, Bank Analysis
Department

Banking Applications

WILLIAM L. RUTLEDGE, Senior Vice President
JOHN S. CASSIDY, Assistant Vice President

DAVID L. FANGER, Assistant Vice President

Community Affairs

WILLIAM L. RUTLEDGE, Senior Vice President
JAMES K. HODGETTS, Vice President

ELIZABETH RODRIGUEZ JACKSON, Manager

Compliance Examinations

WILLIAM L. RUTLEDGE, Senior Vice President
JAMES K. HODGETTS, Vice President
ELIZABETH S. IRWIN-McCAUGHEY, Assistant
Vice President

ASSUNTA MUGLIA, Examining Officer,
Compliance Examinations Department

Financial Examinations

DONALD T. VANGEL, Senior Vice President
ROBERT A. O'SULLIVAN, Senior Vice President
NANCY BERCOVICI, Vice President
FRED C. HERRIMAN, JR., Assistant Vice President
ALBERT J. RUBBO, Assistant Vice President
WALTER W. ZUNIC, Adviser
MARIO ABBATTISTA, Examining Officer
MARGARET E. BRUSH, Examining Officer
B. GERARD DAGES, Manager

CARMINE GIOIOSO, Examining Officer
JOHN A. GRECO, Examining Officer
JOHN HEINZE, Examining Officer
THOMAS A. ORAVEZ, Examining Officer
RONA POCKER, Examining Officer
ROBERT SCHLINDRA, Examining Officer
DONALD E. SCHMID, Manager
LISA STEPHENS, Examining Officer
ALBERT TOSS, Manager

BANK SUPERVISION GROUP (Continued)

Supervision Support

WILLIAM L. RUTLEDGE, Senior Vice President

MARK MINDLIN, Manager

ELAINE D. MAURIELLO, Vice President

JANE W. THOMAS, Manager

NATHAN BEDNARSH, Assistant Vice President

BANKING SERVICES GROUP

SUZANNE CUTLER, Executive Vice President

Accounting

JOHN M. EIGHMY, Senior Vice President

LEON R. HOLMES, Assistant Vice President

RICHARD J. GELSON, Vice President

VALERIE I. RAINFORD, Manager, Accounting
Department

Bank Services

BRUCE A. CASSELLA, Bank Services Officer

Cash

JOHN M. EIGHMY, Senior Vice President

FELICIA WIGGIN, Manager, Paying and Receiving
Department

JOSEPH P. BOTTA, Vice President

MICHAEL L. ZIMMERMAN, Manager, Operations
Support Department

THOMAS J. LAWLER, Assistant Vice President

L. WENDY WEBB, Manager, Currency Verification
Department

Central Bank Services

MICHELE S. GODFREY, Senior Vice President

TIMOTHY J. FOGARTY, Manager
Central Bank Services Department

FRANCIS J. REISCHACH, Assistant Vice President

Check

JOHN M. EIGHMY, Senior Vice President

ANTHONY N. SAGLIANO, Regional Check
Manager, Jericho Office

PAUL L. McEVILY, Vice President

RICHARD P. CASSERLY, Manager, Check Services
Department

DONALD R. ANDERSON, Regional Check
Manager, Jericho Office

KENNETH M. LEFFLER, Check Officer

ANGUS J. KENNEDY, Regional Check Manager,
Utica Office

MATTHEW J. PUGLISI, Regional Check Manager,
East Rutherford Operations Center

BANKING SERVICES GROUP (Continued)

Electronic Payments

STEVEN J. GAROFALO, Vice President

HENRY F. WIENER, Vice President

ANDREW HEIKAUS, Assistant Vice President

MICHAEL W. MOWBRAY, Assistant Vice President

ROBERT T. ASHMAN, Manager, Electronic
Operations Support Department

GARY M. BERTONE, Manager, Electronic
Operations Support Department

PATRICIA HILT, Manager, Funds Transfer
Department

GERALD V. LOMBARDO, Manager, Securities
Transfer Department

EROC Administrative Services

JOHN M. EIGHMY, Senior Vice President

JOSEPH D. J. DeMARTINI, Manager, EROC
Administrative Services Department

Fiscal Services

STEVEN J. GAROFALO, Vice President

WHITNEY R. IRWIN, Vice President

GEORGE W. RYAN, Vice President

HILDON G. JAMES, Assistant Vice President

ROBERT G. KRAUS, Manager, Government Bond
Department

CHRISTINA H. RYAN, Manager, Safekeeping
Department

Strategic Planning Support

ANNE F. BAUM, Manager

CORPORATE GROUP

KATHLEEN A. O'NEIL, Executive Vice President

Equal Employment Opportunity

WILLENE A. JOHNSON, Vice President

Human Resources

ROBERT C. SCRIVANI, Vice President

ELIZABETH G. MINDLIN, Assistant Vice President

EVELYN E. KENDER, Manager, Human Resources
Services Department

GERALD L. STAGG, M.D., Medical Director, Human
Resources Services Department

RONA B. STEIN, Manager, Human Resources
Services Department, and Assistant Secretary

ROSEANN STICHNOTH, Manager, Human
Resources Services Department

JOANNE M. VALKOVIC, Manager, Human
Resources Operations and Support Department

SHARON T. WONG, Manager, Human Resources
Operations and Support Department

CORPORATE GROUP (Continued)

International Affairs

SUSAN A. HICKOK, Assistant Vice President

Loans and Credits

JANET K. ROGERS, Vice President

MARYANN MARON, Manager, Loans and Credits
Department

Office of Corporate Consultancy

NIRMAL V. MANERIKAR, Vice President

Office of Regional Strategies

ELIZABETH RODRIGUEZ JACKSON, Manager

Planning and Control

NIRMAL V. MANERIKAR, Vice President

LORRAINE J. PRENTIS, Manager, Management
Information Department

Public Information

PETER BAKSTANSKY, Senior Vice President

STEVEN R. MALIN, Secretary and Assistant Vice
President

M. AKBAR AKHTAR, Vice President

Secretary's Office

STEVEN R. MALIN, Secretary and Assistant Vice
President

RONA B. STEIN, Manager and Assistant Secretary

DOROTHY M. SOBOL, Assistant Vice President and
Assistant Secretary

Service

ROBERT V. MURRAY, Vice President

JOSEPH R. PRANCL, JR., Manager, Food and Office
Services Department

MARTIN P. CUSICK, Assistant Vice President

WILLIAM J. KELLY, Manager, Protection
Department

Emerging Markets

TERRENCE J. CHECKI, Adviser to the President

MARILYN E. SKILES, International Adviser

LEGAL GROUP

THOMAS C. BAXTER, JR., Executive Vice President
and General Counsel

JOYCE M. HANSEN, Deputy General Counsel and
Senior Vice President

RALEIGH M. TOZER, Deputy General Counsel and
Vice President

ELIZABETH TIBBALS, Counsel and Vice President

HAERAN KIM, Counsel

WEBSTER B. WHITE, Counsel

MARTIN C. GRANT, Counsel

TIMOTHY D. MAHONEY, Manager, Legal
Department

ERIC A. MARTIN, Counsel

MICHAEL S. NELSON, Counsel

JONATHAN I. POLK, Counsel

KAREN A. WEST, Counsel^a

MARKETS GROUP

PETER RYERSON FISHER, Executive Vice
President

MARY R. CLARKIN, Senior Adviser

Foreign Exchange

DINO KOS, Vice President

Market Accounting and Operations

PAULINE E. CHEN, Vice President

ROBERT W. DABBS, Assistant Vice President

DANILO G. DUNGCA, Manager, Accounting and
Settlement Department

Market Surveillance

BETSY BUTTRILL WHITE, Senior Vice President

Open Market

SANDRA C. KRIEGER, Vice President

KENNETH J. GUENTNER, Assistant Vice President

JOAN E. LOVETT, Senior Vice President

GEORGE G. BENTLEY, Assistant Vice President

LAUREN A. HARGRAVES, Manager, Operations
Development Staff

DEBORAH A. PERELMUTER, Manager, Market
Surveillance Department

ANN-MARIE MEULENDYKE, Adviser

R. SPENCE HILTON, Manager, Trading and
Analysis Staff

^a On leave of absence.

RESEARCH AND
MARKET ANALYSIS GROUP

FREDERIC S. MISHKIN, Executive Vice President
and Director of Research

MARGARET L. GREENE, Senior Vice President and
Economic Adviser

PAUL B. BENNETT, Senior Vice President and
Deputy Director of Research

Banking and Payments Studies

CHRISTOPHER J. McCURDY, Senior Vice President

LAWRENCE J. RADECKI, Assistant Vice President

MARYSUE FISHER, Vice President

LAWRENCE M. SWEET, Assistant Vice President^a

BARBARA L. WALTER, Vice President

JOHN WENNINGER, Adviser

BEVERLY J. HIRTLE, Assistant Vice President

Domestic Research

CHARLES STEINDEL, Assistant Vice President

RICHARD W. PEACH, Research Officer and
Senior Economist

ETHAN S. HARRIS, Research Officer and
Senior Economist

Financial Markets and Institutions

ARTURO ESTRELLA, Vice President

PATRICIA C. MOSSER, Research Officer and
Senior Economist^a

ROBERT N. McCAULEY, Assistant Vice President^a

JOHN KAMBHU, Research Officer and Senior
Economist

ELI M. REMOLONA, Research Officer and
Senior Economist

International Finance

RICHARD M. CANTOR, Assistant Vice President

International Macroeconomics

HOWARD J. HOWE, Research Officer and
Senior Economist

Publications

DOROTHY M. SOBOL, Assistant Vice President and
Assistant Secretary

Research Support

BARBARA L. WALTER, Vice President

^a On leave of absence.

WHOLESALE PRODUCT OFFICE

JAMES H. OLTMAN, First Vice President and
Wholesale Product Director

CAROL W. BARRETT, Senior Vice President and
Wholesale Product Manager

DANIEL C. BOLWELL, Vice President

DARA HUNT, Vice President

OFFICERS—BUFFALO BRANCH

CARL W. TURNIPSEED, Senior Vice President and Branch Manager

Banking Services; Secretary of the Board

PETER D. LUCE, Assistant Vice President

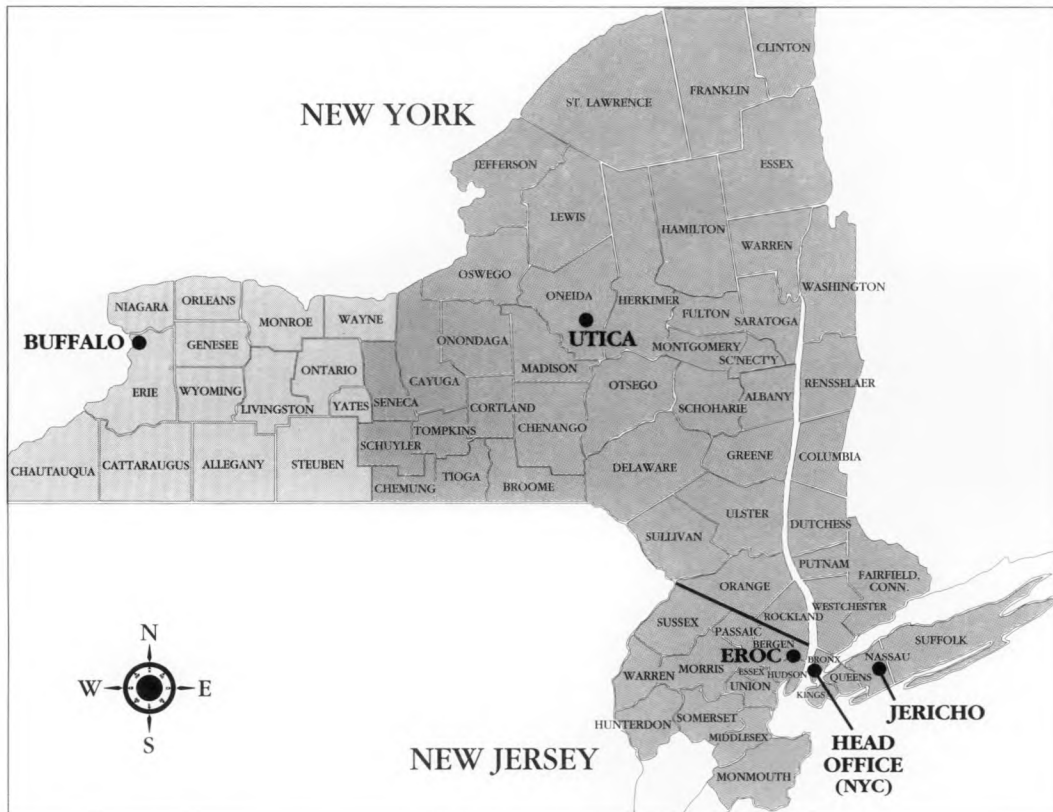
Savings Bond Operations



GARY S. WEINTRAUB, Cashier

Administrative Services; Facilities; Protection

ROBERT J. McDONNELL, Operations Officer

THE SECOND FEDERAL RESERVE DISTRICT



-  BUFFALO BRANCH TERRITORY
-  HEAD OFFICE TERRITORY