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The Quarterly Review is published by the Research and Statistics Function of the Federal Reserve Bank of New York. Remarks by ANTHONY M. SOLOMON, *President of the Bank, on the United States and the world economy, begin on page 1. Among the members of the function who contributed to this issue are* MARK A. WILLIS *(on the issues and options of reforming New York City's property tax, page 14);* STEPHEN V.O. CLARKE *(with a perspective on the United States external position since World War II, page 21);* LAURIE S. GOODMAN *(on the pricing of syndicated Eurocurrency credits, page 39).*

A report on monetary policy and open market operations in 1979 starts on page 50.

An interim report of Treasury and Federal Reserve foreign exchange operations for the period February through April 1980 begins on page 65.

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United States and the World Economy

This is my first opportunity since arriving at the New York Fed to give my views about the international situation. It is a special pleasure to do that for this knowledgeable audience. I recognize that many of you here this evening derive considerable professional benefit from having an unceasing stream of world problems to report on. Looking ahead, I can predict one thing with some certainty. There will be no shortages of raw materials for your industry.

We are confronted by the reality of intractable inflation, the certainty of massive payments deficits among oil-consuming countries, and the likelihood of economic contraction, or at best a prolonged slowing of economic growth. The key point to consider is that these problems are not simply cyclical in origin. They cannot be attacked adequately by traditional demand management policies developed over the short term. They are, in part, consequences of oil price and supply instabilities which are not going to go away and may grow still worse during the next five years. Since these problems are medium- or long-term in character, it will take not only imagination and skill to deal with them, but also determination and perseverance in a broad range of policy areas. Above all, we need the guts to propose, to debate, and to take unpopular actions whenever necessary—and certainly until a broad constituency for discipline and self-restraint is secure.

The economic outlook is pessimistic. But this does not mean the situation is hopeless. To the contrary, we are impelled to seek ways to bridge the gap between today's dilemmas and what might be a more hospitable future. The energy vise can be loosened by development of alternative energy sources and by decisive cutbacks in our energy consumption, even greater than we are now achieving. On both fronts, I expect us to remember the lessons we should have learned since the first oil shock and put them to good use.

I recognize there are those who differ, and who are not terribly worried about the outlook, or at least say they are not. They claim that the world came out of the first oil shock not too badly—that yes, there was a severe, synchronized recession, but we recovered from that. The banking system recycled surplus oil revenues reasonably well. The OPEC (Organization of Petroleum Exporting Countries) surplus declined fairly quickly because large amounts of imports were absorbed. After the initial price shock, the oil price, adjusted for general inflation—the real oil price—actually fell. All this could happen again, they say.

Some go even further. This time, they say, the initial conditions may be less troublesome. There are no big current account surpluses among industrial countries to compound the adjustment problem, as there were last time. The business cycle is less synchronized, and since we did not have a simultaneous boom (as in 1972-73) there is little risk of a simultaneous world recession. Finally, the recycling process itself could go more smoothly because many developing countries have built up sizable reserves and have been able to generate impressive export growth.

I would admit there is clearly something to each of these points. But, taken as a whole, the argument

Remarks of Anthony M. Solomon, President of the Federal Reserve Bank of New York before the Reuters annual dinner on Wednesday, May 14, 1980.

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doesn't wash. It neglects the fact that there is an overriding difference between the first oil shock and the situation we are in now. There have been fundamental changes in the perceptions and policies of OPEC and its members. Because of those changes, I cannot foresee any early decline in the OPEC surplus or any meaningful reduction of real oil prices. If anything, real oil prices could go up further.

Bear in mind these four key factors:

First, OPEC import demands are not likely to expand anywhere near as fast, or as much, as they did before. Several countries have learned the practical limits to their absorptive capacity. They are unwilling to repeat past mistakes of taking on too many complicated projects all at once. The social implications of rapid development have been a source of concern to many countries, especially where large numbers of immigrant workers are involved. In addition, some countries have not been able to run profitably the expensive plants and technology they installed in the first flush of new oil wealth. And other special circumstances, such as the Iranian upheaval, have had direct and indirect consequences on import demand that will not quickly disappear.

The economic outlook is pessimistic. But this does not mean the situation is hopeless. To the contrary, we are impelled to seek ways to bridge the gap between today's dilemmas and what might be a more hospitable future.

Second, OPEC's attitudes toward supplying oil have changed. The OPEC members have learned a great deal about how to create and perpetuate a tight supply and demand situation in the short term. A number of countries have made it known that they are prepared to hold back production if that helps force real oil prices higher. That threat is not an idle one, given recent levels of world demand.

Third, the more moderate OPEC members have come under criticism within their own countries for taking a relatively accommodative attitude, specifically toward oil pricing and production, and more broadly toward the United States and our interests. This atmosphere of criticism has tended to mute the voices in favor of moderation. And, as a result, the more strident elements within OPEC have strengthened their position. They will seek to use that preeminence to secure larger real revenues by keeping continual pressure on the oil market.

Finally, many OPEC members have been disappointed by the earnings they have made on financial assets. They claim those earnings were eroded by inflation and currency fluctuations, while had they kept the oil in the ground they would have done better. *Ex post*, that is a hard argument to contradict. But I can envisage a different outcome in the future. Once convincing efforts, even if long run, are under way to develop alternative energy sources and to achieve drastic cuts in oil consumption, the immediate arithmetic can be radically changed. At that point, we can expect a major change in attitudes in favor of selling oil rather than leaving it in the ground.

But we are far from that point now. The clear, unavoidable conclusion is that the OPEC surplus is going to remain massive. Therefore, the rest of us will face an increasingly difficult struggle to sustain tolerable levels of trade and economic activity while combating inflationary pressures stemming from higher oil prices. If we cavalierly treat the second oil shock as self-adjusting and self-limiting, we risk incalculable long-term damage. We must prepare policies that offer the best chance of minimizing the economic damage—almost sure to be mounting year by year through the entire period of oil vulnerability. We cannot count on OPEC behavior to bail us out again. However, it is defeatist to conclude that the problems are too difficult to confront and that all we can do is ease the pain. We have the capacity to put together a workable program of collective actions to deal with these common problems. In general terms, the necessary ingredients of such a program can be readily identified.

First, we must manage our domestic economy and our currency better. We must avoid the kind of stop-go policies that have tended to amplify the cyclical behavior of the economy. In particular, we must rid ourselves of an inflationary bias that comes from stops that are fairly short and from go periods that last too long.

A firm commitment to eliminate inflation, along with the biases that tend to sustain it, is essential. The United States was built on a foundation of mutual trust and consent. That foundation risks being eroded by prolonged inflation. It gnaws away at the financial assets that average citizens have painstakingly tried to build up for themselves and their families. In the process, inflation ridicules the saver and rewards the impatient. A country can go only so long pitting one group against another—which of course is the very essence of inflation—without tearing apart the fabric of social cohesion that underlies democracy.

Moreover, no country can, for very long, maintain its political influence around the world, maintain its military credibility, protect its vital interests abroad, or promote its ideals and principles if it must rely on inflation as an expedient to avoid resolving competing

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claims within its society. I wonder if we can seriously expect other countries to take us, our power, or our words seriously if we are incapable of self-restraint, discipline, and constructive compromise at home.

These considerations also feed back on the dollar in the exchange markets. I am convinced that the impact on a currency of differential inflation rates among countries is much more elemental and profound than many believe. To be sure, the economic dynamics are important. Excessive inflation starts by undermining industrial competitiveness, then leads to deterioration in trade, and inevitably to exchange rate weakness, unless interest rates are high enough to pull in capital.

There have been fundamental changes in the perceptions and policies of OPEC and its members. Because of those changes, I cannot foresee any early decline in the OPEC surplus or any meaningful reduction of real oil prices. If anything, real oil prices could go up further.

But I would appeal to a broader perspective. The basic factor influencing the decision to buy or sell a currency is whether the country issuing it can be counted on to fulfill its end of the bargain. Chronic inflation undermines the source of confidence which, once lost or diluted, cannot easily be restored.

And so today we can no longer ignore international developments as we decide on the proper course of domestic monetary policy. We know from experience that a falling dollar compounds our inflation problems, worsens inflationary expectations, and further weakens our ability to get support from those OPEC members which are moderates toward oil price increases.

But now, a new factor has come into play. A recession in the United States entails a slowing in credit demands. Thus, there are fewer market pressures on interest rates. This already had led to sharp declines in short-term rates, and potentially could lead to further declines. The market knows that since last October 6 the Federal Reserve, in achieving its monetary targets, has put greater emphasis on tracking the reserve aggregates and less emphasis on maintaining interest rates at any particular level. The market knows this intellectually, but it seems to me there is still an instinctive tendency on the part of many traders to read Federal Reserve policy from the course of short-term interest rates, rather than from what is happening to money supply and credit creation.

This may be an unfortunate anachronism. Yet, it is imbedded in market behavior, and we cannot dismiss it as we seek to achieve reasonable stability for the dollar. Once appropriate monetary and credit targets are set, we cannot repel all market pressures toward lower interest rates. But we should ensure that rate declines are orderly and consistent with holding to our monetary targets over a longer time. Moreover, no one should forget that we have adequate means for preventing exchange market instability as this process develops. We have been, and are, prepared to use those means whenever appropriate.

Experience shows that exchange markets eventually look beyond movements in short-term interest rates to the economic fundamentals—our balance-of-payments position and our inflation performance. Confidence will be achieved on a permanent basis only if we are able to convince the markets that we are determined to maintain monetary discipline judiciously over time. To do that, we must not move back and forth between unsustainable restriction and unsustainable ease. Stop-and-go policies must go.

Second, from the international perspective, we must work to maintain tolerable levels of world trade and economic activity during the period of oil vulnerability. That means we must work cooperatively with other major countries and, within the context of the International Monetary Fund, to make sure that the pattern of deficits confronting protracted OPEC surpluses is fair and appropriate. The burden should not be allowed to fall excessively on any one country or group of countries. And no country should pursue policies designed to unload its deficits onto others. A failure to harmonize our policies could gravely threaten the prospects for maintaining trade and growth.

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Right now, economic activity is still expanding in most countries abroad, although more slowly than last year. No signs of general recession have appeared. However, inflation rates have been rising virtually everywhere. Thus, a basic emphasis on monetary restraint continues to be reasonable. In my view, it is the increase in inflation rates and the monetary response to that increase which accounts for most of the recent interest rate rise abroad. Only to a very minor degree is there an element of validity in the

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concern about so-called "interest rate wars" for competitive exchange rate appreciation.

But I believe it is of the upmost importance for the authorities to avoid any temptation, or even the appearance, of a competitive interest rate escalation. The exchange markets are nervous and volatile. It cannot be a contribution to stability to leave the impression that monetary policy is directed toward narrow parochial objectives and is indifferent to the need for cooperation and harmony. Indeed, since interest rates in the United States have declined markedly, it may now be timely for other countries to consider whether their current rate structure is still appropriate.

In its surveillance of the adjustment process, the IMF can play a special role to help prevent backsliding into "beggar-thy-neighbor" policies. We must all do our part to reject inward-looking policies on interest rates and exchange rates, as well as to resist protectionist forces. Otherwise, we risk permanent harm to the liberal trading environment that still forms the basis for expanding world trade and adequate economic growth. If that basis is undermined, any hopes we have for reducing world inflation will evaporate. It is strong, healthy competition in the marketplace that provides the surest defense mechanism against the inflationary biases in each of our domestic economies.

Third, we must assure that there is adequate financing for the deficits caused by the oil shock. Both official and private sources of financing must be kept open. There is no reason why commercial banks should not continue to lend in sizable amounts, as long as they perceive that countries are managing their economies prudently and keeping deficits from getting unsustainably large. The best way of assuring that continued flow is for the IMF to be in a position to meet its responsibilities, providing balance-of-payments financing conditioned on countries pursuing agreed stabilization programs. To that end, the IMF must have sufficient resources to lend, and that depends on approval of proposed member quota increases. For us to do our part and to maintain our influence in the organization, the United States Congress should approve the legislation now pending to increase our quota.

The quota increase is a necessary first step. Other steps may be needed later to strengthen the IMF's role in the recycling process, either through new facilities or new operating procedures. For example, the IMF could supplement its own resources by borrowing directly from OPEC members to lend additional funds to countries pursuing stabilization programs.

But well before other options are considered, one thing seems essential. As oil surpluses mount, the OPEC members must respond by placing substantial and increasing amounts of money directly with developing countries, particularly the ones without ready access to private markets. OPEC cannot stand back from the economic and financial consequences of its oil-pricing decisions by simply investing through financial intermediaries.

I see no reason why these investments could not be structured so as to further the interests of individual OPEC members in having a diversified portfolio. Various types of instruments could be developed which would provide features not ordinarily obtainable in private financial markets. Imagination and experimentation would be required. But that should be forthcoming once OPEC members have recognized that they bear responsibility for investing their surpluses more broadly, and that to do so is in their own interests.

Finally—and, from a long-term perspective, most importantly—we need to build on the useful first steps that have been taken to achieve a truly effective national energy policy. And our allies need to strengthen their own efforts as well. The only credible way of curing OPEC-caused deficits is to produce more energy domestically, and to conserve significantly more energy here and in all industrial countries.

Facing up to energy reality was an agonizingly slow process, but now the basic consensus in favor of price decontrol seems to be in place. We have already seen results. Over the past year, the painful, but necessary, increase in domestic crude oil prices has amounted to almost 80 percent. As prices of final products have risen, total United States petroleum consumption has gone down by more than 10 percent, with industrial consumption dropping more than 15 percent. And this adjustment occurred even as the economy was still growing. The recession should induce further conservation efforts.

Finally—and, from a long-term perspective, most importantly—we need to build on the useful first steps that have been taken to achieve a truly effective national energy policy.

But more must be done. I believe the United States should provide strong leadership in helping develop important new energy policies with our allies. The Venice Summit should provide an opportunity to make a start. We have to achieve substantial cutbacks in oil consumption. To do so will require controversial and painful measures. I have no illusions about the unpopularity of such steps, or the natural reluctance even to talk about them on the ground that they are politi-

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cally not feasible. But we cannot close off discussion. And we cannot be dogmatic about what may or may not be politically feasible once a solid case is made and strong leadership is applied.

Our objectives should be to take out of OPEC's hands the ability to force real oil prices higher, to unblock OPEC restraints on oil production, and to retain in our country the money that would otherwise be paid as a tax to OPEC members in the form of higher oil prices. The approach we should be considering can justifiably be called "domestic recycling". Instead of paying increasing taxes to OPEC, which merely proves to them that we are addicted to their oil and will therefore pay even more heavily for it, we can pay taxes to ourselves and recycle the proceeds domestically—to support energy development, to encourage cost cutting in industry, and to remove deeply rooted inflationary biases from the economy.

Our objectives should be to take out of OPEC's hands the ability to force real oil prices higher, to unblock OPEC restraints on oil production, and to retain in our country the money that would otherwise be paid as a tax to OPEC members in the form of higher oil prices.

Domestic recycling can be done in different ways. The most obvious is through substantial excise taxes on gasoline. To set in motion rapid adjustment, we would have to announce a schedule of yearly increases in those taxes—so much per gallon this year, so much more the year after and the year after that. Simultaneously, we would have to structure the domestic recycling effort to neutralize most of the adverse impact on the overall inflation rate, and to assure that the burden of adjustment does not fall too heavily on the weakest in our society. Clearly, the task would be formidable.

But this kind of approach can work quickly. Higher prices of oil products induce lower consumption; the recent experience proves that the elasticities are there. Moreover, the approach gives us the leverage to assure that complementary conservation measures are adopted at the same time by our allies. Oil demand could then begin to drop sharply, hopefully beyond the amounts that OPEC is prepared to counter with production cutbacks. There is a good chance that the increasingly heavy production declines that would be required to keep the oil market from softening would seriously test the determination of the cartel. That is a prerequisite for shaking OPEC out of its present attitude that oil prices will do nothing but rise in the future.

Equally important is to generate concrete progress toward developing alternative energy sources. That may well take much longer to achieve than reducing consumption. But we must speed the process, and that makes it all the more imperative to pursue domestic recycling so that resources are available for this national effort.

Clearly, taxes on domestic oil use would add to measured inflation in the short run and the adjustment process will be difficult. But by retaining these tax revenues at home rather than paying them out to foreign producers we can best ease the harmful effects of rising real oil prices. The domestic recycling of these funds can provide several direct benefits to our economy. To the extent they augment general Government revenue, these funds would permit tax cuts elsewhere and a less inflationary financing of existing Government programs. Some of the revenues could be directed to the weakest sectors of our economy and those most seriously affected by the higher oil price to ease the adjustment burden. Also, tax revenues recycled into alternative energy source development or energy conserving investment would both ease the adjustment burden by generating new employment and more quickly reduce our dependence on foreign oil. Finally, domestic recycling, to the extent that it reduces the resource drain to OPEC, improves our balance of payments and relieves pressure, both direct and indirect, on the dollar.

I recognize that the domestic recycling approach initially would be painful. But the potential rewards are worth the pain. It is far better to act now than to acquiesce to continuously higher oil prices for the indefinite future. And it is far better—for the United States and for the world economy—to recycle the wealth of our citizens at home rather than to transfer that wealth to OPEC.

Some people fall back on cynicism when they look at the outlook. Either things will take care of themselves, or they will be so bad that nothing much can be done except to prescribe painkillers. I reject this reasoning. Loosening the OPEC vise will take time but can be done if we can adopt the decisive energy measures that are needed. Holding the world economy together in the meantime can also be done, and done fairly well, if we exercise discretion in our domestic policies and cooperation in an international framework. I will continue to work toward these goals, and I hope you will too.

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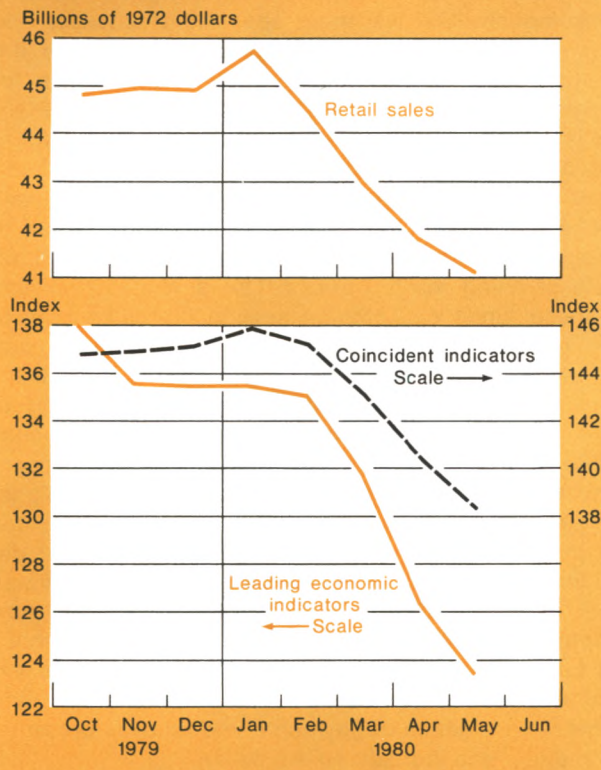
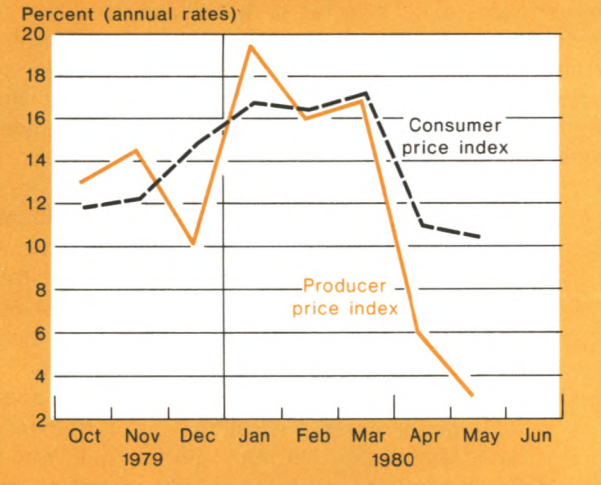
Chart 1

Economic indicators during the opening months of 1980 signaled the beginning of a recession . . .



. . . and inflation began to ease in the second quarter.



Sources: United States Department of Commerce, Bureau of the Census; United States Department of Labor, Bureau of Labor Statistics; and Bureau of Economic Analysis, Business Conditions Digest.

The business situation
Current developments

In the opening months of 1980, the long-awaited recession began. The sharp decline already evident in the housing and automotive sectors spread rapidly throughout the economy. As demand dropped, so did production and employment. By late spring, capacity utilization fell to the lowest level in four years, and the unemployment rate, particularly among blue collar workers, rose sharply. All in all, the economic data released during the spring and early summer suggest that the decline in economic activity in the second quarter was one of the largest on record. Indeed, the severity of the downturn prompted the National Bureau of Economic Research to set January 1980 as marking the onset of the recession. As business activity declined, signs of a significant easing in the inflation rate began to appear in April, with both producer and consumer price increases slowing from the very rapid rates posted in the first quarter (Chart 1).

Nowhere were the signs of a recession more evident than in the housing and automotive sectors. Although these sectors have been declining for some time, in the late spring housing starts and domestic automobile sales fell to levels comparable to the lowest recorded in the 1973-75 recession (Chart 2). Reflecting the production cutbacks, unemployment in the construction industry surged to 16.5 percent by June and in the automobile industry to 25 percent. High financing costs and, in some cases, reduced credit availability had contributed to the declines in these sectors.

Consumers have cut back on other purchases as well. From January to May, retail sales excluding automobiles declined 5.7 percent in constant dollars. This is in sharp contrast to 1979 when consumers con-

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tinued to increase spending, despite falling incomes, by borrowing more and reducing their rate of saving. Now consumer behavior has shifted dramatically. The savings rate increased to 4.5 percent in April from 3.7 percent in the first quarter, and during April and May consumers reduced outstanding instalment debt by a record $5.4 billion.

The weakening in consumer demand along with the increasing certainty of a recession led manufacturers to curtail output sharply. Industrial production declined steadily from January through June. Most major market groupings posted sizable declines. Even business equipment production, which had been strong through March, showed some signs of weakening, reflecting a cutback in new orders for capital equipment.

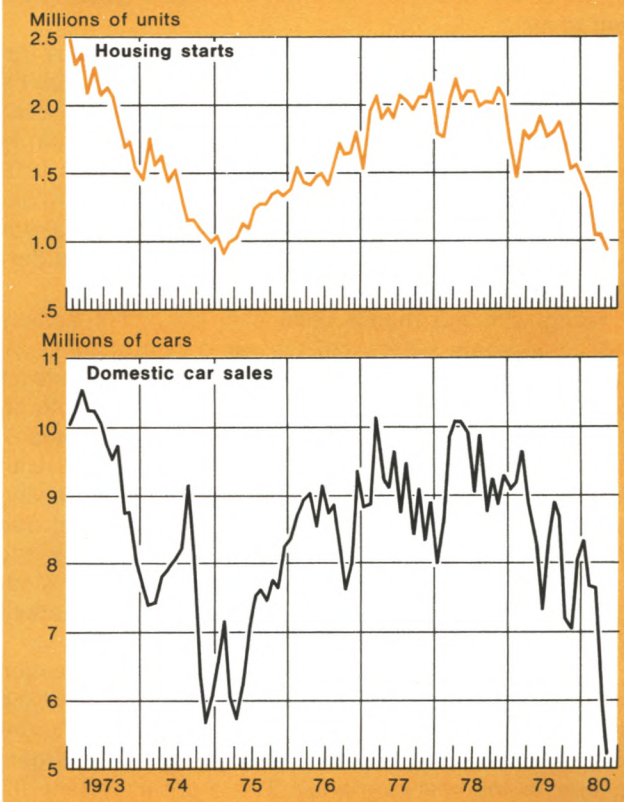
As the economy entered the recession early in the year, inventories appeared in rather good balance with sales. In April, however, inventories rose sharply while sales plummeted, and the constant dollar inventory-sales ratio for manufacturing and trade soared to a level approaching the maximum attained in the 1973-75 recession. This sudden buildup in inventories increases the likelihood that production will be cut further until inventories are worked back in line with sales.

The extent of unintended accumulation of stocks, however, is likely to be much less severe than in the 1973-75 downturn. Despite the large increase in the inventory-sales ratio in April, stocks have not swelled nearly so much over the past year as occurred in the comparable period of the 1973-75 recession. During that time, firms continued to expand inventories because of shortages of materials and expectations of rapidly rising prices. Also, many businesses expected the downturn to be short-lived. In contrast, during 1979 and early 1980, businesses were very sensitive to inventory levels because of high financing costs and expectations of a decline in demand. As a result, firms have been adjusting stocks much sooner than in the previous recession. Reflecting this, the overall decline in output is likely to be concentrated in the early part of the downturn.

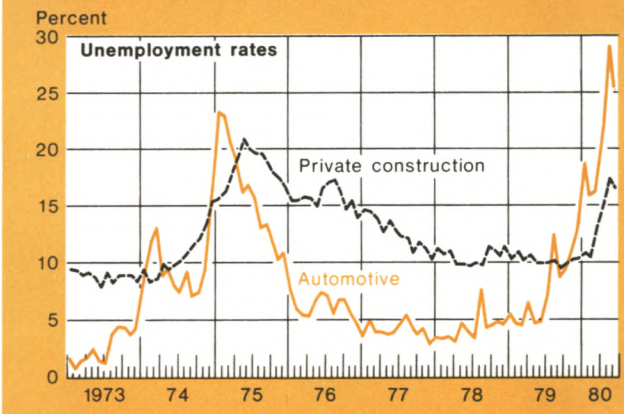
With firms cutting production to avoid accumulating large stocks of inventories, unemployment has risen sharply. The unemployment rate increased to 7.7 percent in June from 6 percent in February. For blue collar workers, whose joblessness is more cyclically sensitive, the unemployment rate rose almost 4 percentage points from February to June to a level of 11.5 percent, the highest rate posted since early in the 1975 recovery. Total employment declined precipitously by almost one and a half million from February to June, and the average workweek edged down as well—all pointing

Chart 2

The sharp decline in business activity was led by the housing and automotive sectors . . .



. . . and unemployment in these industries surged.



Sources: United States Department of Commerce, Bureau of the Census; United States Department of Labor, Bureau of Labor Statistics; and Board of Governors of the Federal Reserve System.

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to a large decrease in income during the second quarter. This sharp drop in employment early in the downturn is in marked contrast to the 1973-75 recession when employment was maintained during the early stages of the downturn as firms continued building inventories.

The weakness in the labor market was mirrored by the drop in capacity utilization during the opening months of 1980. Capacity utilization, as measured by the Federal Reserve Board's manufacturing index, fell sharply during the second quarter. Since peaking in March 1979 at a level just below the maximum attained in 1973, capacity utilization has declined about half of the peak-to-trough drop of 19 percentage points that occurred during the 1973-75 recession.

Along with the recent decline in economic activity has come some relief from the rapid rate of inflation. Producer prices slowed to an average annual rate of 6.2 percent in April, May, and June, compared with an 18 percent rate of increase in the first three months of 1980. The easing in producer prices, coupled with declining mortgage rates, should result in a slowing of inflation at the consumer level as well over the next several months. Already in April and May the rise in consumer prices showed some signs of moderating, but this was largely the result of a marked slowing of energy prices.

The 1980 recession began with a sharp contraction in economic activity, raising the question of how the overall downturn will compare with the 1973-75 decline. In that recession, output dropped by the largest amount in the postwar period. There are important differences, however, that suggest the current recession will be less pronounced. The most important difference is the rapid decline in interest rates since late April. As a result, deposits at thrift institutions—the primary source of financing for the housing market—have strengthened somewhat following only very weak growth earlier this year. At the same time, the average cost of deposits for these institutions has dropped sharply from the extremely high levels during the first quarter. Reflecting the recent easing in the cost of funds to thrift institutions as maturing six-month certificates are rolled over at far lower rates, mortgage rates began to decline laying the groundwork for a recovery in housing. With inventories of unsold homes at relatively low levels, any strength in demand should translate fairly quickly into new production. A turnaround in this sector along with the elimination of the March 14 credit control program could lead to some strengthening in the demand for other consumer durables as well. Also, consumption could be bolstered somewhat during the summer months by the large increase in social security benefits resulting from a cost-of-living adjustment for the rapid rise in the consumer price index over the past year.

Lower interest rates will contribute to a turnaround in the business sector as well. Because financing demands have not been increased significantly as a result of a large buildup of inventories, short-term credit is readily available either at banks or in the commercial paper market. Moreover, capital spending may not weaken all that much. Most businesses had allowed for a recession in their long-range plans. With financing available in large amounts in the bond market again, many firms are likely to proceed with those plans—although at a reduced pace in some cases—despite the current downturn in business activity.

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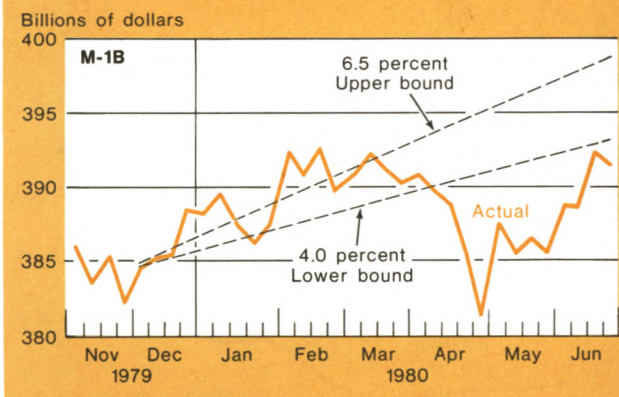
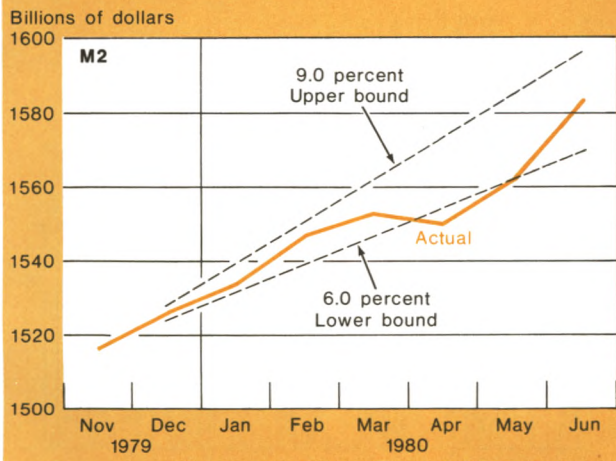
Chart 1

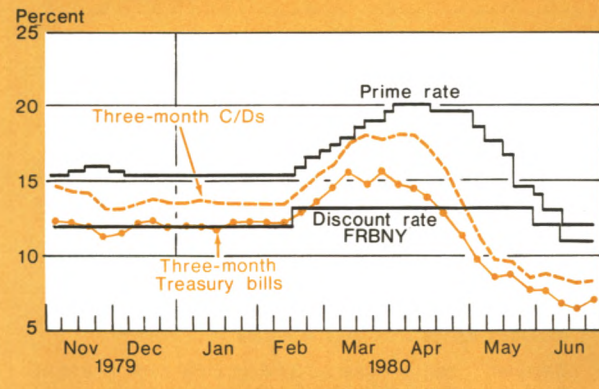
With M-1B below the FOMC's objectives . . .



. . . and with M-2 close to the lower bound during the spring . . .



. . . short-term interest rates plummeted from their peaks.



Source: Federal Reserve Bank of New York and the Board of Governors of the Federal Reserve System.

The financial markets Current developments

Financial market developments during the spring and early summer were dominated by the unexpectedly severe downturn in business activity. After surging to all-time highs earlier in the year, money market interest rates plummeted in the second quarter as the demand for money and short-term credit contracted along with economic activity. Long-term rates also plunged, as the bond markets rebounded vigorously from the chaotic conditions of March. Borrowers took advantage of the lower long-term yields in May and June by issuing massive volumes of new bonds. Around mid-June, however, rates in both the money and the bond markets showed signs of backing up somewhat.

With the demand for bank credit softening, the credit restraint program instituted on March 14 was gradually phased out. In early May, the Federal Reserve System eliminated the 3 percent surcharge on certain discount window borrowings by large banks. Later in the month, the Federal Reserve Board partially dismantled the credit controls—principally by halving the special deposit requirements and easing the reporting rules for various large financial and nonfinancial institutions. Then in early July, the Federal Reserve Board announced plans to complete the phase-out of the special credit restraint program by the end of that month and to eliminate the 2 percent supplementary reserve requirement imposed in November 1978 on large time deposits of member banks. Meanwhile, in two separate steps, the Federal Reserve lowered the discount rate from 13 percent in late May to 11 percent in mid-June.

As the weakening economy undercut the demand for money, the Federal Reserve continued its efforts to supply enough reserves to achieve the 1980 objectives of the Federal Open Market Committee (FOMC) for the growth of the money stock, and short-term inter-

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est rates tumbled from the all-time highs reached earlier in the year (Chart 1). After reaching 16 percent at the end of March, for example, the rate on three-month Treasury bills fell almost continuously to less than 7 percent by early June—far below the 10.4 percent rate recorded the week before the Federal Reserve's October 6 policy initiatives. Around the middle of the month, however, the Treasury bill rate started to rise, climbing more than 1¼ percentage points over the next two weeks. Other money market rates paralleled the movements in the Treasury bill rate.

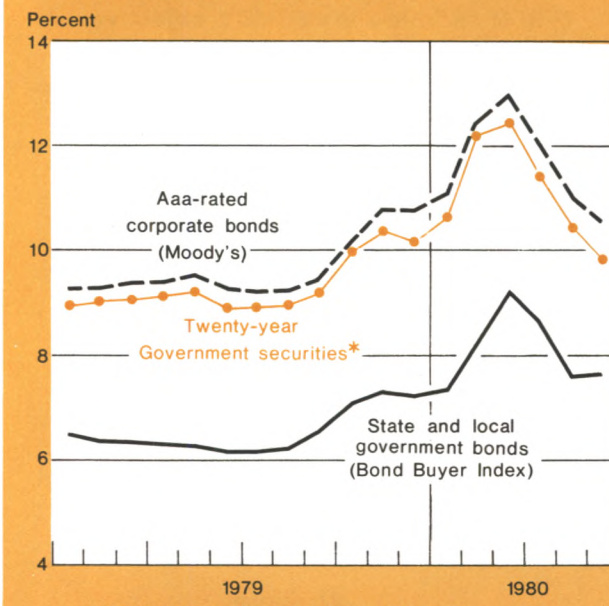
In response to the lower cost of funds, commercial banks have cut prime lending rates, which had peaked at 20 percent in the first half of April. By early July, the prime lending rate had been reduced to 11½ percent, but it was about 3 percentage points above the rates on commercial paper or certificates of deposit (CDs)—a much larger spread than usual. Apparently, banks are trying to protect their profit margins. The rates on existing as well as on new bank loans are generally linked to the prime lending rate. Thus, in a recession when loan demand is weak, a decrease in the prime lending rate will not generate enough new loan demand to compensate for the loss in earnings on the portfolio of existing loans. Moreover, insofar as banks' liabilities consist of money market certificates or CDs which were issued several months earlier, the average cost of funds for commercial banks tends to lag behind prevailing market rates.

Prompted by the wide spread between the prime rate and the commercial paper rate, many corporations borrowed short-term funds in the commercial paper market rather than from banks. From April 2 to June 25, the amount of commercial paper issued by nonfinancial companies rose $5.3 billion whereas bank loans (including loans sold to affiliates but excluding bankers' acceptances) declined $4.8 billion.

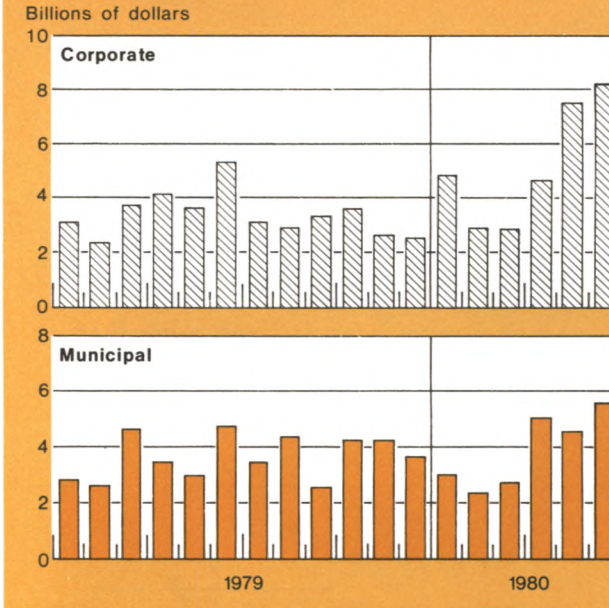
While the demand for short-term credit languished, activity in the longer term debt markets has been robust. Just last March, the bond market had almost totally collapsed as investors, alarmed by the sudden flare-up in inflation and afraid that it would worsen, abandoned the market. Since then, however, the capital markets have rebounded. Indeed, assuaged by the mounting evidence of recession and a slowdown in inflation, inflationary expectations eased and investors showed renewed interest in longer term issues. In response to the vigorous bidding, long-term yields backed off sharply from the record heights of March. Rates on five-year and twenty-year Government issues fell as much as 4 and 2¼ percentage points, respectively, from the end of March to early May. With short-term rates dropping even more sharply, the yield curve resumed an upward slope for the

Chart 2

Long-term yields declined . . .



. . . and the volume of new bond issues soared.



Data on new bond issues in April, May, and June 1980 are preliminary.

*This yield is adjusted to twenty-year maturities and excludes bonds with special estate tax privileges.

Sources: Federal Reserve Bank of New York, Board of Governors of the Federal Reserve System, Moody's Investors Service, Inc., and The Bond Buyer.

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first time since the end of 1978. Similar rallies occurred in the markets for corporate bonds and tax-exempt securities.

As long-term yields have fallen, the volume of new bond issues has ballooned (Chart 2). New corporate bond offerings surged to $7.5 billion in May and $8.2 billion in June, many times larger than those issued during February and March when the debt markets were in extreme disarray. Companies are evidently using the proceeds from their bond issues in large part to repay their short-term borrowings. Around mid-June, however, the market began to show signs of strain under the continuingly heavy flow of new issues. In the tax-exempt market, the volumes of new bond issues for May and June were also much greater than those of February and March. Many of these issues had been postponed earlier in the year when interest rates had risen to such high levels that they actually exceeded the statutory ceilings at which some state and local governments were permitted to borrow.

The mortgage market also showed signs of renewed life with the reflow of deposits into thrift institutions. In March and early April, faced with sharply rising interest rates, the thrift institutions were offering mortgage commitments at rates which averaged about 16½ percent—up about 3½ percentage points since the start of the year. Few potential home buyers actually took commitments at those rates, and the outstanding commitments of the thrift institutions declined by almost 30 percent over the first four months of the year. By May, however, the situation had begun to improve. Investors reacted to the steep decline in short-term rates by shifting funds away from Treasury bills and six-month money market certificates and into passbook accounts and thirty-month special floating-ceiling accounts (the so-called small saver certificates) offered by the thrift institutions. Savings inflows strengthened while withdrawals eased, and mortgage rates plunged. By early June, the prevailing rate on new commitments stood at 13½ percent.

Overshadowed to some extent by the stunning swings in interest rates was the enactment on March 31 of the Depository Institutions Deregulation and Monetary Control Act of 1980. This new law is a legal milestone which will greatly overhaul the structure of the United States financial system (box). Under the new legal framework, financial institutions will look and function much differently than they do today. For instance, the Federal Reserve System is accorded a more central role within the financial structure inasmuch as certain provisions of the new law extend reserve requirements to cover all depository institutions. The new reserve requirements are to be gradually phased-in over a period of eight years for financial institutions that are not members of the Federal Reserve System and over four years for member banks. At the same time, nonmember depository institutions were also given access to the Federal Reserve's discount window.

Other provisions of the new law will improve the competitive balance among financial institutions. The Regulation Q ceilings on interest rates paid by financial institutions are to be entirely removed by March 31, 1986. In the interim, the newly created Depository Institutions Deregulation Committee (DIDC) will prescribe rules for the payment of interest. Still other provisions of the new omnibus law eliminate or liberalize the restrictions on the lending activities of Federally chartered savings and loan associations and mutual savings banks.

In its brief tenure, the DIDC has promulgated several new rulings on interest rates. One of its rulings revised the schedule of ceiling rates on six-month money market certificates (MMCs). Under the new schedule effective June 5, the ceiling rates that commercial banks and thrift institutions may pay on their MMCs are equal when Treasury bill rates are either above 8¾ percent or below 7¼ percent. In addition, MMCs now carry a slight premium over the Treasury bill rate, thus making MMCs more attractive to certain kinds of investors. Another of the DIDC's rulings raised the interest rates that commercial banks and thrift institutions may pay on their small saver certificates in relation to the prevailing rate on Treasury two and one-half year securities.

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Highlights of the Depository Institutions Deregulation and Monetary Control Act of 1980

Monetary Control Act

To facilitate control of the monetary aggregates, the Board of Governors can require all depository institutions (commercial banks, savings banks, savings and loan associations, and credit unions) to submit directly or indirectly reports of assets and liabilities.

Each depository institution must maintain reserves against transaction accounts—demand, negotiable order of withdrawal (NOW), share draft, deposits subject to automatic and telephone transfer—in a ratio of 3 percent for amounts of $25 million or less and, initially, 12 percent for amounts in excess of $25 million. The statutory range for amounts in excess of $25 million is 8 percent to 14 percent. Reserves on nonpersonal time deposits must be held initially at a ratio of 3 percent. The legal range is 0 percent to 9 percent.

The $25 million level of transaction accounts will be adjusted annually by the Board depending on the growth of the total level of transaction accounts nationwide.

If five Board members find that extraordinary circumstances exist, the Board may, after consultation with Congressional banking committees, alter reserve ratios from the statutory ranges for renewable 180-day periods.

Five Board members also may impose a supplemental reserve requirement of up to 4 percent on an institution's transaction accounts.

The supplemental reserves may be held as vault cash or placed in an "earnings participation account", which will earn interest at a rate not exceeding what the System open market account portfolio earned during the previous calendar quarter. No interest will be earned on supplemental reserves in the form of vault cash.

The Board may impose reserves on any depository institution's borrowings from its foreign offices, loans to United States residents by its foreign offices, and assets purchased by its foreign offices from its domestic offices.

Reserve requirements for nonmember depository institutions will be phased-in evenly over seven years. Starting September 1, 1987, all nonmember depository institutions, except those in Alaska and Hawaii, will be subject to full reserve requirements. But reserves will be required immediately for any new types of deposits or accounts authorized by Federal law after April 1, 1980. The necessary adjustments in reserve requirements for member banks will be phased-in over a three-year period.

Reserves must be in the form of Reserve Bank balances, but also, with Board consent, may be vault cash. Nonmembers may keep balances with correspondents, a Federal Home Loan Bank, or the National Credit Union Administration Central Liquidity Facility, if those institutions maintain balances at Reserve Banks.

Depository institutions with transaction accounts or nonpersonal time deposits are entitled to the same discount window privileges as member banks.

The Board must publish for comment a set of pricing principles and a proposed schedule of fees for Reserve Bank services by September 1, 1980. By September 1, 1981, the Board must begin to put a schedule of fees for services into effect.

Depository Institutions Deregulation Act

The act provides for the phase-out of limitations on interest and dividend rates paid by depository institutions by extending the authority to impose such limitations for six years, subject to specific standards designed to ensure their replacement by market rates. During the six-year period, the ¼ percent interest rate differential payable on certain accounts by commercial banks and thrift institutions continues.

A new Depository Institutions Deregulation Committee (DIDC) will asume authority to prescribe rules for payment of interest.

Voting members of the DIDC are the secretary of the Treasury, the chairman of the Board of Governors, the chairman of the Board of the Federal Deposit Insurance Corporation (FDIC), the chairman of the Federal Home Loan Bank Board, and the chairman of the National

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Credit Union Administration (NCUA) Board. The Comptroller of the Currency is a nonvoting member.

The DIDC must exercise its authority to provide for the phase-out and ultimate elimination of interest and dividend rate ceilings as rapidly as permitted by economic conditions.

The DIDC must increase all interest and dividend rate ceilings to market rates as soon as feasible during the six-year period following March 31, 1980.

Within eighteen months of March 31, 1980, the DIDC must vote on at least a ¼ percent increase in the passbook account limit. It must vote on a ½ percent increase in the limit on all accounts not later than the end of the third, fourth, fifth, and sixth years after March 31, 1980.

Consumer Checking Account Equity Act

Member banks and FDIC-insured nonmember banks may continue to provide automatic transfers from savings to checking accounts.

NOW accounts will be permitted nationwide December 31, 1980 at all depository institutions for individuals and certain nonprofit organizations.

Federally insured credit unions are authorized to offer share draft accounts.

Federal deposit insurance at commercial banks, savings banks, savings and loan associations, and credit unions is increased to $100,000 per account.

Federal credit unions can make residential real estate loans on residential cooperatives.

A Federal credit union can charge up to 15 percent annually on loans. The NCUA Board may establish a higher loan interest ceiling for periods not to exceed eighteen months.

Powers of Thrift Institutions

Federal savings and loan associations may invest in shares or certificates of open-end investment companies registered with the Securities and Exchange Commission, if the portfolio of the investment company is restricted to certain investments that savings and loan associations may invest in directly.

Up to 20 percent of the assets of a Federal savings and loan association may consist of consumer loans, commercial paper, and corporate debt securities.

Federal savings and loan associations may make real estate loans without regard to the geographic area, as well as acquisition, development, and construction loans.

Federal savings and loan associations may issue credit cards.

Federal savings and loan associations may exercise trust and fiduciary powers.

A Federal mutual savings bank may have up to 5 percent of its assets as commercial, corporate, and business loans, if the loans are made only within the state where the bank is located or within seventy-five miles of the bank's home office.

A Federal mutual savings bank may accept demand deposits in connection with a commercial, corporate, or business loan relationship.

State Usury Laws

Effective April 1, 1980, state residential first-mortgage real property, co-op, and mobile home usury ceilings were rendered inapplicable, unless prior to April 1, 1983 a state adopts a new usury ceiling or certifies that its voters have voted in favor of or to retain the state constitutional provision imposing a usury ceiling.

A state may adopt a law placing limitations on discount points or other charges on residential real estate, co-ops, and mobile homes.

Between now and April 1, 1983, unless state law provides otherwise, a lender may charge an interest rate of not more than 5 percent in excess of the basic Federal Reserve discount rate (including any surcharge) on business and agricultural loans in amounts of $25,000 or more, in states where the usury loan rate is lower than that rate.

Federally insured state-chartered commercial and mutual savings banks, branches of foreign banks, savings and loan associations, credit unions, and small business investment companies may charge interest on loans at a rate equal to 1 percentage point above the basic Federal Reserve discount rate. This excludes any surcharge imposed by a Reserve Bank.

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Reforming New York City's Property Tax: Issues and Options

In 1975 the New York State Court of Appeals upheld the state law requiring property to be assessed at full market value for tax purposes.[1] Prior to the ruling, few localities had been enforcing this standard. In fact, in many communities residential properties were assessed at a lower fraction of market value than were nonresidential. The switch to "full value" assessment since 1975 has been slow. To date, only a small part of the state's real estate has been brought into compliance. In addition to the high cost of revising the property tax rolls, communities are reluctant to make a major tax change when it is possible the state legislature will amend the law. Since the property tax accounts for over two out of every three dollars of locally raised revenues in the state, the potential tax reallocations are of major importance to taxpayers. The ramifications of the court's decision are readily illustrated by examining New York City which annually raises more than $3 billion in revenues through its property tax.[2] Such an examination also provides a basis for evaluating the relative advantages of the various alternative ways to reform the property tax.

Complying with the law

State law calls for all property to be assessed at full market value and to be taxed at the same statutory rate.[3] Because tax liability is determined according to the property's assessed value, such a uniform tax system means that every property is subject to the same *effective* tax rate, *i.e.,* the same taxes per dollar of market value.

Current property tax practices in New York City contrast sharply with these requirements of state law.[4] Properties in the city are assessed at differing percentages of market value. These assessment variations, in turn, produce wide differences in effective tax rates, particularly between residential and nonresidential properties. For example, the property taxes paid by owners of single-family houses in the city are only about half of what they would be if the property tax

[1] *Hellerstein v. Assessor of Islip,* 37 N.Y. 2d 1, 332 N.E. 2d 279, 371 N.Y.S. 2d 388 (1975).

[2] This examination of New York City's property tax was based on property sales from July 1, 1977 to June 30, 1978. After making adjustments to the data recorded by the city to allow for only transactions that appeared indicative of "true" market prices, there were close to 26,000 sales. The procedures used, as well as the shortcomings of the resulting data, are discussed in technical appendixes to the report filed by this author with the city's Business Tax Task Force and the Department of Finance. Although there seems little reason to doubt the overall findings of the study regarding dispersion in effective tax rates, data limitations suggest that caution should be exercised in relying on any particular number as a precise estimate.

[3] N.Y. Real Property Tax Law, § 306.

[4] As a result of a recent court ruling, there is now a question of whether the provision of New York State's Real Property Tax Law requiring "full value" assessments governs in New York City. The court found the appropriate standard to be the one embodied in the city's Administrative Code. *Colt Industries Inc. v. Finance Administrator and Tax Commission of the City of New York,* 183 N.Y.L.J. 108 (Sup. Ct., New York Co., June 4, 1980), pages 10-11. If this decision stands, then the city will not need any further legislation to implement a classified system as discussed in the text.

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were levied on the basis of market values (Chart 1). At the other extreme, owners of office buildings tend to pay a relatively large share of taxes—over 60 percent more than they would if the tax burden were distributed according to actual property values. These and other disparities in effective tax rates mean that a switch to a uniform tax system would result in a major reallocation of the tax load among the different property groups. The size of these tax shifts underscores the potential for economic disruptions from the court's mandating of full market value assessment.

Not only do effective tax rates in New York City differ by property type, but they also differ by borough. For example, single-family houses in Manhattan are assessed on average at a much higher percentage of market value than houses in other boroughs. In fact, Manhattan appears to be the most heavily taxed borough overall (Chart 2). Consequently, a switch to a uniform tax system would reduce the share of taxes paid by owners of Manhattan properties by some 30 percent. At the opposite end of the scale, Staten Island property owners would face a two-thirds increase since they now pay only a fraction of their proportional share.

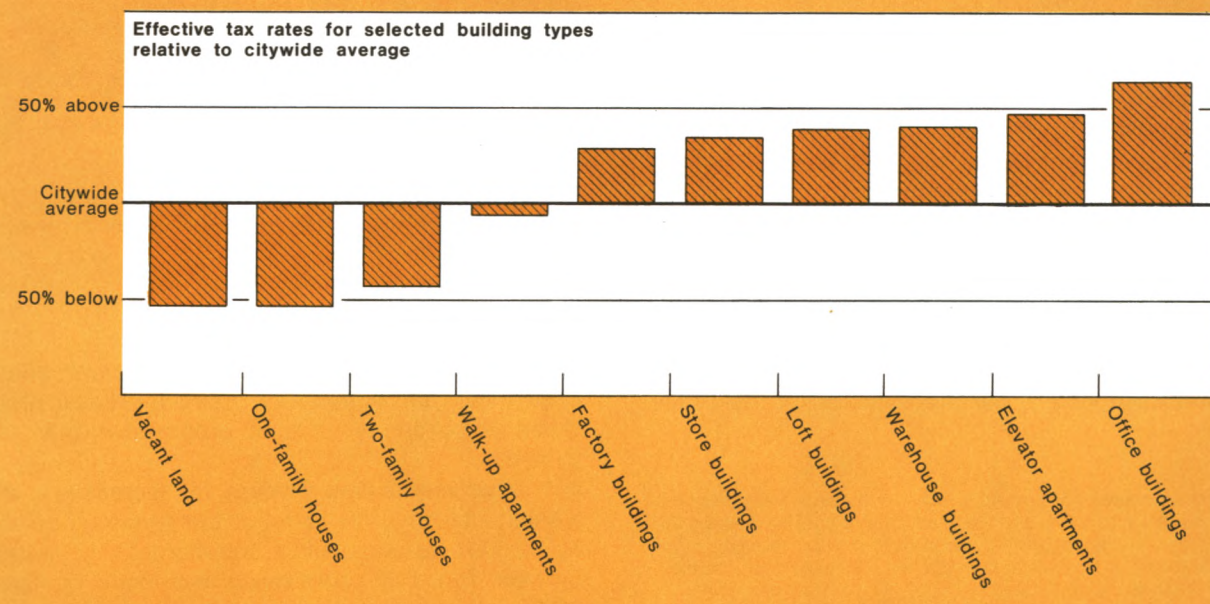
Part of the sharp divergence in the effective tax rates paid in the two boroughs is due simply to differing property mixes. Manhattan contains a large proportion of office buildings which are relatively heavily taxed, while Staten Island consists largely of houses which are relatively lightly taxed. However, after taking account of these differences, there is still a wide gap among the boroughs (Chart 2). One striking feature of adjusting for the differing properties in each borough is the change in the relative position of the Bronx. Rather than appearing to be taxed at about the citywide average, this borough turns out to be taxed at an effective tax rate almost as high as Manhattan's.

A switch to a uniform tax system would do more than change real estate taxes; it would likely affect property values. Increases in taxes tend to lower the demand for a property, thus depressing its market price. This in turn leads to a downward readjustment in assessed value, which offsets part of the initial tax increase. The opposite happens for those properties experiencing a tax reduction. Thus, with a reallocation of taxes, the owner may receive a capital loss or gain which is then realized when the real estate is sold.[5]

[5] The tax shift estimates presented assume that a property's market value is unaffected by the level of taxes. Factoring in changes in market value has only a relatively small impact on the size of the tax shifts.

Chart 1

Effective Property Tax Rates Vary Widely Across Building Types



Source: Estimates derived by the author from data furnished by the New York City Department of Finance.

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Other alternatives

To avoid the enormous tax shifts associated with full market value assessment, the state legislature has a number of options to modify the present property tax law.[6] The simplest and most direct way to lessen the tax shifts among property groups is to establish a classified tax system. Under this scheme, properties are divided into selected tax groups. The assessment standard or tax rate can then be adjusted to the current effective tax rate so that the total taxes paid by each group of properties are unchanged. Thus, the share of total taxes borne by single-family houses in New York City could be kept from rising by treating these houses as a separate property class.

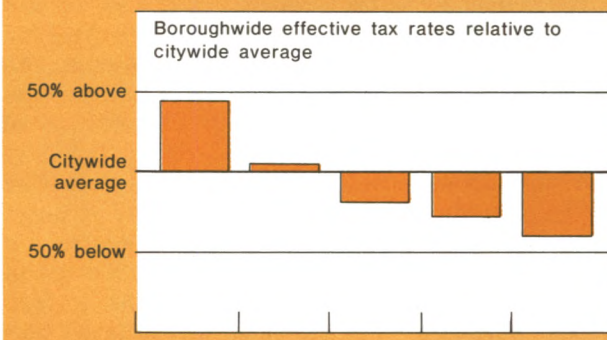
Another option available to hold down the taxes paid by homeowners is to combine a homestead exemption program with a uniform tax system. This would allow each homeowner to exempt the same fixed amount of the assessed value of the property from taxation. Taxes are then paid only on the assessed value of the property in excess of the exemption. Such a tax program, however, dramatically affects the distribution of taxes within this group. Unlike a classified tax system in which all properties within a class pay at the same effective rate, the more valuable properties pay taxes at effective rates much higher than the present average. The degree of progressivity with respect to assessed real estate values varies with the size of the exemption. In New York City the exemption would have to be very large—about half the average assessed values of houses—in order to prevent any increase in taxes on homeowners as a group. With such a large exemption, the resulting tax would be highly progressive.

A similar program, also introducing some element of progressivity to the tax system, is the circuit breaker. Named after its electrical counterpart, it limits homeowners' taxes by providing credits that can be applied against other taxes (usually against the state income tax).[7] The main difference between the circuit-breaker program and the homestead exemption is that the tax relief under the circuit breaker is contingent on property taxes exceeding some percentage of the homeowner's income. Thus, even for two properties of equal assessed values, the property tax for the owner with the lower income may be at a lower effective, after-credit rate. In this way, a circuit-breaker program causes the property tax to be progressive with respect to income.

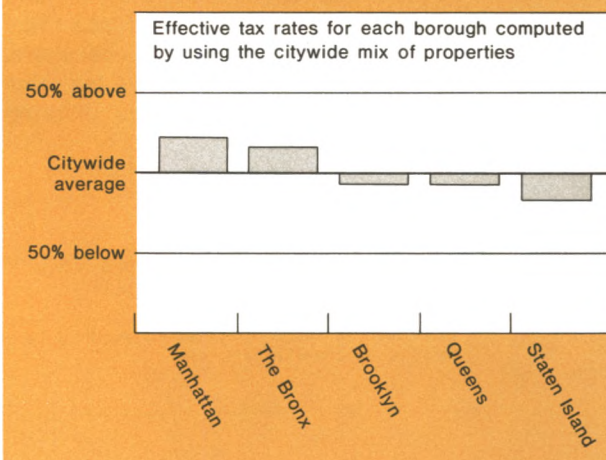
Another way to limit property tax increases is to find a substitute for some or all of the revenue now raised by this tax. However, since adoption of this alternative by New York City could result in a major realignment of its overall taxes, careful study is required. The effects of the new taxes may not be any less harmful than those resulting from going directly to a uniform

Chart 2

Effective property tax rates vary across boroughs . . .



. . . even after allowing for differences in property mix.



Source: Estimates derived by the author from data furnished by the New York City Department of Finance.

[6] Because little is known at present about how property and other taxes now levied in New York City affect economic decisions, the analysis in the text of the various options for reform does not rely on any theoretical model of an optimal tax system but focuses solely on the question of tax shifts.

[7] New York State now offers a limited circuit-breaker program. The maximum credit available is $200 for the elderly poor and $20 for other low-income households.

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tax system. As an example of the magnitude of the revenues involved, take the case of single-family homeowners. To prevent taxes from more than doubling on this group, the city would have to cut its reliance on the property tax by more than half, thus forcing it to replace some $1½ billion or one fifth of its locally raised funds.

A different approach to the problems posed by full market assessment is to minimize its adverse effects simply by easing the transition. Relief to the taxpayer can be provided in at least two ways: (1) the increase can be phased-in to give the taxpayer time to adjust or (2) part or all of tax payments can be deferred until the property changes hands.

However, the more substantial the tax shifts, the less attractive these programs become from the point of view of both the city and the taxpayers. With a phase-in, the larger the increase, the larger will be some or all of the steps. To hold down annual jumps, the city would have to lengthen the transition period. For example, to keep the annual tax increase for homeowners as a group to 10 percent or less, a uniform tax would have to be phased-in over eight years. The longer the period, however, the longer the initial disparities are perpetuated. Furthermore, since tax decreases are likely to be granted immediately and thus not phased-in, collections from the property tax will drop temporarily. The revenue loss will most likely be made up by raising other taxes.

For the deferral of tax payments to be effective, eligible taxpayers, usually limited to the elderly, must accept a tax lien against their property as an alternative to selling their property. Thus, the larger the tax increase, the greater the ultimate size of the encumbrance and hence the less the appeal of this alternative. After all, for most people a house is a major asset and an important source of security.

More than classification is needed

Preventing any reallocation of property taxes requires each property now taxed at a different effective rate to be in a separate class. However, there are practical limits on the number of classes that can be established.[8] Therefore, it may not be possible to eliminate all tax shifts through classification. In fact, this seems to be the case in New York City where even similar properties are taxed at different effective rates.

This dispersion in effective tax rates is readily illustrated by examining the range of assessment ratios—assessed value over market value—for single-family houses in Brooklyn. Most of these properties have assessment ratios around 20 percent, *i.e.*, the assessed value is approximately one fifth of the market value. However, the range is wide. As a result, many properties are taxed much more heavily than others. For example, over one sixth of the properties are assessed at more than 30 percent of their market values. These properties pay effective tax rates that are at least twice those of the 9 percent of the houses assessed at less than 15 percent of their market values (Table 1). This lack of uniformity can be measured by the coefficient of dispersion. The United States Bureau of the Census recognizes a coefficient of 0.20 as indicative of un-

Table 1

Distribution of Assessment Ratios for One-Family Houses in Brooklyn

Total number of sales: 2,166

Assessment ratios*	Percentage of total	Cumulative distribution (in percent)
0.10-0.11	0.4	0.4
0.11-0.12	0.9	1.3
0.12-0.13	1.6	2.9
0.13-0.14	2.5	5.4
0.14-0.15	3.4	8.9
0.15-0.16	4.6	13.4
0.16-0.17	6.0	19.5
0.17-0.18	6.7	26.2
0.18-0.19	8.4	34.6
0.19-0.20	6.1	40.7
0.20-0.21	7.4	48.1
0.21-0.22	6.9	54.9
0.22-0.23	5.0	60.0
0.23-0.24	5.0	65.0
0.24-0.25	4.4	69.4
0.25-0.26	4.2	73.6
0.26-0.27	2.7	76.3
0.27-0.28	2.4	78.7
0.28-0.29	2.1	80.8
0.29-0.30	1.8	82.6
0.3-0.4	9.3	92.0
0.4-0.5	3.0	95.0
0.5-0.6	1.9	97.0
0.6-0.7	1.1	98.0
0.7-0.8	0.6	98.6
0.8-0.9	0.4	99.0
0.9-1.0	0.3	99.3
1.0-2.0	0.7	100.0

* Assessed value divided by market value.

Source: Estimates derived by the author from data furnished by the New York City Department of Finance.

[8] The number of classes is limited by administrative, legal, and political considerations. The larger the number of classes, the more difficult it would be for the assessors to make the distinctions required. Record-keeping problems would also multiply as classes abound. Furthermore, as the bases for drawing the lines become more intricate, they become more vulnerable to legal challenge as violating the equal protection provisions of the state and Federal constitutions. Also, by allowing a large number of classes, the legislature would open itself up to pleas from every special interest group for favorable treatment.

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Table 2
Coefficients of Dispersion*
By major building type and borough

Building type	Manhattan	The Bronx	Brooklyn	Queens	Staten Island
One-family houses	0.35	0.34	0.34	0.24	0.27
Two-family houses	0.35	0.33	0.40	0.31	0.26
Walk-up apartments	0.40	0.53	0.46	0.35	0.55
Elevator apartments	0.30	0.24	0.23	0.20	†
Warehouse buildings	0.46	0.45	0.34	0.39	†
Factory buildings	0.47	0.42	0.38	0.32	†
Garages	0.30	0.78	0.51	0.54	0.73
Hotels	0.41	†	†	†	†
Theatres	†	†	†	†	†
Store buildings	0.34	0.52	0.40	0.39	0.67
Loft buildings	0.45	†	†	†	†
Office buildings	0.37	†	†	0.38	†
Condominiums	0.23	0.13	†	0.15	†
Vacant land	0.55	0.97	0.77	0.84	0.80
Miscellaneous	0.46	0.70	0.58	0.41	†

* The coefficient of dispersion measures the deviation of the individual assessment ratios from the average assessment ratio for the group as a whole. It is computed by dividing the average amount of these deviations by the average assessment ratio, thereby making it useful for comparing degrees of dispersion between groups with different average ratios. A coefficient of 0.20 or above is considered indicative of unacceptable assessment practices by the United States Bureau of the Census.

† No coefficients of dispersion shown because of only ten or fewer observations.

Source: Estimates derived by the author from data furnished by the New York City Department of Finance.

acceptable assessment practices. The coefficient for these Brooklyn properties was considerably higher at 0.34.

Similar degrees of dispersion exist within virtually all property groups in the city (Table 2). In only two cases does the coefficient fall below the acceptable level of 0.20, and in most cases it ranges far above it. The message is clear: there are wide variations in the effective tax rates paid on similar properties.

The variation in assessments within a real estate class limits the effectiveness of a classification scheme to prevent tax shifts. Since each property cannot be assigned its own class, individual taxpayers will still face tax changes. However, the changes in taxes under a classified system are in general less extreme than those caused by a switch to a uniform tax. In some cases the tax change may actually be in the opposite direction. For example, taxes on properties now assessed at ratios above the citywide average but below the average for their class will rise instead of fall. As an example, if factory buildings were assigned a separate class, one fifth of them would face a tax increase of 50 percent or more. In contrast, since the average assessment ratio for factory buildings now exceeds the citywide average, the switch to a uniform tax system would result in major tax increases for only a few of these buildings. Indeed, the group as a whole would benefit from a 23 percent tax reduction.

Since classification cannot moderate, let alone eliminate, all tax increases on property in New York City, additional tax relief seems appropriate. To soften the effects of these remaining intraclass shifts, however, it may be necessary only to ease the transition with a phase-in program that also offers tax deferral for the elderly.[9]

A tax freeze in disguise

Workable options exist for dealing with the problems posed by full market assessment. However, much of the public debate over what to do about revaluing properties and the resulting potential for large tax shifts has focused on a totally different approach. This involves adjusting the assessed values of a large number of properties as a group. When all the properties

[9] By allowing the payments of taxes to be deferred, the local government may be forced to borrow the cash it needs to meet its expenses. This may pose a problem for New York City in view of its fragile fiscal condition.

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in the group are assessed at the same fraction of market value, this use of a single multiplicand brings assessed values to the desired standard. For example, if properties were assessed at one fifth of market value, then multiplication by a factor of five would ensure compliance with a "full value" standard. Because this process works by multiplying each of these properties by the same constant, it is called mathematical revaluation. By using a different factor for each group, disparities in assessment ratios between groups can be eliminated.

Although appealing in its simplicity, mathematical revaluation suffers from a critical flaw—it leaves intra-group variations in place. For New York City, this creates a problem because of the apparent impossibility of dividing its tax rolls into groups within which the ratios are uniform.[10] Mathematical revaluation merely perpetuates existing assessment disparities within groups, and so similar properties would continue to be taxed at different rates. In fact, when combined with a classified tax system, mathematical revaluation may serve only to prolong the present distribution of taxes. When the same groupings are used as the basis for both the revaluation process and the classification scheme, every property continues to be taxed as before.

By temporarily freezing taxes in this way, mathematical revaluation may also prompt more of the owners now relatively overassessed to appeal, thus clogging the appeals process and ultimately undermining the city's tax base. The reason is that a property now assessed at a ratio of 0.22, if in a group with a factor of 5, will end up assessed at 10 percent above its market value ($5 \times 0.22 = 1.10$). While under current assessment procedures an owner may fail to realize his relative overtaxation, once the assessed value exceeds the property's worth it is very likely that the owner will become aware of the relative overestimate.[11]

The increase in the number of appeals could be enormous. A rough estimate, based on the use of fifteen building classes, projects over a quarter of a million appeals, including 180,000 homeowners.[12] This number is many times the current average of about 40,000 per year—only a few thousand of these are homeowners—and so would greatly overburden the city's Tax Commission which must hear each appeal. If fewer classes were used, the number of appeals could be even higher. In addition, to the extent the appeals are successful, mathematical revaluation will reduce the city's tax base. If the assessed value reductions are granted in all the appeals estimated above, the loss to the city's taxable rolls could amount to almost 17 percent.

Reform of the property tax rolls

To reduce the potential for appeals, it is necessary to eliminate the disparities in assessment ratios. The only way to do this is to reappraise individually each property. This is a lengthy and expensive undertaking. However, it is not all that is required. In the future, these assessments must be maintained over time to keep them in line with the official standard. Through careful planning the tasks of reappraising properties and of establishing a system to maintain the integrity of the tax roles can be combined, thus reducing substantially the cost of doing each separately.

At present, the city's Real Property Assessment Bureau does not appear able to handle the tasks of appraisal and of updating assessments. In fact, this study and others have found it deficient in even the most basic kinds of bookkeeping functions.[13] Not all responsibility for the present disarray of the tax rolls rests with the Bureau's procedures. It has only some 125 field assessors to review annually the assessments on the city's 830,000 parcels. Priorities have had to be set, with the result that some properties were not reassessed even when they were sold.

As a test for carrying out any reform program, the city has set up a separate organization to investigate the feasibility for using techniques such as computer-

[10] The possibility of devising a scheme to divide the city's tax rolls into groups containing uniform assessment ratios appears remote. Attempts to construct such groups using the building classifications and geographic locations available were unsuccessful. The data provided for the subdivision of each of the fifteen major building types into as many as nine subgroups and each borough into as many as eighteen community planning districts.

[11] By enlarging the overassessment from 2 percent of market value (22 percent minus 20 percent) to 10 percent, mathematical revaluation also increases the visibility of the gains to be won through appealing the assessment. However, the actual tax reduction possible remains the same as long as the total tax on the group is unchanged. Thus, while the amount of the overassessment for a property worth $40,000 would increase from $800 to $4,000, the tax rate needed to raise the same revenue would have fallen by four-fifths.

[12] These estimates were calculated by extrapolating the results obtained from the sales data to the tax rolls as a whole. All owners of properties relatively overassessed by 10 percent or more compared with their class average (there were fifteen classes based on building type) were assumed to appeal. To arrive at the estimated loss to the city's tax base, it was assumed that each of the appeals resulted in a reduction of the property's assessed value to a level commensurate with the average assessment ratio for the class as a whole. The percentage reductions of total assessed value for each of seventy-five subdivisions of the sales data (fifteen building types in five boroughs) were then extrapolated to cover all the properties on the tax rolls.

[13] See, for example, Office of the Comptroller, State of New York, *Assessment Practices of the Bureau of Real Property Assessment, New York City Department of Finance*, Audit Report NYC-66-76 (November 1, 1978).

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assisted mass appraisal (CAMA) systems which are being used elsewhere. If this computerization effort is successful, it will help alleviate much of the paperwork and eliminate many of the value judgments now involved in appraisal work. The same level of staffing will then be able to monitor more closely the assessments of a larger number of properties. Greater use of computers to store and process data on each property should also help control one of the major sources of dispersion in assessment ratios—the delays in reassessing properties following changes in their market values.[14]

A need for action

Moving to a more equitable tax without creating major problems is possible, but the reform will not be painless. Reappraising properties will be costly and some owners will face tax increases. Classifying real estate into groups, however, can prevent shifts in taxes among these groups, thereby reducing the extreme changes in taxes. A phase-in program with tax deferral for the elderly could then ease the adjustment to the tax changes that remain.

Continued delay in reforming the property tax could itself prove costly. The inequalities in the present system have spawned appeals which even now represent outstanding claims against the city of over $1.5 billion, or almost half of the yearly collections from the property tax. Unless changes are made, this amount could rise even higher. The uncertainties over future taxes also discourage economic activity. With the shape of the tax system in doubt and with no clear assessment standard, households and businesses shy away from making further investments in structures and in related activities in New York City. Finally, continued noncompliance with existing law could force the courts to impose immediate deadlines, causing a too hasty revamping of this complex and important tax.

For reform to proceed, the legislature must act decisively. Past attempts to legalize the status quo have merely prolonged the period of uncertainty. Once the legislature establishes a viable set of programs, New York City and other municipalities in the state can then get on with the difficult job of reforming their property taxes with a minimum of disruption to taxpayers and the economy.

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[14] Lags in reassessing properties cause assessment ratios to fall (rise) as their values in the marketplace increase (decrease). Although the exact importance of lags is hard to show without information on the movements over time of price and assessed value for specific properties, many characteristics of the tax rolls suggest that lags are a major source of the dispersion. For example, the generally high level of the ratios for properties in the Bronx may reflect a failure by the city to readjust promptly and fully the assessed values as properties fall in price. In fact, many of the properties found to have high assessment ratios seem to have depreciated in value inasmuch as they have relatively low selling prices for their property type. In contrast, the low average assessment ratios for most one- and two-family houses seem attributable to the absence of any comprehensive program since World War II to reassess these properties. The one area of the city which apparently has received the most attention from the Real Property Assessment Bureau is Manhattan, and its high average assessment ratio, the nearest of all the boroughs to the "full value" standard, reflects this fact.

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Perspective on the United States External Position Since World War II*

During the past generation, the international economic position of the United States has been transformed. In the years immediately following World War II, this country was perceived as the world's most powerful nation—the center country, the stabilizer of the international economy. In this role, its initial function was to provide leadership and vital resources for the postwar recovery. Thereafter, its task was to maintain a strong but noninflationary domestic economy as well as open goods and capital markets. If international imbalances occurred, it was the task of *other* countries to adjust. During the seventies, and particularly after the breakdown of Bretton Woods, this perception of the United States as the center country faded. It is still acknowledged as the world's largest economy and still seeks most of the same economic objectives as before. However, it no longer dominates the world economy and must, like other countries, participate in the international adjustment process. This greatly complicates the function of stabilization which—if it is to be performed at all—must be shared among a group of major countries, of which the United States is only one.

This shift in the position of the United States has been closely associated with a corresponding change in the international role of the dollar. For twenty-five years after the war, the stability of the American currency was widely regarded as essential to world prosperity. For most countries, an increase in official claims on the United States was viewed as a sign of success in economic policy. The dollar's stability in terms of gold was almost unquestioned. It was the *nth* currency in terms of which other currencies would adjust.

In practice, the setting of the exchange rate of the dollar by foreign countries involved two distinct but related asymmetries. One involved a devaluation bias against the American currency. Many nations devalued their currencies against the dollar, but countries whose currencies were strong normally preferred to accumulate dollars—sometimes in large amounts—rather than risk the deterioration in competitive strength that was expected to result from appreciation. The other side of the coin was another asymmetry, seen by some as giving the United States an "exorbitant privilege" and by others as weakening external discipline on its economic policy. When foreign currencies weakened, the countries concerned lost reserve assets, which signaled the need for measures to correct the external imbalance. In contrast, the reluctance of foreign monetary authorities to accept currency appreciation and their related willingness to accumulate dollars meant that the discipline imposed by losses of reserve assets was felt only infrequently by the United States.

Along with the fading of the perception of the United States as the center country came a reappraisal by

* Stephen V.O. Clarke, Research Officer and Senior Economist, is the author of this article. Many others contributed to its development. Among them, special mention must be made of William Diebold, Jr., Edward J. Frydl, Robert G. Hawkins, Roger M. Kubarych, Peter B. Kenen, Robert E. Lipsey, and Samuel Pizer. The author, of course, takes responsibility for any mistakes that remain and also for the views expressed which do not necessarily reflect those of the Federal Reserve Bank of New York or the Federal Reserve System. In preparing the statistical material, the author has benefited from the assistance of Guido Cipriani, Larry Katz, Sophia Oh, and Vera Shturman.

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foreign countries of their attitude toward the American currency. This reappraisal was stimulated, in the most immediate sense, by the American authorities themselves: by the closing of the gold window in August 1971, by the devaluations of the dollar negotiated late in that year and again in early 1973, and by subsequent indications that the administrations in Washington were little disposed to intervene in the exchange markets in order to defend the external value of the American currency and even hankered, on occasion, for some further depreciation of the dollar against major currencies. When such attitudes in Washington were accompanied by continuing massive increases in foreign claims against the United States, it was hardly surprising that monetary authorities abroad began to seek ways to diversify their international reserves into assets other than the dollar. Toward the close of the seventies, a few important countries came to see appreciation as a means of curbing domestic inflation at about the same time that the United States authorities began to recognize how much dollar depreciation was adding to America's inflationary difficulties. Thus, the willingness of foreign monetary authorities to intervene in support of the dollar declined just as the Administration became more fully aware of the benefits of such support for the United States.

These changes in the position of the dollar reflected more fundamental developments here and abroad that may be viewed from several angles. From the narrow perspective of this country's balance of payments, the weakening of the dollar can be attributed to a growing disequilibrium between other countries' demand for the American currency and the supply of that currency flowing into foreign markets. Especially in the 1970s, the total of dollars that foreigners desired both to pay for net imports of goods and services from the United States and to increase their official reserves tended to fall well below net financial outflows from the United States.[1] The causes of this disequilibrium are numerous and not fully understood but clearly lie in both financial and goods markets. On the financial side, it has long been accepted that a wealthy economy is likely to be a supplier of capital, on balance, to the rest of the world. This has, in fact, been true of the United States throughout the postwar period. During the 1970s, however, these financial outflows became exceptionally large by historical standards. The expansion was associated with a variety of developments, including the depreciation of the dollar against other major currencies and increased borrowing by nonoil-producing countries. These countries, being faced with sharply rising import costs, turned to dollar markets here and abroad to finance payments deficits (especially for oil) as well as to increase their international reserves.

But, while the world continued to rely heavily on dollar financing, the relative economic position of the United States was changing fundamentally from what it had been in the earlier postwar years. With growth abroad more rapid than in this country, the United States share of world production dropped from about two fifths in 1950 to only a little over one fifth at the close of the seventies. Abroad, high levels of savings and investment expanded productive capacity and narrowed the technological lead that had previously been enjoyed by American industry. Increasingly, technologies and managerial methods employed by foreign firms became equal to, or even surpassed, those employed by their United States competitors. At the same time that the industrial lead of the United States was narrowing, its dependence on foreign sources for primary commodities, particularly petroleum, was increasing. This tendency reached back into the fifties and sixties but became a matter for broad public concern only after 1973 when the sharp rise in oil prices began.

The upshot of these various developments was that, for sustained periods during the seventies, dollar transfers from the United States for imports of goods and services and financing exceeded—sometimes by substantial amounts—the total that foreigners spent on purchases of goods and services from this country and desired to add to their dollar assets. This disequilibrium resulted, of course, in downward pressure on dollar exchange rates which raised questions about the advisability of continuing to hold existing stocks of dollars. Bearishness about the dollar thus tended at times to become self-aggravating and cumulative.

These difficulties could, in theory, have been handled by appropriate international adjustments. However, throughout most of the sixties and seventies, the adjustments that were in fact achieved—although sometimes substantial—nevertheless fell far short of those required to restore and to maintain equilibrium between the United States and the rest of the world. The causes of this shortfall are complex and many of the explanations are controversial. However, two long-term causes are generally accepted. In the United States, economic policy has provided inadequate incentives for saving and productive investment. This lack has had adverse effects on both the financial and goods sides of the balance of payments. On the financial side, the weaker incentives to invest in the United States than abroad led to larger private capital outflows

[1] Financial outflows are defined hereafter as remittances, direct investments, official and private grants and loans, and the statistical discrepancy in the balance-of-payments accounts.

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than would have occurred with more appropriate economic policies. In the goods market, the international competitive strength of the United States has been impaired because the growth of productivity has been far lower here than in most other major countries. The other long-term obstacle to the improvement of this country's balance on goods and services has been the various tariff and other barriers to imports maintained by Japan, most developing countries, and—as regards agricultural products—the European Community (EC). In attempting to persuade other countries to reduce such barriers, American negotiators have been handicapped because special interests here—ranging from dairy producers to steel makers—have themselves obtained various degrees of protection against foreign competitors. Although several rounds of multilateral trade negotiations made progress in reducing them, such barriers were still creating significant difficulties for international adjustment at the close of the seventies.

At various times, other difficulties also worsened the international economic problems of the United States. A majority of economists would probably agree that international adjustment was complicated prior to 1971 by the rigidity of the exchange rate structure and, particularly, by the reluctance of such surplus countries as Germany and Japan to appreciate their currencies against the dollar. Most observers would also agree that the inflationary financing of the Vietnam war contributed significantly to the weakening of the dollar. After the breakdown of Bretton Woods, the United States authorities failed, more often than not, to accompany dollar depreciations with policies designed to release domestic production in order to strengthen the trade balance. Major countries abroad also played a role in the adjustment difficulties. Giving high priority to curbing inflation, they were reluctant to adopt expansionary policies either when this would have been appropriate because of the appreciation of their currencies or when they were urged to follow the lead of the United States during the recovery from the 1974-75 recession.

At the beginning of the 1980s, a new perception of the international economic role of the United States was coming into focus. It was no longer the center country but only one—albeit still the largest—of a growing number of industrial countries. The change was symbolized by the reduced willingness of foreign countries to add to their balances of American currency as well as by the related need for the American authorities to borrow key foreign currencies in overseas bond markets in order to reinforce their ability to support the exchange rate of the dollar. Throughout the postwar years, other countries had defended their currencies primarily by drawing down their foreign exchange reserves. Now, the same was becoming true for the United States, although still on a relatively small scale.

These borrowings to strengthen its international reserves reflected a growing recognition in the United States of the importance of exchange stability in national stabilization policy. Bitter experience had forced many countries abroad to see the link between exchange depreciation and domestic inflation and to adopt stabilization policies that sought—not always successfully—external as well as domestic objectives. In the United States, the experience of the 1970s underlined the interdependence of these two aspects of stabilization policy: not only did the outcome of Government programs to reduce inflation partly depend on the avoidance of exchange depreciation, but the success of official intervention in the exchange markets rested in large measure on the adoption of sound domestic economic policies. Thus, the final years of the 1970s saw Federal Reserve policy influenced more than at any previous time since the war by the need to support the dollar in the exchange markets. Other policies were also being influenced increasingly by external considerations. For example, changes in tax policy aimed to strengthen the international competitiveness of United States industry by providing greater incentives to invest while energy policy sought to reduce dependence on imported petroleum. In these and other ways the United States was attempting to strengthen its external position and to adjust to the ever-changing international economy.

In the pages that follow, the developments that have contributed to the change in the international economic position of the United States are analyzed in greater detail. The analysis begins with a brief survey of developments in the overall balance of payments of the United States since 1950. The growth and cyclical pattern of the financial outflows as well as the various factors that have influenced the balance on goods and services are then reviewed. The large role of cyclical and other temporary factors in the strengthening of the United States balance of payments during 1979 is underlined. Against this background, the conclusion emphasizes that this improvement, while welcome, did not diminish the urgent need for policies designed to provide more enduring strength to this country's external position.

United States balance of payments, 1950-79

Net financial outflows from the United States exceeded net exports of goods and services by $168 billion during the years 1950-79 inclusive (Table 1). Such excesses—reflected in reserve transactions—occurred in

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Table 1

Balance of Payments of the United States, 1950-79

Annual averages in billions of dollars

Component	1950-57	1958-64	1965-69	1970-74	1975-76	1977-78	1979
Goods and services	**3.6**	**5.5**	**5.4**	**5.3**	**16.3**	**— 8.9**	**5.3**
of which:							
Merchandise trade balance	3.1	4.5	2.8	— 2.1	— 0.1	—32.3	—29.4
Investment income	2.7	4.0	5.5	9.9	14.4	19.8	32.3
Financial transfers	**—4.5**	**—8.0**	**—5.5**	**—18.6**	**—26.7**	**—26.5**	**9.8**
Unilateral transfers (excluding military)	—2.8	—2.5	—3.0	— 4.4	— 4.8	— 4.9	— 5.6
United States Government (excluding reserve assets)	—0.3	—1.1	—2.0	— 1.5	— 3.8	— 4.2	— 3.8
United States banks, net	0.1	—0.2	3.5	— 4.1	—11.6	—10.4	6.6
United States claims reported by United States banks	—0.3	—1.1	—0.1	— 6.6	—17.5	—22.2	—26.1
United States liabilities reported by United States banks	0.4	0.9	3.6	2.5	5.8	11.8	32.7
Other United States private assets	—2.3	—4.1	—6.9	—11.4	—22.5	—22.2	—32.4
Other foreign private assets in United States	0.5	0.5	3.1	6.1	7.9	10.2	16.4
Errors and omissions	0.3	—0.5	—0.2	— 3.2	8.1	4.9	28.7
Allocation of special drawing rights	—	—	—	0.5	—	—	1.1
Allocation of SDRs plus total financial transfers	**—4.5**	**—8.0**	**—5.5**	**—18.1**	**—26.7**	**—26.5**	**11.0**
Reserve transactions, total	**0.9**	**2.5**	**0.1**	**12.9**	**10.5**	**35.4**	**—16.3**
United States reserve assets (+ = decline)	0.1	1.2	0	0.7	— 1.7	0.2	— 1.1
Claims of foreign monetary authorities on United States, (+ = increase)	0.7	1.3	0.2	12.2	12.2	35.2	—15.2
of which: changes in liabilities reported by United States banks	0.6	0.5	0.6	2.1	— 0.6	3.1	6.6

Because of rounding, figures may not add to totals.

Sources: United States Department of Commerce, *Survey of Current Business*, various issues. Data for 1950-59 are from the October 1972 *Survey*, 1960-78 from the June 1979 issue, and 1979 from the March 1980 issue. Banking flows and changes in claims of foreign monetary authorities on the United States for 1950-59 are partly estimated. Short-term liabilities to foreign monetary authorities reported by United States banks for 1950-59 are from the Board of Governors of the Federal Reserve System, *Banking and Monetary Statistics*, 1941-70, page 932.

twenty-four of the twenty-nine years ended 1979—the five exceptions being years of monetary stringency in the United States (Chart 1). Until 1979, the excesses tended to increase, not only in current dollar terms, but also relative to United States gross national product (GNP) (Table 2).[2] The transfer gap—as it may be called—between financial outflows and the surplus on goods and services averaged about ¼ percent of United States GNP in the fifties and sixties but well over 1 percent in 1970-78. In 1979, the transfer gap was reversed as financial movements shifted to heavy inflows while the balance on goods and services strengthened.

The growth of the transfer gap, until last year, was reflected principally in increased claims on the United States by foreign monetary authorities. Only about one twentieth was settled by United States reserve assets, primarily gold sold by the Treasury during the late fifties and during the sixties before the breakdown of Bretton Woods. In contrast, foreign official claims on the United States, which were reported at less than $3 billion at the end of 1949, amounted to $31 billion in mid-1971, before the closing of the gold window, and to $143 billion in December 1979.[3] Including an additional $61 billion of balances of central banks in the Euromarkets, the total of official dollar assets comprised 63 percent of reported foreign exchange reserves at the end of 1979, compared with only 27 percent thirty years earlier.

[2] The general approach to the analysis of the balance of payments follows Fritz Machlup's paper on "The Transfer Gap of the United States", *Banca Nazionale del Lavoro Quarterly Review* (September 1968).

[3] Includes Bank for International Settlements and European Fund. United States Treasury *Bulletin* (May 1980, Table IFS-3), page 91.

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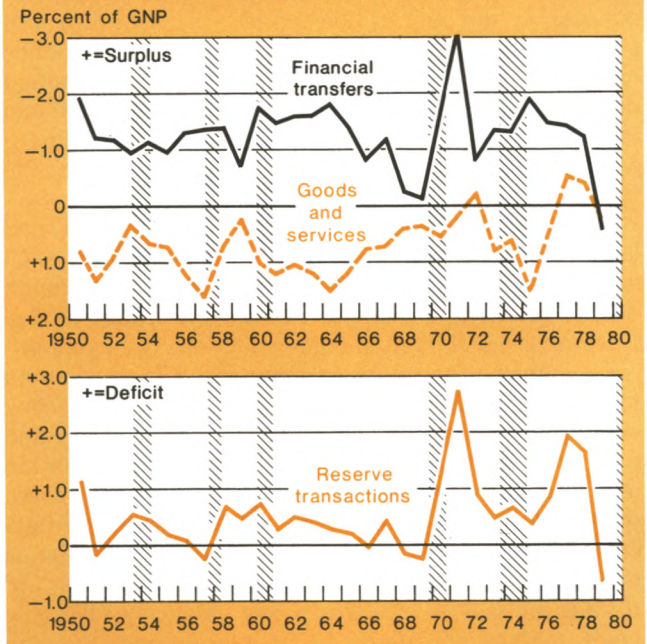
Chart 1

Cyclical Movements in the United States Balance of Payments



Shaded areas represent periods of recession, as defined by the National Bureau of Economic Research.

Sources: Balance-of-payments data are from the sources cited for Table 1. GNP data are from the Economic Report of the President (January 1980), page 203; recent data have been updated.

Table 2

Major Components of the United States Balance of Payments

In percent of gross national product

Period	Balance on goods and services	Financial transfers*	Reserve transactions*
1950-57	0.95	−1.22	0.28
1958-60	0.65	−1.27	0.62
1961-69	0.94	−1.12	0.18
1970-74	0.43	−1.61	1.14
1975-78	0.29	−1.49	1.20
1975-79	0.28	−1.11	0.82
1979	0.22	0.42	−0.69

The periods selected generally cover full business cycles as measured by the National Bureau of Economic Research. The first year of each period is that in which the trough occurs, the final one includes the peak or, in the case of 1979, the most recent data. However, the 1950-57 period covers virtually all of the two cycles of which the first trough is dated October 1949.

* Allocations of SDRs (special drawing rights) are included in reserve transactions but excluded from financial transfers; this inclusion has negligible effects on the ratio of reserve transactions to GNP, reducing it by 0.04 percent in 1970-74 and increasing it by a similar amount in 1979.

The great bulk of these foreign official dollar gains reflect financial outflows from the United States. In only three years—1972, 1977, and 1978—did deficits on goods and services contribute to such foreign official gains. Over the rest of the period, net sales of goods and services absorbed dollars from abroad. Although total financial outflows have expanded greatly in current dollar terms, in relation to United States GNP they have shown remarkable stability. Measuring them over full business cycles, as is done in Table 2, the outflows have fluctuated in the neighborhood of 1-1¼ percent of GNP, except in 1970-74, when the breakdown of the Bretton Woods arrangements doubtless explains most of the rise to 1.6 percent. Within each cycle, striking shifts have occurred. Outflows have surged in periods of monetary ease but have subsequently declined sharply—sometimes changing to inflows—under monetary stringency. Illustrative are the large outflows in the recession years 1970 and 1975 and the virtual drying-up of such flows in 1969, when monetary conditions were tight. Although other factors played a role, the successive moves toward increased monetary restraint, made in late 1978 and during 1979, were essential in bringing about the dramatic reversal of financial flows last year.

In contrast to the general stability over the cycle of financial outflows, the average annual surplus on goods and services declined to only 0.3 percent of United States GNP in 1975-79 from almost 1 percent in the fifties and sixties. Within the total of goods and services, the two most important components are the merchandise trade balance and income on account of foreign investments (Table 1). The latter has shown a rising surplus throughout the period under review, reflecting earnings on the large placements abroad of American capital.[4] On the other hand, the

[4] Only part of the income from foreign investments is repatriated to the United States, the rest being plowed back into foreign economies. The reinvestment abroad of such earnings is taken into account as an increase in United States private assets abroad, *i.e.*, as a financial outflow from the United States. Under an earlier presentation of the United States balance-of-payments statistics, reinvested earnings were omitted from both the balance on goods and services and the capital account. The change in the presentation of the balance of payments does not, of course, affect the size of the gap between financial outflows and the surplus on goods and services.

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merchandise trade balance has tended to weaken. Showing expected cyclical fluctuations, the surplus peaked in 1964 at almost $7 billion, then declined, shifting to a deficit in 1971 for the first time since 1893. After recovering to a record surplus of $9 billion in the recession year 1975, the balance again shifted to heavy deficit as the United States economy moved back to full capacity in 1977 and 1978, while the recovery in other industrial countries lagged. Despite the depreciation of the dollar and a reversal of cyclical pressures, the deficit—though smaller than in the two previous years—remained substantial in 1979. The problems behind the weakness in the United States merchandise trade balance occupy the bulk of this paper, following a discussion of financial outflows.

Financial outflows from the United States

Financial outflows from the United States over the past twenty-five to thirty years are explicable in terms of this country's wealth relative to the rest of the world, the commitment of successive United States administrations to the principles of a market economy, the rapid recovery and growth of most major countries abroad and many smaller ones, and the reluctance of most of these countries to go very far in dismantling restrictions on capital outflows. The upsurge in outflows during the seventies was, at times, associated with private portfolio shifts out of the depreciating dollar into assets denominated in currencies that were expected to appreciate[5] as well as with increased borrowing by foreigners to finance payments deficits, particularly with the Organization of Petroleum Exporting Countries (OPEC), and desired increases in international reserves.

Despite the wealth of the United States, the private markets here were slow in beginning to supply resources to the rest of the world after World War II (Table 3). Many financial institutions still held bonds and other claims on which foreigners had defaulted during the depression of the 1930s. The American banking system, chastened by the unhappy experiences of the interwar years, had retreated from the foreign field.

With recovery among the war-torn countries and impressive growth elsewhere, the attractions of foreign markets increased. Dollar financing, funneled through official grants and loans both from the United States Government and international institutions, was supporting expansion in the world economy. Closely related to United States financial support, American policy was committed to reducing the barriers to trade and payments that had sprung up during the depression and the war. As international prospects improved, United States companies increasingly ventured abroad. Often they established manufacturing subsidiaries overseas to avoid barriers such as the external tariff of the EC as well as to benefit from relatively favorable labor market conditions in host countries. Keeping pace with the growing international activity of American manufacturing firms, United States commercial banks increasingly established branches and offices abroad, strengthening their links with foreign financial markets. Foreign banks followed suit by setting up numerous offices in the United States. At the same time, the New York bond market—with resources several times greater than those of the largest foreign competitor—gradually reopened to foreign borrowers.

[5] H.R. Heller, *International Reserves and World-Wide Inflation*, International Monetary Fund *Staff Papers* (1976), pages 68-70.

Table 3

Composition of Private Capital Flows, 1950-79

Annual averages as percentage of gross national product

Period	Direct investment (net)	Banking flows (net)	Other recorded nonofficial capital (net)	Total recorded private flows	Statistical discrepancy	Total
1950-57	−0.43	0.02	−0.03	−0.44	0.09	−0.36
1958-60	−0.45	0.03	−0.17	−0.59	−0.02	−0.61
1961-69	−0.54	0.19	−0.04	−0.39	−0.08	−0.47
1970-74	−0.57	−0.38	0.12	−0.83	−0.29	−1.12
1975-79	−0.58	−0.44	−0.16	−1.18	0.53	−0.64
1979	−0.72	0.28	0.04	−0.40	1.21	0.81

Totals may not add because of rounding.

The sources are the same as in Table 1 and the periods selected are for full business cycles as described in the note to Table 2.

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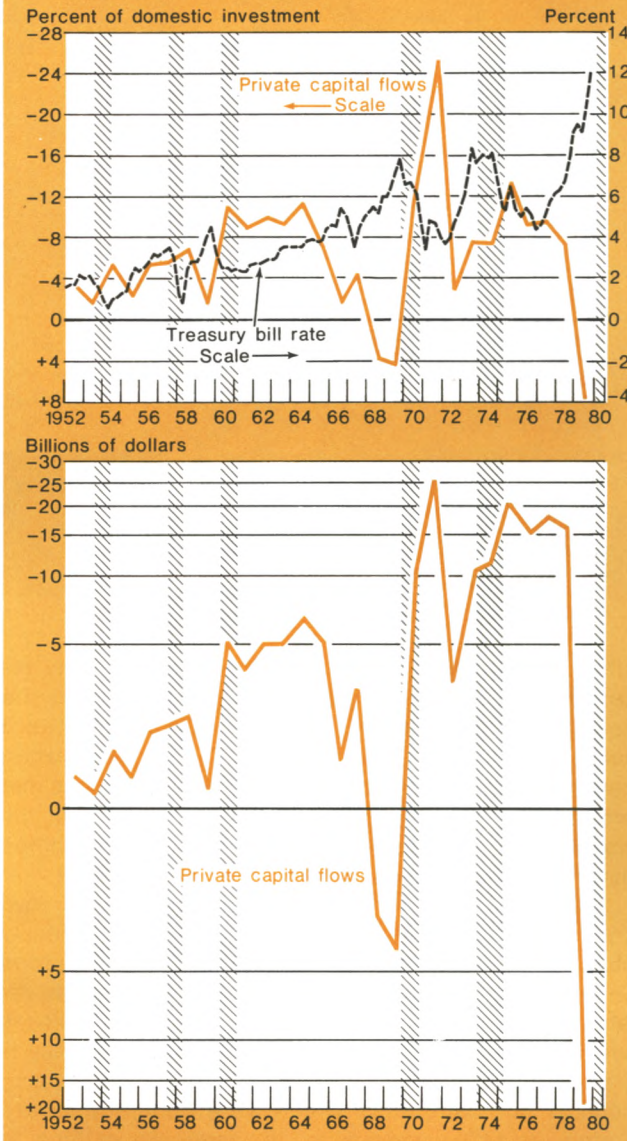
The reinvolvement of our financial markets with the rest of the world has not always been regarded as an unmixed blessing. The expansion of United States private lending abroad in 1958-60 came at a time when this country's merchandise trade balance was showing distinct signs of weakness. Having rebuilt their holdings of dollars, some major central banks abroad began to convert continued inflows of dollars into gold. Some $5 billion of the metal was bought from the Treasury in the three years ended December 1960. Although its gold stock still totaled almost $18 billion, greatly exceeding the holdings of any other country, the continued rise in United States liquid liabilities to foreign monetary authorities raised questions about the future stability of the dollar. As part of a program to calm these fears, the United States authorities instituted various restrictions on capital outflows, beginning in 1963 with a tax that discriminated against borrowings by most of the industrial countries. This tax was subsequently reinforced by so-called voluntary controls on specified lending abroad by commercial banks and by large nonbank corporations. Finally, in a classic example of the tendency of controls to spread, mandatory restrictions were imposed in 1968 on a wide range of United States direct investments abroad.

Whether these controls did more than divert financial flows into uncontrolled channels has been much debated. What does seem clear is that monetary conditions in the United States continued to have the predominant influence on private capital flows (Chart 2).[6] Such outflows contracted sharply during the 1966 credit crunch and, after recovering somewhat the following year, changed into substantial inflows under the pull of taut monetary conditions in 1968 and 1969. Thereafter, when the boom gave way to recession in 1970, the flows were again reversed, becoming heavily outward. This, combined with a shift of the United States trade balance into deficit and the breakdown of the par value system, led to the explosion of private capital outflows in 1971. After the closing of the gold window, the collapse of Bretton Woods, and the floating of the major currencies removed the original basis for the attempts to restrict capital outflows from the United States, the controls were lifted in early 1974. From then on, the flows responded freely to the increased demands of foreigners for financing as well as to changes in relative monetary conditions and exchange rate expectations. Outflows in the recession year 1975 were almost as large as during the 1971

Chart 2

Private Capital Flows in the United States Balance of Payments



"Private capital flows" are the total of changes in the United States private assets abroad, net (line 47), other foreign assets in the United States, net (line 64), and the statistical discrepancy (line 75) from Table 1 of the "United States International Transactions", published in the Department of Commerce, Survey of Current Business (March 1980 and earlier issues). "Domestic investment" is gross private fixed nonresidential investment as given in the Economic Report of the President, January 1980, page 219. Data for 1979 have been updated.

Shaded areas represent periods of recession, as defined by the National Bureau of Economic Research.

[6] Private capital flows exclude private remittances and Government grants and loans which are counted in the broader category of financial flows considered above.

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Table 4

Role of the Dollar in International Finance

International claims	1974	1975	1976	1977	1978	1979
(1) Increase in gross external claims* as reported by banks in major financial markets (billions of dollars)†	90	140	117	156	256	276
of which: Percentage denominated in dollars	78	79	77	54	59	63
(2) Gross international bond issues (billions of dollars)‡	7	20	33	34	34	41
of which: Percentage denominated in dollars	63	51	61	56	38	42
(3) Total (1) + (2) (billions of dollars)§	97	160	150	190	290	319
of which: Percentage denominated in dollars	77	76	73	55	57	61

* Includes claims both in domestic currency on nonresidents and also in foreign currency on residents and nonresidents.

† Includes Belgium-Luxembourg, France, Germany, Italy, the Netherlands, Sweden, Switzerland, United Kingdom, Canada, Japan, and the United States plus the United States offshore centers in the Bahamas and Cayman Islands for the entire period. Austria, Denmark, and Ireland are included in 1977 and thereafter.

‡ Includes Eurobond issues as well as issues on behalf of nonresidents in the major national markets.

§ Increases in gross external claims and in gross international bond issues are not strictly comparable because refinancing is treated differently. Refinancing of bank-reported external claims leaves the total of such claims unchanged. As regard the bond series, comprehensive data on maturities and refinancing are not available. It is therefore not possible to distinguish between issues that are for refinancing purposes and those that provide new money.

crisis. The outflows then receded as the economy recovered during the following three years. Within the generally declining trend, however, there were outward surges in the final quarters of 1977 and 1978, when pessimism about the outlook for the dollar became pronounced. The change in market sentiment after the November 1, 1978 measures, as already noted, shifted the financial movements to heavy inflows in 1979.

Standing back from short-term fluctuations, two points are worth noting. In contrast to the previously observed stability of *total* financial flows, *recorded private* capital outflows have tended to increase in relation to United States GNP over the five business cycles covered in this study (Table 3). The tendency is gradual for net direct investment abroad but is pronounced for bank flows which were generally inward during the fifties and sixties, subsequently shifting to substantial outflows in the seventies. However, the rising tendency of recorded private outflows was checked by the shift in the statistical discrepancy—believed to reflect primarily unrecorded capital movements—from outflows in the troubled period around the breakdown of Bretton Woods to substantial inflows in the latter half of the seventies.

The second striking feature is the continued heavy dependence of the world economy on dollar financing, not only from the United States, but also from the Euromarkets. Despite the shift in the United States international economic position, two thirds of international lending was still denominated in dollars in 1974-79 (Table 4). True, the dollar proportion showed a declining trend during those years. Part of this decline was doubtless structural, in the sense that it reflected the desire of lenders to diversify at the margin into assets denominated in such currencies as the Deutsche mark and the Swiss franc. But another significant part of the decline was almost certainly a cyclical phenomenon, associated with the tightening of United States monetary conditions relative to those in other major financial centers. To the extent that it was cyclical in origin, the recent decline in the dollar proportion of international financing is likely to be reversed when the balance of monetary pressures moves against the United States.

Although the high proportion of dollar financing was to be expected in the early postwar years, the extent of the continued dependence seems somewhat anomalous now. In the early years, major countries abroad were still reconstructing their economies. Almost universally, controls were maintained to channel national savings into the building of domestic productive capacity. By so doing and by attracting capital (mainly in the form of dollars) from abroad, foreign countries strengthened their economies to the point where sev-

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eral of them now vie in per capita wealth with the United States. Yet, until the recent abolition of exchange controls in the United Kingdom, few were willing to go as far as the United States in opening their financial markets to international pressures. Even those countries which were most devoted to market principles still maintained informal controls over foreign access to their financial markets. Where devotion to such principles was less strong, the authorities severely restricted foreign borrowing, not only from their bond markets, but also from their commercial banks. Experience suggests, it is true, that such controls rarely succeed in attaining their full objectives. Nevertheless, they probably did divert a significant proportion of the demand for international capital to the huge and freely accessible dollar markets. Although restrictions on capital flows have now been significantly reduced by Britain's recent move, foreign reliance on dollar financing is likely to remain excessive until other major countries follow suit.

Weakness of merchandise trade balance

While one aspect of the expanding transfer gap has involved large financial outflows from the United States, another concerns, as previously noted, the weakness of this country's merchandise trade balance. This weakness has resulted from numerous related factors:

(1) More rapid growth and technological advance abroad;

(2) An exchange rate structure that, until the depreciation of the dollar in the early seventies, gave a strong competitive advantage to foreign countries;

(3) The adverse shift in the terms of trade of the United States since 1969, *i.e.*, prices of imports increased more rapidly than those of exports;

(4) The increased dependence of the United States on imported raw materials, particularly petroleum;

(5) The prevailing domestic orientation of United States firms resulting in general lack of interest in export markets, in contrast to competitors in other countries, more dependent on international trade, and

(6) Foreign barriers against some products in which the United States has a significant competitive advantage.

All these factors have had a bearing on the weakness of the merchandise trade balance at one time or another since World War II, but their influence has varied. The following analysis will discuss them separately and suggest how, in successive periods, each interacted with the others.

More rapid growth and technological advance abroad

More rapid advance in many foreign countries than in the United States tended to weaken this country's merchandise trade balance. This result was the outcome of opposing tendencies. While certain tendencies strengthened America's external position, others—yet more powerful—impaired it.

The strengthening tendencies are clear. In the early postwar years, the United States was the world's economic colossus, accounting for almost 40 percent of global GNP. Its undamaged and highly productive economy was the source from which the rest of the world sought the materials, plant and equipment, and above all the advanced technology with which to repair the damage of hostilities and to lift living standards, often from poverty levels. In this period, recovery abroad improved the merchandise trade balance of the United States—huge foreign demand for our products was circumscribed only because financing was limited. Even after the worst shortages of the early postwar years had been relieved, relative demand pressures continued to favor the trade balance of the United States because the economic growth of many foreign countries was more rapid than here. Although the 3.8 percent average annual increase in the real GDP (gross domestic product) of the United States in 1950-73 was in line with this country's historical performance, its growth rate was less than three quarters the corresponding weighted average expansion in the thirteen other principal industrial countries.

However, such favorable influences from the demand side were countered by opposite pressures from the side of supply. The view that more rapid growth abroad favors the trade balance of the slow-growing country assumes that productive capacity, technology, and product design are not changing in the competing economies or are everywhere changing at the same rate. As regards economic behavior since the war, such an assumption is erroneous. For many foreign countries, the wealth and prosperity of the United States established a standard toward which economic policy was directed; their aim was to narrow the gap in productivity and technology that lay between them and the American colossus. A related aim, encouraged by the United States especially in the Marshall Plan years, was the restoration of external economic strength to bring an end to dependence on American aid. Thus, rapid growth abroad involved, above all, the expansion of capacity that embodied advanced technology and the designing of superior products that

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would penetrate foreign markets, particularly those of the United States. For these purposes, governments abroad encouraged saving and productive investment which absorbed, in many countries, a substantially larger proportion of GDP than in the United States, the contrast with Japan being especially striking (Table 5). For this as well as other reasons, productivity per man-hour in manufacturing grew substantially more rapidly in major foreign countries than here,[7] thus helping strengthen their competitiveness in relation to the United States (Table 6).

Policies to stimulate saving, investment, and technological advance bore fruit across a wide spectrum

[7] Angus Maddison, *Long Run Dynamics of Productivity Growth*, Banca Nationale Del Lavoro *Quarterly Review* (March 1979).

Table 5

Gross Domestic Investment in Selected Countries

As percentage of gross domestic product

Country	1960	1976	1977
Industrial countries:			
France	24	23	24
Germany	27	24	22
Italy	24	18	21
Japan	34	33	32
United Kingdom	19	17	19
United States	18	16	18
Developing countries:			
Brazil	22	26	22
Egypt	13	24	24
India	17	19	21
Korea, Republic of	11	25	26
Mexico	20	26	20
Philippines	16	31	30
Spain	21	24	23
Taiwan	20	28	27

Source: The World Bank, *World Development Report*, 1978, pages 84-85, and 1979, pages 134-35.

Table 6

Output per Man-hour in Manufacturing, Selected Countries

Average annual growth rates

Country	1960-72	1973-78	1979
United States	3.2	1.8	1.6
Japan	10.4	4.8	8.3
Germany	5.9	5.2	5.2
France	5.9	4.9	5.4
United Kingdom	4.0	1.1	2.2
Italy	6.2	4.3	8.7
Canada	4.2	3.2	0.8

Source: United States Department of Labor, Bureau of Labor Statistics, *International Comparisons of Manufacturing Productivity and Labor Costs.*

Table 7

United States Balances of Trade in Technologically Intensive Manufactures*

Selected years; annual averages in billions of dollars

Area	1962	1970	1971-74	1975-76	1977-78	1979
Western Europe	1.6	2.4	1.6	4.0	1.8	2.9
Japan	0.3	—1.0	—3.1	—5.4	—11.7	—14.1
Total, all countries	6.6	7.2	16.0	22.0	15.3	19.9

* Technologically intensive manufactures include chemicals, nonelectrical and electrical machinery and equipment, transportation equipment, ordinance, and instruments and controls.

Sources: Peter G. Peterson, *United States in the Changing World Economy*, Vol. 2 (United States Government Printing Office, 1971), Charts 30 and 32; United States Department of Commerce, Bureau of the Census, "Highlights of U.S. Export and Import Trade", FT 990 (December 1977, December 1978, and December 1979).

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of countries, from the older industrial ones to others like Brazil, South Korea, the Philippines, and Taiwan that previously had little or no industrial base. Many lines of production, for which the United States was the only, or one of the few, suppliers in the early postwar years, were replicated abroad. With a view to capturing export markets, foreigners not infrequently manufactured products incorporating more advanced design and technology than those of their American competitors. Indeed, the rapid rise in exports was a major force behind the faster growth of foreign countries than of the United States. The counterpart of the growing share of foreign countries in world GNP was, therefore, a decline in the share of the United States in world exports of shoes, steel, automobiles, motorcycles, tools, and various types of machinery. Even in the field of technologically intensive manufactures, where its lead has been the greatest, the United States trade balance, while remaining strong overall, has weakened sharply in relation to Japan (Table 7). Increasingly, therefore, the United States has become only one—albeit still the largest—of a number of industrial economies competing for a share of the world market.

Structure of exchange rates

The recovery and expansion of the rest of the world was fostered by the exchange rate structure that characterized the twenty to twenty-five years immediately following World War II. Particularly after the devaluation of sterling and numerous other currencies in September 1949, prices—measured in dollars—in major countries abroad were substantially lower than in the United States. How large this disparity was is open to debate, but the evidence suggests that the gap remained significant until the United States closed the gold window and the dollar depreciated on the exchanges in the early 1970s.

Evidence of this disparity in prices—while far from complete—relates, not only to particular manufactures, but also to traded goods generally. Dollar prices of iron and steel products averaged 15-27 percent less in Germany than in the United States in 1953-64, 8-24 percent less in the United Kingdom, and 25-30 percent less in Japan, for which available data cover only 1961-64. Somewhat smaller but still significant disparities existed for machinery and transportation equipment.[8] For traded goods generally, estimated prices in 1970 were 7-17 percent lower in major foreign countries than in the United States (Table 8). An exception was Germany which had eliminated the estimated disparity by means of an 8.5 percent appreciation of its currency against the dollar in the fall of 1969. No comparable figures for traded goods are available for earlier years, but the rise in the general price level shown in Table 9 suggests that the disparities are likely to have been significantly larger in the early fifties, particularly in the cases of Germany and Japan.[9]

The disparity in prices between the United States and its major competitors was only one of the several key elements in a policy environment that favored the recovery and growth of countries abroad. In the early postwar years and, for many observers, even in the sixties, it was unthinkable that the gold value of the dollar would change. Accordingly, entrepreneurs in foreign countries could feel assured that their competitive positions in dollar markets would not be impaired by devaluation of the United States currency. This, combined with the commitment of successive American administrations to the reduction of tariffs and other barriers to trade, gave foreigners strong encouragement to invest in capacity designed to produce not only for their domestic markets but also for export. Thus, the advantageous structure of prices along with expectations about stability in the gold value of the dollar and about commercial policy all created an international environment that facilitated rapid economic advance abroad. At the same time, this environment probably also contributed to the relatively low rate of business investment in the United States as well as to the attractiveness for United States corporations of direct investments abroad.

Although, in retrospect, the competitive advantage that the price structure of the fifties gave to countries abroad seems clear, it was less so to contemporaries.

[8] Irving B. Kravis and Robert E. Lipsey, *Price Competitiveness in World Trade* (New York: National Bureau of Economic Research, 1971) and "Export Prices and the Transmission of Inflation", *The American Economic Review* (February 1977), pages 156-57.

[9] In a perceptive note appended to a study of the United States balance of payments published in 1960, Theodore O. Yntema wrote: "On the basis of fragmentary evidence, it seems to me that our exchange rates are incompatible with the fundamental relation between costs of production here and abroad. The effects on our balance of payments resulting from the disparities in costs here and abroad are limited now by market imperfections—by lack of knowledge, inadequate procurement arrangements abroad by U.S. purchasers, and inadequate distribution systems here for foreign producers. In the future the effects of these disparities in costs will be felt increasingly as foreign capacities expand, as economies of scale in production and distribution of foreign products increase, as more U.S. know-how is exported, as U.S. procurement abroad becomes more efficient (and more extensive) and as distribution systems for foreign products in the U.S. improve . . .

"The balance-of-payments problem we have now results mainly from the phenomenal recovery and the great forward surge in productivity in the economies of Western Europe and Japan. This is cause for rejoicing. We should not be ashamed or afraid to make a readjustment in our exchange rates when it is necessitated by such good fortune. Price fixing (even in exchange rates) cannot long ignore the realities of costs. . . ." Committee for Economic Development, *National Objectives and the Balance of Payments Problem* (February 1960), pages 3-4.

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Table 8

Relative Prices of Traded and Nontraded Goods for Selected Countries, 1970 and 1973

Level of United States prices = 100

Country	Traded goods*		Nontraded goods*	
	1970	1973	1970	1973
Japan	83	112	52	75
Germany	100	139	63	91
France	93	119	65	82
Italy	93	110	53	64
United Kingdom	86	97	58	69

* Traded goods are defined to cover all commodities. Construction and all services are included under nontraded goods.

Source: Irving B. Kravis, *et al, International Comparisons of Real Products and Purchasing Power* (published for the World Bank by the Johns Hopkins University Press, 1978), page 126.

Table 9

Dollar Cost of Representative Baskets of Goods in Selected Foreign Countries

Cost of basket of goods in United States = 100

Country	1950	1955	1970	1973	1977	1978
Japan	50	*	67	94	103	127
Germany	72	70	82	116	121	135
France	74	95	80	101	103	114
Italy	67	69	73	87	84	92
United Kingdom	70	77	72	84	85	96

These estimates represent for each country the local currency cost, converted into dollars at the exchange rate of the relevant year, of representative baskets of goods that would cost $100 in the United States. The baskets reflect the whole range of goods and services in each country's gross domestic product.

* Not available.

Sources: Milton Gilbert, *et al., Comparative National Product and Price Levels* (Paris, Organization for Economic Cooperation and Development, 1958) pages 29-31, is source for 1950 and 1955 estimates for European countries; Michael Boretsky of the United States Department of Commerce provided the figure for Japan in 1950; Irving B. Kravis, *et al., International Comparisons of Gross Product and Purchasing Power* (Johns Hopkins University Press, 1978), page 21, provided the estimates for all countries for 1970 and 1973; for other years the estimates are based on the Kravis figures which are adjusted for changes in GDP deflators (from the Organization for Economic Cooperation and Development, *Main Economic Indicators)* and in exchange rates (from the Annual Statistical Digest of the Board of Governors of the Federal Reserve System).

In the early postwar years, indeed, the opposite impression prevailed. The competitive strength of the United States was regarded as unassailable; many expected that it would continue indefinitely as a chronic problem for other countries. Such impressions had some basis in fact. While reconstruction abroad was progressing, many countries still suffered severe shortages of coal, certain types of steel, and other industrial materials.[10] Many foreign firms still lagged far behind their United States competitors in technology and design. Basic materials and advanced American products were frequently bought almost regardless of price.[11] Consequently, quantitative restrictions were required abroad throughout the early postwar years to prevent dollar imports from exceeding the limits established by reconstruction and development programs and by foreign authorities' desire to rebuild their international reserves.

With the rapid recovery of economies abroad, the shortages and bottlenecks of the early postwar years gradually disappeared. By the midfifties, the industrial countries had removed most quantitative restrictions against imports of nonagricultural products from dollar sources. Their competitive strength justified them in doing so. True, prices in the United States generally rose more slowly in the decade ended 1963 than in the other industrial countries. However, although the price advantage enjoyed by foreigners was smaller than it had been in the early fifties, it was still significant in the midsixties. Thereafter, rising inflationary pressures growing out of the Vietnam war combined with devaluations by other countries—notably Britain in 1967 and France in 1969—shifted the relative price advantage further against the United States. Thus, on the eve of the breakdown of Bretton Woods, prices measured in dollars among most of our major competitors were still substantially lower than in the United States, although not so much as they had been twenty years before.

This disparity in prices between the United States and abroad was generally removed by the realignment of exchange rates during the seventies. In some cases, indeed, the opposite disparity developed, giving rise—as many American tourists have discovered—to substantially higher prices in such countries as Germany, Switzerland, and Japan than in the United States.

The question whether the exchange rate crises of the early seventies could have been avoided or, at least, mitigated is of course surrounded by contro-

[10] Hal B. Lary, *Problems of the United States as World Trader and Banker* (National Bureau of Economic Research, 1963), page 52.

[11] Geoffrey Crowther, *Balances and Imbalances of Payments* (Harvard Graduate School of Business Administration, 1957), page 46.

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versy. With major countries abroad catching up with the United States in capacity to produce technologically advanced goods, international monetary arrangements that had been appropriate in the early postwar years inevitably required modification. Even so, the necessary adjustments might have been achieved within the basic framework of the Bretton Woods arrangements had the major countries followed more appropriate policies. If, for example, the authorities had succeeded in maintaining inflation in the United States below that in other countries and also in providing greater stimulus to productive investment in American industry, the strengthening of this country's trade balance that occurred in the early sixties might not have been aborted. Likewise, if surplus countries such as Germany and Japan had been more willing to accept imports and/or to appreciate their exchange rates, the essentials of the par value system established at Bretton Woods might have survived. At least the adjustment crisis, when it came, would probably have been less severe and disruptive. In the absence of appropriate stabilization policies, however, a sharp depreciation of the dollar was probably the only practicable alternative by which to restore the external competitive position of the United States. But this gain came at the cost of an aggravation of inflation which, itself, added to the economic uncertainties and disturbances experienced later in the seventies.

Worsening terms of trade

Since 1969, increases in the dollar prices of United States imports have been substantially greater than those of exports, reversing the tendencies that prevailed during most of the fifties and sixties. Although this broad conclusion seems clear, measurement of the changes is more than usually imprecise because it depends on unit value indexes whose deficiencies are well known. Judging by these indexes, export prices were 151 percent higher in 1979 than they were a decade earlier, while import prices were up no less than 230 percent (Chart 3). The rise in import prices was primarily attributable to the devaluation of the dollar, to the huge jumps in oil prices, and to smaller, yet significant, increases in the cost of coffee, cocoa, and various other imported foods and raw materials. Since the volume of United States imports was about 75 percent larger last year than in 1969, our export volume would have had to rise 135 percent to achieve a merchandise trade surplus comparable to that of a decade earlier. In fact, the volume of United States exports increased some 93 percent over the period. Although this was no small accomplishment, the shortfall amounted to $33 billion, somewhat more than the merchandise trade deficit in 1979.

Increased dependence on imported oil

Increased dependence on imported oil was by far the largest single element in the worsening of the merchandise trade balance of the United States during the seventies. This increase went a long way toward setting the stage for the quadrupling of oil prices by OPEC in 1973 and for the previously noted deterioration of our terms of trade since that time. With rises both in the physical volume of oil imports and in prices, the value of the oil obtained from abroad in 1979 was $50 billion higher than it had been six years before, greatly exceeding the improvement in our balance of trade in other commodities over the same period.

Although oil became a subject of broad public concern only in 1973, the increase in United States dependence on imports of that commodity began a generation before. Early in the postwar period, the United States changed from a net exporter of oil to a net importer. Although domestic oil production rose in the fifties and sixties, domestic consumption grew even faster (Chart 4). Yet in 1970, when it peaked, domestic output still met 77 percent of United States consumption. Thereafter, however, the gap between domestic production and consumption widened dramatically.

A small part of this widening was attributable to declining production. Domestic petroleum supplies that could be exploited profitably at existing market prices were diminishing and even such exploitation was discouraged by Government price controls. Consequently, domestic oil production stopped rising in 1970, then declined until 1976, recovering only part of the drop when output from the North Slope of Alaska began to flow in 1977.

The bulk of the increase in net oil imports stemmed from rising domestic demand which, despite rising prices, was 25 percent higher in volume at the end of the seventies than at the beginning (Chart 4). By the close of the decade, almost half of United States consumption of petroleum was being met from abroad, compared with 23 percent in 1970 and only 11 percent in the early fifties.

The international economic position of the United States was adversely affected, not only by increased dependence on imported oil, but also because this country was perceived to be dealing less successfully with the oil problem than other major countries. It is true that, in the late seventies, most major countries abroad remained dependent on imported oil for a larger proportion of their energy needs than the United States (Table 10). Consequently, such countries as France, Germany, Italy, and Japan were more exposed to the uncertainties of the international oil market. For

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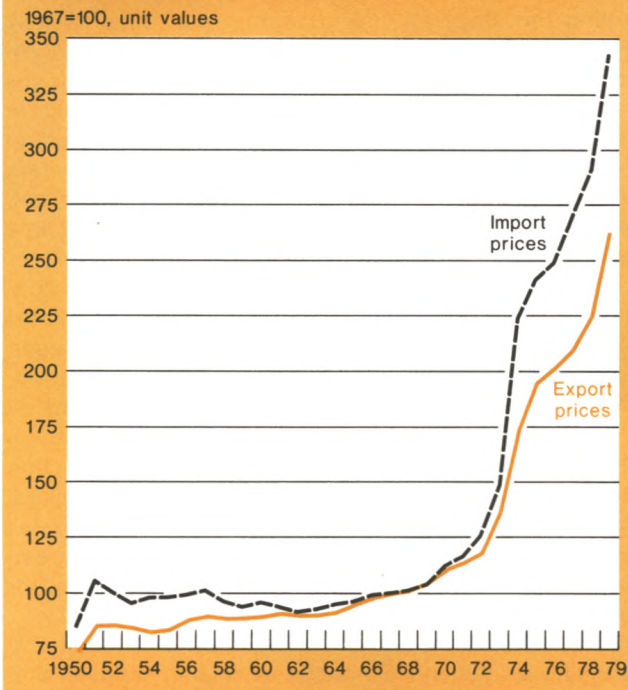
Chart 3

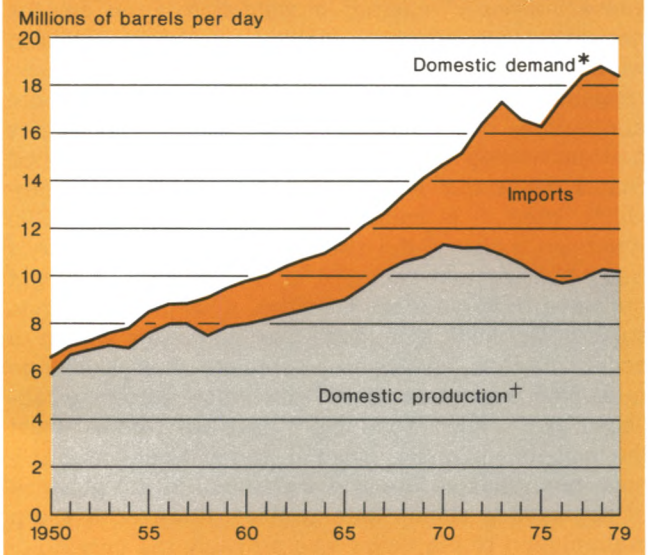
Prices of Exports and Imports of the United States



Source: International Monetary Fund.

Chart 4

United States Petroleum Supply and Demand



*Includes changes in reported private stocks and in Strategic Petroleum Reserve.

†Includes natural gas liquids.

Source: Data for 1950-74 from American Petroleum Institute, Basic Petroleum Data Book (Washington, D.C., 1977); data for 1975-79 from Department of Energy, Monthly Energy Review.

Table 10

Dependence on Net Petroleum Imports* of Major Countries, 1973-79

Country	Millions of barrels per day			Percentage of total energy requirements		Ratio to real GNP† (1973 = 100)	
	1973	1978	1979	1973	1978	1978	1979
United States	6.0	8.0	7.8	17	22	118	112
Japan	5.5	5.3	5.6	83	73	80	80
France	2.6	2.2	2.4	71	59	73	77
Germany	2.9	2.7	2.8	55	53	84	84
Italy	2.1	1.9	2.0‡	79	69	81	81
United Kingdom	2.3	0.9	0.4	52	20	37	16

* Net imports of petroleum and petroleum products.

† GDP for France, Italy, and United Kingdom.

‡ January-September.

Sources: Central Intelligence Agency, *International Energy Statistical Reivew*, April 23, 1980, pages 9-11; International Energy Agency, *Energy Balances of OECD Countries, 1974/1978*, pages 149-50; and International Monetary Fund, *International Financial Statistics*.

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this reason, perhaps, the pressure to reduce dependence was felt more keenly abroad than here. In any event, dependence on imported oil declined significantly in most of the major countries abroad in the five years following the OPEC shock. In contrast, despite last year's dip in domestic demand, United States dependence on imported petroleum was substantially greater at the close of the decade than in 1973.

The failure to deal successfully with its oil problem undermined the United States international economic position in several ways. At the most basic level, America's voracious appetite for petroleum was, as already noted, the largest force expanding imports. In addition, it pushed up oil prices not only for the United States but for the world at large. Such upward pressure on prices was tolerable for a time because the process of adopting an effective energy program inevitably involved prolonged debates, negotiations, and compromises within the political arena. By the late seventies, however, the time for decisive action was long past. By then, the failure to adopt an energy program designed substantially to reduce dependence on imported oil suggested that America had not faced the realities of the country's vulnerability to shocks from unstable foreign sources of petroleum. Viewed from abroad, America was perceived, not as a leader in dealing with the international oil problem but as unwilling or incapable of responding to the challenge from OPEC. Resistance to the adoption of effective energy policies thus undermined the Government's efforts both to reduce the trade deficit as well as to enlist the cooperation of other major countries in dealing with a variety of other international concerns.

Two illustrations may be given of the way in which the international economic position of the United States was injured by the inadequacies of cooperation. Despite the declared intentions of the major countries to curb oil imports,[12] the prospect of inadequate supplies and of rising prices in 1979 induced buyers to build up oil inventories, in some cases to the limits of storage capacity. Such precautionary buying, undertaken by many countries, drove up oil prices in the spot markets and so contributed to the enlargement of the United States deficit. In addition, the inflation of oil prices complicated the efforts of the United States authorities to support the dollar in the exchange markets, not only because of the widening of the trade deficit but also because market participants feared that other countries might pursue exchange market policies incompatible with our own. More specifically, foreign countries, faced with increases in the dollar price of oil, might better resist inflation in their economies if their exchange rates were allowed to appreciate against the dollar. Indeed, such tendencies added to other domestic and international pressures that induced the United States monetary authorities to play a relatively enlarged role during 1979 in the conduct of official intervention in dollar exchange markets.

The continental economy of the United States

The continental market is a mixed blessing for the international economic strength of the United States. It is advantageous because it provides American firms with huge potential demand for their output. Long production runs and economies of scale are therefore possible. However, these very advantages are in some ways a handicap in international trade. Although there are notable exceptions, many American firms feel little incentive to venture into uncertain foreign fields because their capabilities are adequately, and frequently fully, occupied in the domestic market. In contrast, firms in many foreign countries—especially the smaller ones—can secure long production runs and economies of scale only by exporting to world markets. Such firms are therefore more willing than their potential American competitors to seek out foreign customers aggressively, to learn their languages, to tailor their products to foreign tastes, and to provide after-sales service.

This gap between the performance of American and foreign firms was especially wide in the early postwar years when the prestige of the United States products was unsurpassed—when, indeed, some were virtually the only ones of their kind available. American firms had no need to search foreign markets for customers; buyers came to America. However, the complacency of many American firms tended to outlast their competitive strength. The recovery and growth of countries abroad was based on rising sales, not only in domestic but also in foreign markets. In capturing such markets, these countries frequently had the advantages of currencies that were undervalued against the dollar, at least until 1973. Although this advantage receded during the seventies and the United States was exporting a greater proportion of its output, most American firms still have a long way to go before they match the efforts of their foreign competitors in world markets.

Barriers to trade

Trade barriers are a long-standing problem for American exporters. They consist not only of tariffs and quantitative restrictions but also of various other devices, including Government regulations designed ostensibly to protect the health and safety of buyers.

[12] Declaration of June 29, 1979 at the Economic Summit in Tokyo, United States Department of State *Bulletin* (August 1979), page 8.

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Table 11

Ratios of Imports of Manufactured Goods to Gross National Product

Annual or annual averages

Year	United States	Germany	Japan	Canada	United Kingdom	France
1960	1.3	5.8	2.3	10.1	5.5	3.9
1966-72	2.5	8.4	2.4	13.3	8.4	7.3
1973-79	4.0	10.8	2.5	16.0	14.5	10.3*

* 1973-78.

Source: United States Department of Commerce, *International Economic Indicators*.

The incidence of all these barriers was most severe in the early postwar years, when most foreign countries were attempting to employ their limited dollar resources for priority purposes, including the rebuilding of their international reserves. As foreign countries gained in economic strength, many barriers were removed or reduced, particularly as the result of successive rounds of multilateral trade negotiations. However, some of the gains were offset by the erection of other barriers, notably the external tariff of the EC which discriminates against imports from nonmember countries and in favor of the products of certain ex-colonial countries. EC restrictions against agricultural imports—where the competitive strength of the United States is great—are especially severe. Elsewhere, protective devices, established on infant industry grounds by developing countries and by Japan, have remained in effect long after the infants became hardy young giants. The case of Japan is especially notable because of the difficulty that American firms have experienced in penetrating its market. The problem is illustrated by Table 11 which shows the ratio of imports of manufactured goods to GNP in the major countries. This ratio increased significantly during the sixties and seventies in all major countries except Japan, where it stayed virtually flat. It remains to be seen whether the reduction of barriers achieved under the recently concluded multilateral trade negotiations will increase the accessibility of the Japanese market to foreign products.

Conclusion

Just as the problems of the United States balance of payments arose from developments both in this country and abroad, so the correction of these problems involves the adoption of appropriate policies here and in other major countries. Inevitably, the prime responsibility falls on the United States. The task is formidable but probably not more so than a number of earlier payments adjustments successfully accomplished by other major countries. In some of these earlier instances, once vigorous corrective measures were adopted, the shift from external weakness to strength came with dramatic rapidity.

Insofar as the responsibility of achieving such a correction falls on the United States, the broad aims of policy are simply stated. The transfer gap must be narrowed to the point where foreign monetary authorities are accumulating no more dollars than they wish. Conceivably, they might wish, not to increase their dollars, but to run them down. In this case, the United States would need to absorb official dollars from abroad by running a surplus on goods and services that exceeded its financial outflows. However, it seems likely that, were the United States to adopt a vigorous and sustained adjustment policy, the appetite of foreign monetary authorities for dollars would strengthen. For purposes of exposition, this analysis takes the middle position, assuming that adjustment policies result over the longer term in the elimination of the transfer gap through some combination of reduced financial outflows and increased surpluses on goods and services.

Without going into detail on how to accomplish such an adjustment, some general pointers for policy are in order. The adjustment of the United States balance of payments calls for both medium- and longer term measures. For the medium term, fiscal and monetary measures are required to restrain domestic spending and thus make available an enlarged proportion of output for sales abroad. For the longer term, a strengthening of policy in at least two major fields is required. A great deal remains to be done to conserve energy use as well as to develop domestic energy supplies in order to reduce significantly this country's dependence on foreign sources of petroleum, especially from the Middle East. In addition, a substantial increase is required in the proportion of output devoted to productive

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investment not only to increase the country's energy independence but also to strengthen the competitiveness of United States goods in domestic as well as foreign markets. Since such enlarged investment should be financed from noninflationary sources, a corresponding increase in the proportion of saving to GNP is also required. In short, policy should be directed toward reducing the proportion of GNP devoted to personal consumption and government so that the proportion allocated to domestic investment and net exports of goods and services can be increased.

Even if adjustment policies could be precisely specified, it would, of course, not be possible accurately to predict their effects on the balance of payments. However, it may be useful, for illustrative purposes, to compare one hypothetical outcome with the actual situation in the late seventies. Thus, the transfer gap might be eliminated through a decline in financial outflows to 1 percent of GNP, matched by an equivalent surplus on goods and services. This compares with *actual* financial outflows averaging 1.3 percent of GNP in the two years 1977-78 and *actual* deficits on goods and services averaging 0.45 percent.

As events developed, the strengthening of United States external payments in 1979 accomplished almost half of the hypothesized adjustment for goods and services and far overshot that for financial flows. The balance on goods and services swung to a $5.3 billion surplus, equal to 0.22 percent of GNP, from the substantial deficits of the two previous years. As already noted, financial movements shifted from the outflows that had previously been characteristic to substantial inflows in 1979—with large inward movements both in the early months of the year and in the final quarter, partially offset by outflows only during June-September.

Unfortunately, past experience cautions against premature rejoicing over last year's strengthening in the United States external position. The improvement was based to an uncomfortably large extent on temporary factors, most notably the substantial depreciation of the dollar in earlier years, the more rapid growth of major countries abroad in 1979 than of the United States, and the relative tightness of monetary conditions here. If shifts from balance-of-payments weakness to strength can occur with surprising rapidity, so too can shifts in the opposite direction. Financial outflows virtually disappeared in 1969 under the pressure of stringent monetary conditions in the United States, but then ballooned when monetary policy relaxed during the 1970 recession. Similarly, the surplus on goods and services rose to a record high in the recession year 1975, only to give way to the heavy deficits of 1977 and 1978. Clearly, these earlier swings, combined with recognition of the role that temporary factors played in last year's improvement in America's external position, underline the need for fundamental measures designed to stimulate saving and productive investment and to decrease dependence on foreign energy supplies. While some steps in these directions have already been taken, additional vigorous measures are required to hold as much as possible of the ground gained in 1979 and to provide an enduring foundation for America's external strength.

Viewed from a longer term perspective, the task that now confronts the United States is in some ways similar to that which faced foreign countries in the early postwar years. The need then, as now, was to redirect resources into productive investment in order to redress the imbalance in the international economy and to provide the basis for higher standards of living. In the early postwar years, it was the destruction and neglect of hostilities that had to be made good so that countries abroad could compete on more equal terms with the United States. Now, the earlier imbalances have long since been corrected but others have taken their place. For a generation or more, the proportion of GNP devoted to productive investment in major foreign countries has been far above that in the United States. As a result, technology in some American industries trails that of their foreign rivals and a growing proportion of many goods consumed by Americans is produced not in this country but abroad. This penetration of the American market, while generally beneficial to consumers, has not always elicited a positive response from producers. Some, like those in textiles, have revitalized their industries to meet foreign competition. In contrast, others have sought various forms of Federal protection. Against this contingency, foreign firms have sometimes found it desirable to locate production facilities in the United States. In doing so, they followed the earlier example of American firms that established subsidiaries abroad in order to surmount foreign barriers against imports. Likewise, the increased competitiveness of American wages and other attractions seen by foreign firms in this country's labor market during the seventies are reminiscent of similar attractions that induced United States firms to invest abroad in the fifties and sixties. The transfer of advanced technology and managerial know-how has thus become two-way. Benefits that the rest of the world obtained from international direct investments in the earlier postwar years are now being shared by the United States.[13]

Although the similarities are clear, handling the task

[13] See Dorothy B. Christelow, "International Policies toward Foreign Direct Investment", this *Quarterly Review* (Winter 1979-80), pages 21-32.

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that confronts the United States is in many ways more difficult than that which faced policymakers abroad after World War II. At that time, the penalties for failure were stark: low living standards, hunger, and always the threatened loss of political independence. Now, the penalties for the United States—even when they are recognized—seem less compelling: a drop in American living standards below those of the most advanced industrial countries and declining influence in the world political arena. Clearly, the motivation for economic discipline and international cooperation was far stronger thirty years ago than now. Moreover, the United States—the dominant economy in the early postwar years—had a clear view of its role: to stimulate and to assist in the reconstruction of a prosperous and integrated world economy. Today, leadership is divided among a number of major industrial and oil-rich countries which—while generally agreeing on the desirability of an open, stable, and expanding international economy—frequently differ about the most desirable means to attain these objectives.

Yet another handicap is that, with most countries struggling to reduce inflation and to adjust to sharply rising oil prices, the prospects for economic growth are far less bright than a generation ago. In the 1950s and 1960s, shifts from external weakness to strength were facilitated by widespread and rapid economic growth as well as by the progressive reduction of trade barriers—itself a development that was heavily dependent on the prosperity of the world economy. If growth does indeed slacken significantly in the 1980s, the accommodation of a significant and lasting shift from deficit to surplus in the United States balance on goods and services may well present difficult problems to foreign countries. Such difficulties would be likely to test the ability of the authorities both here and abroad to work together in handling mutual problems and to avoid further serious slippage into protectionism.

By the same token, slackening growth, combined with an increase in the attractiveness of the United States economy for long-term investors, would further complicate the financial problems of debtor countries abroad at a time when their borrowing needs are likely to be rising. In this area, accommodation of the required adjustment in the United States external position calls for a further loosening of restrictions on capital outflows from major financial centers abroad to reduce the excessive dependence of foreign borrowers on dollar markets. Clearly, the accommodation could also be facilitated by such institutions as the International Monetary Fund and the World Bank. While their resources will doubtless be adequate to meet appropriate borrowing needs in the immediate future, further substantial increases in their lending capacities are likely to be required in the years ahead.

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The Pricing of Syndicated Eurocurrency Credits

In recent years the syndicated Eurocurrency bank loan has become one of the most important instruments for international lending. These publicly announced loans have grown rapidly, totaling over $80 billion in 1979, and now comprise approximately half of all Eurocurrency credits. Syndicated credits are an important pillar in the recycling process whereby surpluses from oil-exporting countries (in the form of deposits) are channeled to oil-importing countries (in the form of loans) to finance their deficits.

The pricing of syndicated Eurocurrency credits is a subject of particular interest to banks and their supervisors. The loans are generally priced as a spread over the interbank interest rate in the Euromarkets. The interest rate paid by the borrower is adjusted every three or six months as market rates vary. Spreads for all borrowers have narrowed sharply from those prevailing in 1974-75, while maturities have lengthened. There are concerns that, at the rather narrow spreads currently prevailing (⅜ to 1½ percent, depending on the borrower), these loans may not yield an adequate return on bank capital after adjusting for risk and expenses. To the extent that this is true, the capacity of commercial banks to continue to play an important role in recycling could be impaired.

This article investigates the pricing of syndicated loans. It examines the factors which analytically should be important and empirically are important in determining the spread. The paper does not attempt to hypothesize whether the spreads are in some sense correct or reasonable; instead, it concentrates on the events and influences that have contributed to the currently narrow spreads.

An overview of the sydicated loan market

A syndicated credit is a loan in which a group of financial institutions makes funds available on common conditions to a borrower. This type of lending commonly occurs in both the Eurocurrency market and in the United States domestic market, although in the latter it is a bit less frequent and is done under slightly different institutional arrangements. In the domestic market, as a normal part of business practice, a corporation will usually have a banking relationship with a number of institutions. If the corporate borrower needs more funds than a single bank can or will provide, rather than opting for a syndication the borrower will often draw down its credit lines at other banks, sometimes at less favorable terms. By contrast, in the Eurocurrency market, if a given borrower needs a large amount of funds, a syndicate will usually be formed and all banks in the syndicate will participate in the loan on the same terms.

Growth and development of the market

The syndicated Eurocredit is a relatively new market development dating from the late 1960s. Prior to this innovation, large Euromarket financings were all in the form of Eurobonds. Bank credits were, just as now, priced as a percentage over the interbank interest rate but were issued by a single bank. Hence, the size of the credits were constrained by the prudent lending limits of the bank. Using the syndication mechanism, credits of over $1 billion have been handled with relative ease.

Since its inception, the market has grown rapidly from $4.7 billion in 1970 to $82.8 billion in 1979 as

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shown in the table. This twentyfold increase does not all represent new money being made available, since there were considerable refinancings in 1978 and 1979 when spreads narrowed. Nonetheless, the growth is impressive. Syndicated credits now provide somewhat more than half of the medium- and long-term borrowings in international capital markets. (Eurobonds and foreign bonds account for the rest.) However, they accounted for more than 85 percent of the medium- and long-term funds for developing countries and 98 percent for centrally planned economies in the 1973-79 period.

In the wake of successive oil price increases and the resulting balance-of-payments deficits for most nonoil-producing less developed countries (LDCs), the Eurocurrency market allows for recycling of funds to many governments that have little or no access to other international capital markets. The relative share of non-OPEC (Organization of Petroleum Exporting Countries) LDC borrowing follows very closely the pattern of aggregate current account deficits of these countries. Non-OPEC LDCs accounted for 21 percent of the market in 1972-73, rising to 39 percent in 1975, dropping to 32 percent by 1977, and rising again to 43 percent in 1979. The aggregate deficit for non-OPEC LDCs was approximately $7 billion in 1972-73, rising to $32 billion by 1975. As a result of the declining real price of oil, and the recovery of the developed countries from the 1974-75 recession, the aggregate deficit declined to $14 billion in 1977. But for 1979 the aggregate deficit is estimated at about $35 billion and is projected to go up to about $50 billion-$55 billion in 1980.

The Communist countries have also increased their commercial bank borrowing dramatically since 1972-73. The bulk of this borrowing has been done by East Germany, Hungary, and Poland. It was widely believed that the Soviet invasion in Afghanistan early this year would adversely affect the borrowing ability of the Communist countries. So far the evidence is inconclusive. Rumania and Hungary recently borrowed on terms which, taking into account market conditions, are no different from those they would have obtained in 1979. However, the volume of loans to Eastern bloc countries is much lower than in previous years.

Up until late 1979, OPEC countries were also active borrowers in the Eurocredit market. The bulk of the OPEC borrowing was done by the group of countries known as high absorbers, those with current account deficits and small current account surpluses. The low-absorbing group, consisting of the countries with the massive current account surpluses, namely, Saudi Arabia, Kuwait, Libya, Qatar, and the United Arab Emirates, do relatively little of the borrowing. OPEC borrowing is used primarily to finance energy-related and other development projects.

As the syndicated loan market has matured, it has become much less concentrated. While in 1970 the top ten borrowers accounted for 84 percent of total Eurocredits, by 1974 this figure had declined to 66 percent and by 1979 was only 54 percent (Chart 1).

Syndicated Eurocredits comprise only about half of Eurocurrency bank lending. The other 50 percent is lent by individual banks, is not publicized, and is contracted for a shorter maturity than its syndicated counterpart. These credits are primarily to the private sector for trade financing or internationally related business loans.

Why are syndications so prevalent in the Eurocurrency market?

Syndicated Eurocredits have emerged as a popular

New Syndicated Eurocurrency Bank Credits

In billions of dollars

Group	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	January-April 1980
Total	4.7	4.0	6.8	21.9	29.3	21.0	28.8	41.8	70.2	82.8	18.4
Industrialized countries	4.2	2.6	4.1	13.8	20.7	7.3	11.3	17.4	29.1	27.5	9.2
Non-OPEC LDCs	0.3	0.9	1.5	4.5	6.3	8.2	11.0	13.5	26.9	35.4	4.9
OPEC countries	0.1	0.4	0.9	2.8	1.1	2.9	4.0	7.5	10.4	12.6	3.1
Communist countries	0	0.1	0.3	0.8	1.2	2.6	2.5	3.4	3.8	7.3	0.8

Because of rounding, figures may not add to totals.

Source: Morgan Guaranty Trust Company, *World Financial Markets*.

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vehicle for international lending because they contain advantages from the point of view of both lenders and borrowers. From the lenders viewpoint, the syndication procedure is a means for banks to diversify some of the unique risks that arise in international lending. In part, these risks reflect the heavy concentration of public-sector borrowers in the market. Information compiled by the World Bank since 1975 indicates that credits to the public sector comprise approximately 75 percent of the syndicated lending.

The legal protection available to a bank is much different if a private borrower defaults as opposed to the case in which a public borrower defaults. If a private borrower defaults or otherwise fails to fulfill the obligations stipulated in the loan agreement, creditors can pursue various legal remedies. There is a considerable legal framework in each country to safeguard the claims of creditors if a borrower has declared bankruptcy. When commercial banks lend to public-sector borrowers, there is much more uncertainty about legal recourse. For instance, there are questions about which public-sector borrowers are covered by sovereign immunity.

There also are special political uncertainties, including the risk, however remote, that a public-sector borrower will choose not to repay loans from individual banks or a group of banks in a particular country. The syndication process tends to magnify the penalty associated with selective defaults. In the case of a widely syndicated loan from banks in several nations, unwillingness to repay debts could effectively preclude the borrower from entering the credit market in the future. It would be surprising if a lender in the earlier syndicate would be willing to participate and other lenders would be reluctant. In addition, unwillingness to repay debts would bring political pressure from several countries as opposed to only one or two.

In addition to developing syndication procedures, banks have taken other steps to protect themselves against these risks. For example, the risk of selective default on credits encourages banks to include a cross-default clause in the loan agreement. This clause states that, if one public borrower from a country defaults, the loans of other public borrowers from that country may be called into default as well. In that case, the loans of those borrowers become due and payable.

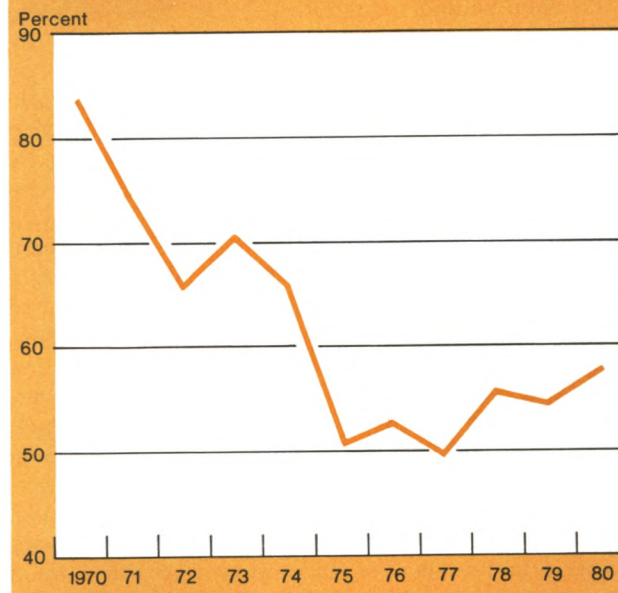
To recapitulate, syndication of public credits allows banks to reduce risk in two ways. First, it allows banks to diversify their loans to the public sector, which is more essential than with loans to the private sector due to the banks' lack of control over and protection against default by sovereign entities. Second, it provides more protection against selective defaults.

The syndication procedure is advantageous from the lenders' viewpoint as it allows different-sized banks to function in the market simultaneously. That is because a Eurocurrency loan is underwritten by a small group of banks who resell portions of the loan to other banks. The larger banks can underwrite a loan and earn underwriting fees. Smaller banks can simply purchase participations from the underwriting banks.

From the borrowers' viewpoint, syndication allows for the efficient arrangement of a larger amount of funds than any single lender can feasibly supply. This factor is crucial in explaining the popularity of shared credits in both the domestic market and the Eurocurrency market. In the latter, however, syndicated lending becomes less of a convenience and more of a necessity. The financing needs imposed by the recycling process, coupled with the lack of alternative financing arrangements in the Eurocurrency market, create the demand on the part of borrowers for huge bank loans. In the United States domestic market, if a business needs a large amount of long-term funding, bank loans are only one, albeit often the most viable, of several options. The firm may also arrange for debt or equity financing. In external markets, however, there are fewer options. Industrial country borrowers,

Chart 1

Percentage of Syndicated Eurocredit Market Captured by the Top Ten Borrowers



Source: Morgan Guaranty Trust Company, World Financial Markets.

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both governmental and private, may have access to the international bond markets, but LDC borrowers by and large do not. The only alternative source of financing for the latter group is the syndicated Eurocredit market.

The underwriting procedure used in the syndication of Eurocurrency credits may allow the borrower to obtain better terms than those that would otherwise be available. The syndicated credit is essentially a hybrid instrument, a cross between traditional bank lending and the underwriting function of investment banking. By underwriting, major banks show their confidence in the credit, thereby making it more attractive to smaller financial institutions. This blending of the investment banking and commercial banking functions is prohibited in many national markets including the United States, Japan, and Italy. In recent years, however, there has been some blurring of these activities in the United States. There are several examples of commercial banking practices which are not strictly speaking underwriting activities but which involve syndication procedures. Moreover, municipal debt is often underwritten by commercial banks. In the London market, where a majority of the Eurocurrency syndications are arranged, underwriting is standard for both commercial banks and their merchant banking affiliates. These affiliates operate much like investment banks in the United States.

The syndication procedure[1]

There are generally three levels of banks in a syndicate: the lead banks, the managing banks, and the participating banks.[2] Most loans are led by one or two major banks who negotiate to obtain a mandate to raise funds from the borrower. Often a potential borrower will set a competitive bidding procedure to determine which lead bank or banks will receive the mandate to organize the loan.

After the preliminary stages of negotiation with a borrower, the lead bank will begin to assemble a management group to underwrite the loan. The management group may be in place before the mandate is received, or may be assembled immediately afterward, depending on the loan. The lead bank is normally expected to underwrite a share at least as large as that of any other lender. If the loan cannot be underwritten on the initial terms, it must be renegotiated or the lead bank must be willing to take a larger share into its own portfolio than originally planned.

Once the management group is firmly in place and the lead bank has received a mandate from the borrower, a placement memorandum will be prepared by the lead bank and the loan will be marketed to other banks who may be interested in taking up shares (the participating banks). This placement memorandum describes the transaction and provides information about the borrower. The statistical information regarding the financial health of the borrower given in the memorandum is generally provided by the borrower. The placement memorandum emphasizes that reading it is not a substitute for an independent credit review by the participating banks. Bank supervisory authorities normally require sufficient lending information to be lodged in the bank to allow bank management to make a reasonable appraisal of the credit.

In a successful syndication, once the marketing to interested participants is completed, the lead and managing banks will keep 50 to 70 percent of their initial underwriting share.

Not all credits are sold to participants. In smaller credits to frequent borrowers, club loans are often arranged. In a club loan the lead bank and managers fund the entire loan and no placement memorandum is required. This type of credit is most common in periods of market uncertainty when all but the largest multinational banks are reluctant to do business.

It takes anywhere from fifteen days to three months to arrange a syndication, with six weeks considered the norm. Generally speaking, the more familiar the borrower, the more quickly the terms can be set and the placement memorandum prepared; the smaller the credit, the shorter is the time needed for negotiating and marketing.

After the loan is arranged, one of the banks serves as agent to compute the appropriate interest rate charges, to receive service payments, to disburse these to individual participants, and to inform them if there are any problems with the loan. The lead bank usually serves as agent, but another member of the management group may do so.

The most common type of syndicated loan is a term loan in which the funds can be drawn down by the borrower within a specified period of time after the loan agreement has been signed (the drawdown period). The loan is usually repaid according to an amortization schedule, which varies from loan to loan. For some loans it may begin as soon as the loan is drawn down. For other loans, amortization may not begin until as long as five years after the loan agreement has been signed. The period before repayment of principal begins is known as the grace period. This is one of the most

[1] A more detailed description of the syndication procedure can be found in an article by Henry Terrell and Michael G. Martinson, "Market Practices in Syndicated Bank Euro-currency Lending", *Bankers Magazine* (November 1978).

[2] In some of the larger credits, there are four or more levels of banks: the lead banks, the co-managers, the managing banks, and one or more levels of participating banks. The co-managing banks underwrite more than a prespecified amount of funds.

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important points of negotiation between a borrower and a lead bank, and borrowers are normally willing to pay a wider spread in order to obtain a longer grace period.

Another type of loan less frequently used is a revolving credit. The borrower is given a line of credit which can be drawn down and repaid with more flexibility than the term loan. The borrower must pay a fee for the undrawn portion of the credit line.

The vast majority of syndicated credits are denominated in dollars, but loans in German marks, Swiss francs, Japanese yen, and other currencies are also available.

The pricing of syndicated loans

Interest on syndicated loans is usually computed by adding a spread to the London interbank offer rate (LIBOR). LIBOR is the rate at which banks lend funds to other banks operating in the Euromarket. Occasionally, however, a loan may be priced as a spread over the United States prime rate. Less frequently, pricing is done both as a percentage over LIBOR and over the United States prime rate; the banks have the option to shift from LIBOR to prime pricing at their discretion. Pricing over the United States prime rate occurs when the syndicate is comprised primarily of United States banks who prefer to book the loan out of their head office rather than at an offshore branch. Strictly speaking, dollar loans booked in the United States are not Eurocurrency loans. However, these loans may be organized by offshore merchant bank subsidiaries.

The spread is negotiated with the borrower at the outset and either remains constant over the life of the loan or changes after a set number of years.[3] For example, a fifteen-year loan was recently syndicated at a spread of ⅜ percent over LIBOR for the first five years, ½ percent for the next five years, and ⅝ percent for the last five years. Loans priced over the United States prime rate generally carry a spread of ⅛ to ¼ percent less than loans priced over LIBOR.

The LIBOR is changing continuously. However, the rate on any particular loan is readjusted only every three or six months. This is known as pricing on a rollover basis. The borrower is usually given the choice between a three-month or a six-month readjustment period. A six-month period is normally selected because in a period of generally rising interest rates, as had been the case until recently, it is desirable for a borrower to lock in rates for as long a period as possible. The new base rate is calculated two days prior to the rollover date as the average of the offer rates of several reference banks in the syndicate. The reference banks are carefully specified in the loan agreement.

The spread above the LIBOR paid by the borrower understates the bank's actual return on a loan. The LIBOR is generally ⅛ to ¼ percent above the rate at which banks purchase funds from large depositors (the bid rate). The London interbank bid (LIBB) rate is roughly equal to the interest rate on certificates of deposit (CDs) in the United States domestic market, adjusted for reserve requirements. In some situations the bid rate may even exaggerate the cost of funds to Eurobanks. The main example of this occurs when a single depositor (or group of closely related depositors) already hold significant funds in the bank and would like to deposit more.

Other fees

In addition to the interest costs on a Eurocurrency loan, there are also commitment fees, front-end fees, and occasionally an annual agent's fee. Commitment fees are charged to the borrower as a percentage of the undrawn portion of the credit and are typically ½ percent annually, imposed on both term loans and revolving credits. Front-end management fees are one-time charges negotiated in advance and imposed when the loan agreement is signed. Fees are usually in the range of ½ to 1 percent of the value of the loan.[4] These front-end fees include participation fees and management fees. The participation fees are divided among all banks in relation to their share of the loan. The management fees are divided between the underwriting banks and the lead bank.[5] The agent's fee, if applicable, is usually a yearly charge but may occasionally be paid at the outset. These fees are relatively small; the agent's fee on a large credit may run $10,000 per annum.

To protect their margins, banks require all payments of principal and interest to be made after taxes im-

[3] An innovation in the pricing of syndicated credits has recently surfaced: a loan with a floating spread. This novel mechanism is being tested for a relatively small loan. For the first year the spread was set at ⅞ percent over LIBOR, but after the first year the floating concept takes over. Each year the banks in the syndicate will quote a spread based on their assessment of what the market would require of the borrower if it was to seek a loan for the amount and maturity outstanding. The actual spread will be a weighted average of the quotes, with a maximum of 1⅜ percent and a minimum of ⅝ percent. If the borrower objects to the spread quoted by the banks, he has the option of repaying the loan without notice.

This floating rate spread has advantages for both borrower and lenders. The borrower will benefit because each requote will be for a shorter maturity, that is, seven years in twelve months, six years in twenty-four months, *etc.* Lenders, on the other hand, can adjust the spread if the creditworthiness of the borrower changes. In addition, the lenders will be in a position to take advantage of any widening of spreads that may occur in the market.

[4] Borrowers are sometimes willing to pay higher fees in return for a lower spread on the loan.

[5] See Terrell and Martinson, *loc. cit.*, for a more complete description of the method by which the front-end fees are divided among the financial institutions.

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posed in the borrower's country have been paid. If those taxes are not creditable against the banks' home country taxes, the borrower must adjust his payments so that the banks receive the same net repayment. The decision as to whether the borrower or lender absorbs any additional taxes imposed by the country in which the loan is booked is negotiated between the parties.

Also, usually inserted is a reserve requirement clause, stipulating that an adjustment will be made if the cost of funds increases because reserve requirements are imposed or increased. This clause was invoked for loans booked in the home office of United States banks when marginal reserve requirements were imposed in late 1979.

There is generally no prepayment penalty on Eurocredits. In 1978 and 1979 when spreads narrowed, many borrowers chose to refinance the loans initially obtained in 1975 and 1976 at a higher spread. Banks then tried to impose prepayment penalty clauses on new loans, but borrowers were reluctant to go along with these. At least for the moment, banks have backed off because prepayment penalties have little relevance in a period of low spreads.

The charges on syndicated loans may be summarized as follows:

Annual payments = (LIBOR + spread) × amount of loan drawn
+ (Commitment fee) × amount of loan undrawn
+ tax adjustment (if any)
+ Annual agent's fee (if any)

Front-end charges = participation fee × face amount of loan
+ management fee × face amount of loan
+ initial agent's fee (if any)

Front-end changes are an important component of the banks' total return on a credit. Consider a $100 million seven-year credit with no grace period. If the loan is priced at 100 basis points over a LIBOR of 10 percent, annual payments of interest and principal repayment total slightly over $21 million. A 1 percent fee requires that $1 million be paid to the banks in the syndicate at the outset. This raises the effective interest to the borrower from 11 percent to 11.31 percent per annum. If banks' paid, on average, 9.75 percent for their funds, the front-end fees increase their margin on the loan from 125 basis points to 156 basis points. This represents a 25 percent increment to their return on a credit.

Trends in spreads and maturities

The history of syndicated credits may be divided into four periods, two "borrowers markets" and two "lenders markets" depending on terms and conditions. During borrowers markets, spreads were low and maturities were long—attractive terms from the point of view of the borrowers. During lenders markets, the situation was reversed.

- Lenders market, 1970 to late 1972
- Borrowers market, late 1972 to mid-1974
- Lenders market, mid-1974 to mid-1977
- Borrowers market, mid-1977 to present.

This division is depicted in Chart 2 where a time series for spreads and maturities from 1972 through the third quarter of 1979 is shown for the four major groups of borrowers: industrialized, OPEC low absorbers, high-income developing, and low-income developing.[6] Information on loans syndicated prior to 1972 are not available on a basis consistent with later data.

The lenders market from 1970 through late 1972 is best characterized as a period of market development. Spreads remained relatively constant during 1970 and 1971, and many borrowers entered the market for the first time.

By mid-1972, lenders had developed confidence in the market, credit volume rose, spreads began to narrow, and maturities lengthened. Bullet loans—credits in which there is no amortization over the life of the loan and the principal is entirely repaid at maturity—made their debut in the market during this period. This borrowers market continued until the Herstatt collapse in June 1974. The market bottomed out in mid- to late 1973. In the third quarter of 1973, weighted average spreads for the industrialized and high-income developing countries were 0.68 and 0.93 percent, respectively, coupled with maturities of nine and eleven and a half years. After the quadrupling of oil prices, there was a small but perceptible tightening of terms, as loan demand outstripped the supply of funds at the record low spreads. Even so, by the summer of 1974, spreads were low and maturities were averaging about eight and a half years.

All this changed, however, after the failure of Bankhaus Herstatt and the subsequent demise of Franklin

[6] This classification scheme is similar to the one used by the World Bank. High-income developing countries are those the World Bank classified as high, upper, and intermediate middle developing at the end of 1978. Low-income developing countries are those the World Bank classified as lower middle developing as well as lower developing at end-1978. Industrialized and oil-exporting countries correspond to the World Bank group with those titles.

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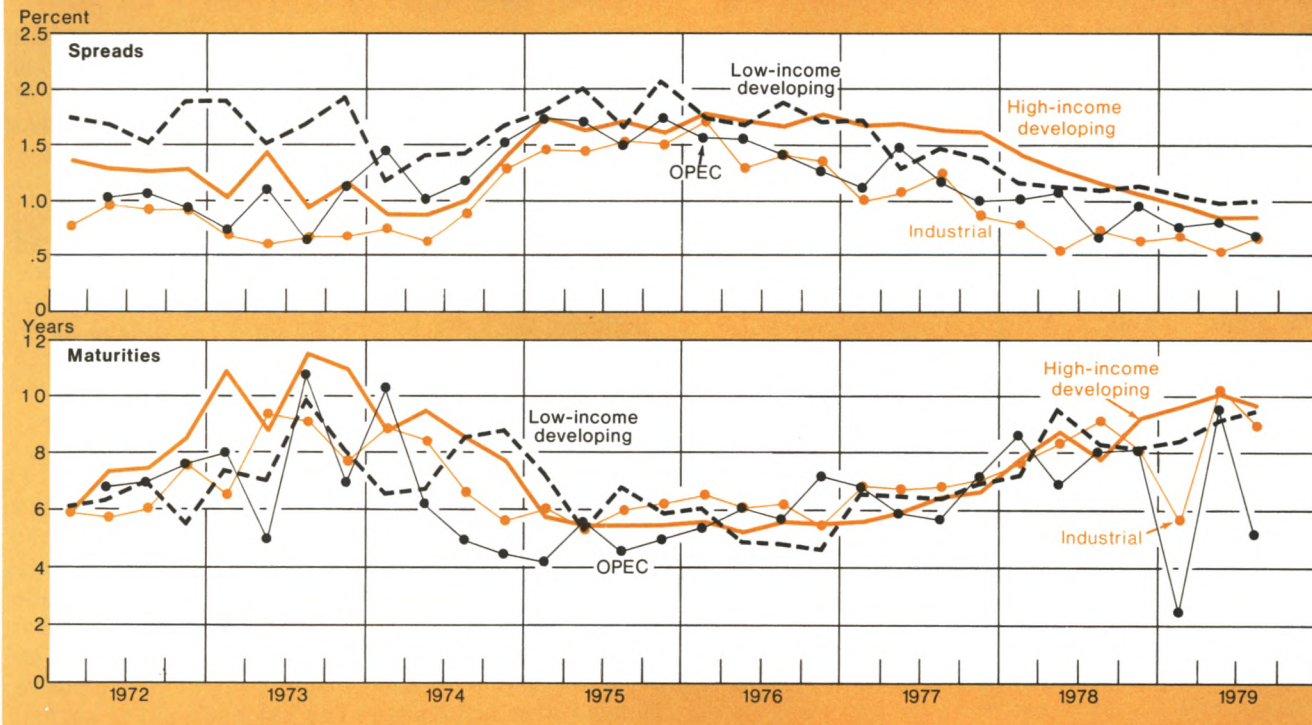
National Bank. Depositors reacted by seeking to hold only very short-term funds in the safest and largest banks. Responding to this sudden shift in depositors' attitudes, banks sought to shorten the maturity of their lending. They were unwilling to commit themselves to long-term loans at prevailing spreads. The result was a sharp tightening of lending terms; the weighted average spreads for industrialized countries doubled from 63 basis points in the second quarter of 1974 to 129 basis points in the fourth quarter. The deterioration in terms for the OPEC borrowers and the developing countries was equally dramatic.

In 1975, spreads widened further to the 1½ to 2 percent range and maturities dropped to about five and a half years. Very few new loans with a maturity longer than eight years were agreed to by lending institutions. This lenders market lasted until mid-1977. At that point, confidence in the market began to strengthen as a result of the banking system's successful role in the recycling process. In addition, German and Japanese banks entered the syndicated market on a large scale, vigorously soliciting business. Hence, spreads began to narrow. The weighted average spread for industrialized countries dropped from 1.25 percent in the third quarter of 1977 to 0.79 percent in the first quarter of 1978. Spreads for the developing countries fell correspondingly. By the fourth quarter of 1977, average maturities had lengthened to nearly seven years.

The borrowers market which began in mid-1977 is still present. In 1978 and the first three quarters of 1979, maturities rose and spreads narrowed further. By the third quarter of 1979, spreads for high-income developing countries reached a record low of 0.86 percent. But, in the wake of the freeze on Iranian assets in November 1979 and the series of oil price increases in late 1979 and 1980, market perceptions of risk have been altered and a two-layered market has developed. In this period of market uncertainty as reflected in the slowing of new syndication activity, prime borrowers continue to borrow on terms not dissimilar to what they were receiving late last year (spreads of ⅜ to ⅝ percent). Other borrowers are, however, confronted with

Chart 2

Spreads and Maturities on Syndicated Loans



Source: World Bank, Borrowing in International Capital Markets.

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somewhat higher spreads and lower maturities than in mid-1979.[7]

Determinants of spreads

There are several basic questions that consistently appear in any analysis of spreads.

- What causes a borrowers market or a lenders market?
- How are interest rates, spreads, and maturities related?
- What are the systematic differences in spreads between groups of countries?

This section considers certain economic factors which are important in the determination of spreads for syndicated Eurocredits: the level of interest rates, the volatility of interest rates, maturity, and risk. There are, however, other important factors which are difficult to quantify, such as increased competition from German and Japanese banks and relative loan demand pressures at home. These supply side influences were not explicitly included in the statistical analysis.

Level of interest rates

Narrow spreads are associated with a high level of interest rates for two reasons. The first reason is that banks would be expected to equate the marginal cost of all sources of funds. In periods of high nominal interest rates, the opportunity cost of reserve requirements is higher. Hence, the absolute differential between Euromarket and domestic market interest rates will widen because the former has no reserve requirements. Thus, more funds will be shifted into the Euromarket and, with an unchanged demand for funds, this would be sufficient to reduce spreads.

The second reason that a high level of nominal interest rates implies a narrower absolute spread relates to the return on capital. A bank should be concerned about the consolidated return on capital. It can be shown that, when LIBOR rises, the rate of return on capital increases. Thus, if the cost of capital remains constant, spreads will be lowered to maintain the same rate of return on capital. The rate of return on capital is computed by assuming the loan is funded proportionately by capital and borrowed funds. Thus, if we hypothesize a capital/total assets ratio of 5 percent, this implies that the average loan is funded 95 percent from deposits and 5 percent from capital. Assuming the bank has no overhead or loan-processing costs and it purchases funds in the interbank market at LIBOR, the return on capital is derived as follows:

$$\text{Return on capital} = [\text{return on the loan} - (\text{the cost of deposits}) \times (\text{deposits/assets})] \times \text{assets/capital}$$

All terms are expressed in percentage per annum. If the capital/asset ratio is 0.05, the spread is 1 percent and the LIBOR is 16 percent, we have:

$$\text{Rate of return on capital} = [\text{LIBOR} + 1 - (0.95 \times \text{LIBOR})] \times 20 = 1.8 \times 20 = 36$$

Assuming a marginal tax rate of, say, 50 percent, this 36 percent pretax rate of return is equivalent to an aftertax rate of return of 18 percent. If the capital/asset ratio and spread remain constant, and the LIBOR increases to 20 percent, the before-tax rate of return is now 40 percent and the aftertax rate of return is 20 percent. If the bank wished to achieve an 18 percent aftertax return on capital with a LIBOR of 20 percent, it would charge a spread of 80 basis points.

Since both effects work in the same direction, in theory higher interest rates should be associated unambiguously with lower spreads. Empirical work, shown in the appendix, confirms the theoretical hypothesis. Each 100 basis point (or 1 percentage point) increase in the level of rates over the relevant range will, all other things being equal, narrow spreads by 7 basis points.

Variation of interest rates

The more volatile are interest rates, the larger should be the spreads on Eurocurrency loans because banks do not eliminate interest rate risk by perfectly matching assets and liabilities. Since liabilities on average have shorter maturity than the rollover period for assets, the bank may have to fund the assets for the remainder of the rollover period with more expensive money than anticipated. The evidence indicates that this is important. Bank of England data for November 1979 show that 23 percent of foreign currency liabilities

[7] Another factor contributing to the slight tightening of terms for some borrowers is the freeze and slowdown of Japanese bank participation in the market. In October 1979 the Japanese Ministry of Finance effectively banned Japanese participation in syndicated credit until April 1980. They were able to reenter the market in April, but they are limited to an estimated $5 billion in credits for April 1980-March 1981, only a small fraction of their participation in the first nine months of 1979. Since the market is relatively competitive, there have been enough non-Japanese banks willing to participate in syndicates so that this has had little influence on the spreads of most borrowers. However, because of internally imposed country exposure limits, the slowdown of lending by Japanese banks has had an adverse effect on the spread for some heavy borrowers.

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Risk Protection Features of Syndicated Eurocredits

One of the most interesting features of a syndicated Eurocurrency loan is the degree it is tailored to minimize the risks that financial institutions participating in this market would otherwise face. Compared with the fixed rate credit arranged by an individual bank, the rollover syndicated Eurocredit reduces risk in several notable ways, as summarized below.

Lending Risks

Risk	Source of risk	Risk reduction strategy
Country risk	The ability and willingness of borrowers within a country to meet their obligations	Syndication of the credit and diversification of bank's loan portfolio
Credit risk	The ability of an entity to repay its debts	Syndication of the credit and diversification of bank's loan portfolio
Interest risk	Mismatched maturities coupled with unpredictable movements in interest rates	Matching assets to liabilities by pricing credits on a rollover basis
Regulatory risk	Imposition of reserve requirements or taxes on the banks	A clause in the contract which forces the borrowers to bear this risk

of banks in the United Kingdom (including a number of United States bank and other Euromarket participants) was for eight days or less, 19 percent between eight days and one month, and 28 percent between one and three months. Thus, the vast majority of the liabilities which fund these loans are of a shorter maturity than the rollover period for the loans themselves. A bank will tend to demand a risk premium for incurring this interest rate risk.

Empirical work supports this supposition. Each 0.01 increase in the quarterly coefficient of variation (the standard deviation as computed from daily figures, divided by the mean) translates into a 3 basis point increase in spreads.

Maturity

The relationship between maturity and spread depends on whether one is examining individual loan data at a single point in time or aggregate data across time. In a cross-sectional analysis, which examines individual loan data at a single point in time, there should be a positive relationship between the two variables. With other factors constant, a longer maturity loan should carry a wider spread in order to leave the lenders indifferent. This is true because, if spreads widen, lenders are locked into a long maturity loan at the old spreads. If spreads narrow, the borrower can refinance. In addition, bankers attempt to analyze both the economic and political risks associated with a loan. It is more difficult to analyze the economic and political risks over a twelve-year horizon than over a five-year horizon. Thus, for each additional year of maturity, lenders will require compensation in terms of spread, fees, or grace period. Borrowers also prefer longer maturities and are willing to compensate lenders for such a loan because they are assured of the availability of funds at a prespecified spread, even if market conditions tighten. If market conditions loosen, a borrower can often refinance.

However, by averaging spreads and maturities for each risk group in each quarter, the trade-off on an individual loan is not visible. At any point in time, a lender might be willing to make a six-year loan to the borrowers of a certain risk class at ⅝ percent, an eight-year loan at ¾ percent, or a ten-year loan at ⅞ percent. If equal numbers of borrowers opted for each maturity, in the aggregate we would simply observe an eight-year loan at ¾ percent.

Looking at aggregate data on spreads and maturities over time, as this article has done, there should be an inverse relationship between the two variables as maturity will serve as a proxy for market confidence. During periods of low confidence in the market, spreads should be wide and maturities short. For example, in the two years following Herstatt, banks were worried about the continued availability of funds. This was reflected in wide spreads and low maturities.

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In fact, it was found that each one-year increase in maturity is associated with a 9 basis point decline in spread.

Risk

The higher the perceived risk associated with a borrower, the greater the debt service difficulties anticipated by the lenders, hence the wider the spread that would be required. Thus, low-absorbing OPEC borrowers would be expected to pay a bit more than industrialized countries, high-income developing countries would be expected to pay more for borrowings than OPEC borrowers, and low-income developing countries would be expected to pay more than high-income developing countries. The data seem to bear this out. Holding other factors constant, OPEC countries borrow at 15 basis points more than industrialized borrowers, high-income developing countries at 38 basis points more, and low-income developing countries at 48 basis points more.

Risk premiums may be related to maturity. Since there is less certainty about the economic and political state of a given economy ten years from now, as opposed to next year, a risk-averse bank may charge a maturity-related risk premium to less than prime customers. It was found that for high-income developing countries each additional year adds to the spread 5 basis points over what an industrialized country would pay. Thus, on a seven-year loan, a high-income developing country would pay 35 basis points more than an industrialized country. For low-income developing countries, each additional year adds to the spread 7 basis points over what an industrialized country would pay. Thus, for a seven-year loan, a low-income developing country would pay almost 50 basis points more than an industrialized country. For OPEC countries, each additional year adds 2 basis points or about 15 points on a seven-year loan.

The perceived risk of lending to nonoil LDCs declined during 1975-79, as reflected in the spread differential between industrialized countries and nonoil LDCs. The large OPEC surplus in 1974 evaporated more rapidly than even the optimists in the market had predicted, and nonoil LDC deficits declined sharply in real terms from their 1975 peak of $32 billion. In addition, a number of nonoil LDCs—major borrowers like Korea and Brazil, for example—have developed their export potential rapidly. However, with the renewed widening of the OPEC surplus, the corresponding deficits for the LDCs are likely to be larger and more long lasting than had been thought. This is leading to a reassessment of relative risk.

Summary and Outlook

This article has attempted to explore the factors which are theoretically and empirically important in the pricing of syndicated loans. It was found that, if the level of interest rates increases, the volatility of rates declines, or, if the maturities on loans lengthen, then the spreads on syndicated loans tend to narrow. Banks clearly recognize risk differentials between borrowers. Those from OPEC countries borrow at about 15 basis points more than those from industrialized countries. Those from high-income developing and low-income developing countries pay a risk premium of nearly 40 and 50 basis points, respectively.

Thus far in 1980 there has been a slight tightening of terms for many borrowers. With the United States moving into a recession, interest rates have fallen. This has caused spreads to widen. The October 1979 decision of the Federal Reserve to place greater emphasis on bank reserves in day-to-day operations and less emphasis on short-term movements in the Federal funds rate resulted in wider interest rate swings. This increased rate volatility has been reflected in wider spreads. Maturities have dropped as well, demonstrating concern on the part of some lenders about the effects on the banking system of another round of large-scale deficit financing.

In the next two or three quarters, spreads on loans to a number of LDC borrowers could widen considerably more than spreads for industrialized borrowers. Nonoil LDCs already have a large amount of debt which must be serviced, as the outstanding debt of developing countries has more than doubled since 1974. Furthermore, this debt is concentrated in the largest United States and foreign banks, some of which are reviewing lending limits for certain borrowers. Consequently, banks may be more hesitant to participate in large new syndications unless lending margins widen.

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Appendix: Spreads

It is postulated that spread depends upon the level of interest rates, the volatility of interest rates, the maturity of the credits and risk variables as shown in equation (1).

(1) Spread = f (interest rates, volatility, maturity, risk)

The construction of a series which captures the volatility of interest rates without also capturing their level presents a bit of a problem. Using the variance or standard deviation of interest rates over the quarter is not satisfactory, as we would expect either to be highly correlated with the level of interest rates. For example, a standard deviation of 0.5 may reflect a great deal of volatility when interest rates are 5 percent, and reflect relatively little volatility when interest rates are 13 percent. Using the coefficient of variation (which is the standard deviation divided by the mean) rather than the variance or standard deviation mitigates this problem.

To investigate the impact of the variables mentioned above, a pooled cross-section time series regression of the following form was performed:

$$(2)\ \text{Spread} = \text{constant} + b_1\ \text{rate} + b_2\ \text{CV rate} + b_3\ \text{mat} + b_4\ D_1 + b_5\ D_2 + b_6\ D_3$$

where:

rate	=	the six-month Eurodollar interest rate
CV rate	=	coefficient of variation of the six-month Eurodollar interest rate
Mat	=	maturity
D_1	=	1 if the observation is that of a high-income developing country; 0 otherwise
D_2	=	1 if the observation is that of a low-income developing country; 0 otherwise
D_3	=	1 if the observation is that of an oil-exporting surplus country; 0 otherwise

The dummy variables were used to investigate if, on average, there are systematic differences in spreads between groups of countries. The coefficients on the dummy variables can be interpreted as risk premiums over what industrialized borrowers would pay.

The weighted average spread and maturity for each of the four groups (industrialized, OPEC, high-income developing, and low-income developing) were calculated from the World Bank's *Borrowing in International Capital Markets* data base. Regressions were performed from the third quarter of 1973 to the third quarter of 1979, and the results are given below (t statistics in parenthesis):

$$\begin{aligned}(3)\ \text{Spread} = {} & 2.093 - 0.072\ \text{rate} + 3.092\ \text{CV rate} \\ & (16.00)\quad (-5.59)\quad (2.49) \\ & -0.086\ \text{mat} + 0.376\ D_1 \\ & (-5.25)\quad (5.62) \\ & + 0.484\ D_2 + 0.147\ D_3 \\ & (7.25)\quad (2.09) \\ R^2\ (\text{adj}) = {} & 0.635;\quad \text{S.E.} = 0.236;\quad \text{DW} = 1.36\end{aligned}$$

Note that all coefficients have the expected sign, all are significant at the 5 percent level, and the regression explains 64 percent of the spread. While strictly speaking this Durbin-Watson statistic is meaningless, as this is a pooled cross-section time series, it may indicate autocorrelation as, out of 99 error differences, only three are across groups.

This relationship is flawed because it does not take account of changes in relative risk over time. To handle that problem, a slightly different equation was estimated. The dummy variables were weighted by maturity, on the assumption that the risk premium for less than prime customers should be higher for longer maturities. The regression results are:

$$\begin{aligned}(4)\ \text{Spread} = {} & 2.365 - 0.078\ \text{rate} + 3.080\ \text{CV rate} \\ & (10.32)\quad (-6.13)\quad (2.51) \\ & -0.118\ \text{mat} + 0.051\ (D_1 \times \text{mat}) \\ & (-6.97)\quad (5.74) \\ & +0.069\ (D_2 \times \text{mat}) \\ & (7.64) \\ & +0.023\ ((D_3 \times \text{mat}) \\ & (2.40) \\ R^2\ (\text{adj}) = {} & 0.644;\quad \text{S.E.} = 0.234;\quad \text{DW} = 1.42\end{aligned}$$

Note that all the coefficients are the correct sign, all are significant at the 5 percent level, and the regression explains 64 percent of the dependent variable. The Durbin-Watson improves marginally and the R^2 and standard error remain basically unchanged.

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Monetary Policy and Open Market Operations in 1979

Efforts to dampen inflationary pressures dominated monetary policy in 1979, as prices of goods and services surged with an intensity not evident since 1974. In the first four months, the Federal Open Market Committee (FOMC) maintained its Federal funds rate objective at just over 10 percent, despite a further weakening in monetary growth from the already sluggish pace of the previous quarter and indications that the economy might be sliding into recession. In the spring, rapid monetary growth resumed, and sharp increases in imported oil prices boosted inflationary expectations. The dollar, after strengthening in response to the support initiatives taken the previous November, once again came under downward pressure against major currencies in the foreign exchange markets.

The FOMC responded by raising its Federal funds rate objective—gradually at first as economic activity faltered in the second quarter, and then more rapidly as evidence mounted of a strong rebound in the summer. By September, the Federal funds rate was at about 11½ percent, but the dollar was slipping badly in the exchange markets and a speculative run-up in gold prices was spilling over to other commodities prices and threatening to spread to the general economy. With money and credit expanding rapidly, the nation's resolve to fight inflation was widely questioned.

On Saturday, October 6, the Federal Reserve announced a comprehensive program for gaining better control of money and credit, curbing the speculative excesses in the foreign exchange and commodities markets and thereby helping counter inflationary forces over time and inflationary expectations more immediately. To slow monetary growth and contain it within the 1979 ranges previously adopted, the FOMC announced that open market operations would follow a supply-oriented approach to managing bank reserves, while allowing wider short-term fluctuations in the Federal funds rate. The Board of Governors of the Federal Reserve System unanimously approved a 1 percentage point increase in the discount rate to 12 percent and imposed an 8 percent marginal reserve requirement on the managed liabilities of member banks and certain other institutions to slow the growth of bank credit.

At its October 6 meeting the Committee established annual growth rates of 4½ percent for M_1 and 7½ percent for M_2 as its monetary objectives for the September-December interval, although it was willing to tolerate somewhat slower growth to offset the earlier excesses. To guide Trading Desk operations under the new procedures, the staff derived paths for total reserves and for the monetary base. In doing so, the staff

Adapted from a report submitted to the Federal Open Market Committee by Peter D. Sternlight, Senior Vice President of the Bank and Manager for Domestic Operations of the System Open Market Account. Fred J. Levin, Manager, Securities Department, Ann-Marie Meulendyke, Chief, Securities Analysis Division, and Christopher J. McCurdy, Senior Economist, Securities Department, were primarily responsible for preparation of this report, with the guidance of Paul Meek, Monetary Adviser. Connie Raffaele, Robert Van Wicklen, and Diane Heidt, members of the Securities Analysis Division staff, participated extensively in preparing and checking information contained in the report.

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had to estimate the growth of currency, the demand for excess reserves, and the growth of required reserves necessary to support the expansion of deposits in line with the Committee's objectives for the monetary aggregates. After constructing a path for total reserves, a path for nonborrowed reserves was derived by subtracting from total reserves the $1.5 billion initial level of member bank borrowings specified by the Committee. As new deposit data became available each week, a decision had to be made whether deposit flows were deviating significantly from earlier estimates, warranting a change in the paths.

In carrying out the new procedures, the Account Manager's immediate focus of attention shifted to managing the supply of nonborrowed reserves, the reserve measure over which the Trading Desk has the most control within a statement week. The Committee's instructions allowed Federal funds, on a weekly average basis, to vary within a range of 11½ to 15½ percent. The basic strategy called for the Desk to aim initially for weekly path levels of nonborrowed reserves, but with adjustments made to speed a return to the average path for total reserves. When monetary growth was running more rapidly than desired in October, for example, the demand for total reserves began to exceed its path. With the Desk providing only the nonborrowed reserves allowed by the path, member bank borrowings rose, money market conditions tightened, and banks were encouraged to restrain their investment and lending policies and to slow the growth of money and credit. In fact, the Desk aimed for nonborrowed reserves even below initial path levels, trying to slow monetary growth and to bring total reserves back to path levels more quickly. Although there were problems at times, the Desk was able to achieve nonborrowed reserve levels over the October-December period broadly consistent with the Committee's monetary aggregate objectives.

In the financial markets, the reaction to the Federal Reserve's October 6 announcement was dramatic. While market participants had anticipated a support program for the dollar, the move to a reserve targeting procedure was unexpected. In the days that followed, interest rates rose sharply across the maturity spectrum, stock prices tumbled, and the dollar improved considerably in the foreign exchange market without central bank support. Prices of debt securities became much more volatile, as dealers sought to minimize their risk exposure, so that even small changes in investor demand had large effects on prices. Later in October, yields soared to new record levels in most sectors, as participants responded to incoming data showing greater than expected economic strength and initial indications of continued rapid growth of the monetary aggregates. By the year-end, as monetary growth slowed and participants accumulated experience with the System's new approach to operations, yields had receded somewhat and the markets had regained considerable composure. Still, the markets were a good deal more sensitive than before October 6, with yields well above their earlier levels.

Growth of the monetary aggregates slowed significantly in the fourth quarter, although it was difficult to gauge how much of the moderation reflected the new reserve operating procedures, the general tightening in money market conditions, or other factors. After expanding at an annual rate of more than 10½ percent over the previous six months, M_1 rose at a 3.1 percent rate over the October-December interval,[1] somewhat below the 4½ percent rate set by the Committee but in line with its general objectives. Growth of the broader monetary aggregates moderated as well, with M_2 increasing at a 6.8 percent rate—down from about 12 percent in the previous two quarters.

For the year ended in the fourth quarter of 1979, the FOMC achieved most of its monetary obectives. M_1 advanced by 5.5 percent (Chart 1), within the Committee's range of 3 to 6 percent, which reflected adjustments for the effects of shifts out of demand deposits into automatic transfer (ATS) accounts and negotiable order of withdrawal (NOW) accounts in New York State. The sharp rise in market interest rates over the year led to withdrawals from time and savings deposits with fixed rate ceilings. However, banks and thrift institutions were able to offset the deposit losses by stepping up their issuance of money market certificates (MMCs) whose yields were tied to auction rates on six-month Treasury bills. Indeed, some of these high rate deposits came out of lower rate accounts at the same institutions. Commercial banks captured an increasing share of new certificates following the mid-March regulation change eliminating the ceiling rate advantage of ¼ percentage point on MMCs issued by thrift institutions (when the six-month bill rate was above 9 percent). Partly as a result, the growth in M_2 of 8.3 percent over the four quarters of 1979 was slightly above the top of the Committee's 5 to 8 percent range, while M_3 growth, at 8.1 percent, was within its corresponding 6 to 9 percent range. The growth of bank credit also slowed significantly in the fourth quarter, as the expansion of business loans moderated from the rapid pace shown earlier in the year. For the year as a whole, however, the 12.3 percent growth of bank credit far

[1] Money stock data in the body of the report include the effects of bench-mark revisions incorporated in January 1980; no further revisions to seasonal factors were made as the series were replaced by new money stock measures in February 1980. The chronological sections make use of data as published at the time, since Federal Reserve decisions were based on them.

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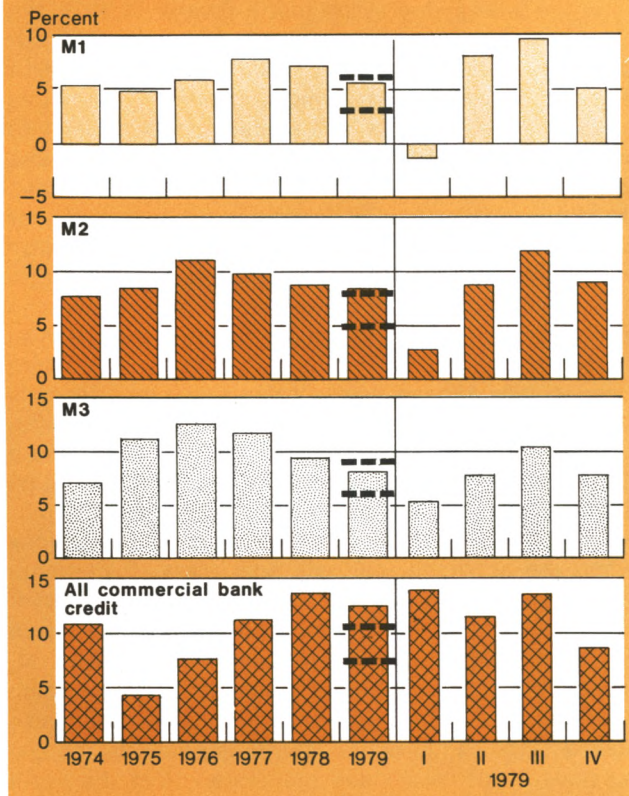
exceeded the range of 7½ to 10½ percent which had been associated with the Committee's monetary aggregate ranges.

The remainder of this report devotes special attention to the Federal Reserve's new reserve targeting approach for conducting open market operations. After highlighting economic and financial developments over the year and reviewing monetary policy over the first nine months, it turns to a more detailed discussion of how the reserve paths were formulated and how the Desk went about implementing the new procedures to achieve the paths.

Chart 1

Growth of Money Supply Measures and Bank Credit

Seasonally adjusted annual rates



The bands reflect the FOMC's yearly objectives for money and credit growth for 1979. The annual target for M1 was originally set at 1½ to 4½ percent based on the assumption that growth of ATS and NOW accounts in New York State would reduce M1 growth by 3 percentage points. Since the actual reduction was only about 1½ percentage points, the equivalent range for M1 is 3 to 6 percent.

The economy

The economy continued to expand in 1979, but its performance was marred by a further acceleration in inflation. Prices, as measured by the GNP (gross national product) deflator, rose 9 percent during the year, up from 8.2 percent in the previous year and the highest level since 1974. Consumer prices rose more rapidly, although for technical reasons the 12.7 percent advance in the consumer price index probably overstated the increase in cost of living for most households. The acceleration of inflation could be traced in part to sharply higher petroleum prices imposed by the Organization of Petroleum Exporting Countries (OPEC) after several years of stability. But it also reflected continued strong demand pressures pushing against supply constraints that are typical of an economy already running at near-capacity levels.

Despite widespread forecasts of impending recession, the economy proved surprisingly resilient. After faltering briefly in the spring, amid a jump in fuel prices and sporadic gasoline shortages, economic activity rebounded strongly in the third quarter and continued to move ahead in the final months. Over the four quarters as a whole, real GNP advanced by 1 percent, down substantially from the 1978 pace but in marked contrast to declines of ½ to 2 percent projected by most private and official forecasters at midyear. Gains in employment about matched the continued substantial growth of the labor force, so that the unemployment rate remained in the range of 5.7 to 5.9 percent. Although this was high by historical standards, demographic and social changes, coupled with increased Government income maintenance programs, have served to raise the unemployment rate associated with any degree of labor tightness. Significantly, the proportion of the work-age population employed continued to rise to new record levels, and there were widespread reports of labor shortages among many skilled worker categories during the year.

The consumer sector provided the major thrust to the economy. Even as inflation cut into their purchasing power, consumers stepped up spending, evidently on the view that prices would only be higher later on. Thus, the personal savings rate fell to its lowest level in thirty years. The foreign sector also added to demand. The volume of exports rose strongly, while imports in real terms leveled off, as the earlier depreciation of the dollar made United States goods more attractive relative to goods produced in foreign markets. Although housing expenditures declined from the high levels reached in 1978, the drop was much less than experienced during previous periods when interest rates were rising sharply. The perception that the purchase of a house is a good hedge against inflation

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helped sustain demand. Moreover, recent innovations in the financial markets—like the MMCs—coupled with the elimination or liberalization of usury ceiling limits on mortgage interest rates by many states facilitated the continued flow of funds to the housing sector.[2]

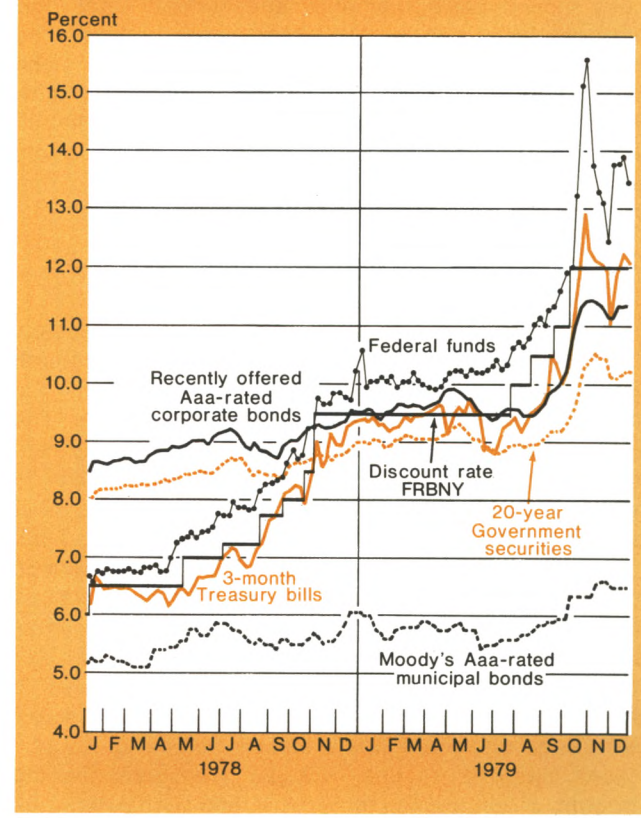
Financial developments

While the financial markets were relatively calm and steady early in 1979, conditions became increasingly turbulent as the year progressed. Interest rates soared, amid rising inflationary expectations and continued strong credit demands. At the same time, participants responded to wide swings in monetary growth and rapidly changing, and often conflicting, signals of the prospects for the economy and for inflation. As a result, market sentiment shifted repeatedly over the year, with participants alternating between the view that yields were at or close to peak levels and the feeling that they would go still higher. In this environment, yields fluctuated over an unusually wide range, undergoing several major changes in direction (Chart 2).

The largest increases and most dramatic changes occurred in the fourth quarter. The markets' adjustment to the Federal Reserve's policy actions announced on October 6 was complicated by unsettled conditions in the economy and sizable revisions to the weekly money stock statistics for October. The sharp increase in yields that followed on the heels of the October 6 announcement partly reflected indications that the economy was stronger than expected and that the monetary aggregates were continuing to advance at a rapid pace. When revised and subsequent data showed that monetary growth had actually slowed in October, yields retraced a portion of their earlier advances—although they were on the rise again at the year-end. In November and December the markets were also weighed down by concern over the growing tensions in the Middle East. Yields in almost all sectors of the debt markets reached record high levels in late October or early November. (However, most of these were easily eclipsed in the early months of 1980.) The weekly average effective Federal funds rate reached a peak of 15.61 percent in the week of October 31, up from its pre-1979 high of about 13½ percent in the summer of 1974. By the year-end, funds were trading mostly in a range of 13½ to 14 percent, still about 3½ to 4 percentage points above the year-earlier level. In the Government securities market, rates on three-month Treasury bills advanced by about 2¾ percentage points over the year. Yields on intermediate- and long-term Treasury coupon securities increased by 1 to 1½ percentage points.

Chart 2

Selected Interest Rates



Business demands for short-term credit were especially strong in 1979. Faced with the need to raise substantial funds, many corporations borrowed heavily at banks and in the commercial paper market rather than issue long-term debt at prevailing yield levels. The volume of business loans at commercial banks over the first nine months of the year rose at an annual rate of more than 20 percent, up from the already rapid increase of 16 percent in all of 1978. In the fourth quarter, however, following the Federal Reserve's October 6 policy initiatives, business loan growth slowed to a 6 percent rate. In contrast to the experience earlier in the economic recovery, much of the business borrowing over the year was concentrated at the major banks. To

[2] Mortgage rates began to bump against ceiling limitations in a number of states toward the year-end, as credit conditions tightened further. On December 28, the President signed Public Law 96-161 that exempted from state usury limits rates on residential first mortgages by most types of lenders until March 31, 1980, unless revoked by state action. The Depository Institutions Deregulation and Monetary Control Act of 1980, signed by the President on March 31, 1980, eliminated permanently state limits on rates on first mortgage residential loans, co-op loans, and residential mobile home loans, unless revoked by state action before April 1, 1983.

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meet the needs of their business and other customers, banks relied heavily on managed liabilities—large certificates of deposit (CDs), Eurodollar borrowings, securities repurchase agreements, and Federal funds borrowings from nonmember institutions. Indeed, the expansion of managed liabilities financed about one half of the increase in total bank credit in the third quarter. In the final quarter the growth of these liabilities slowed along with business loans. Banks' prime lending rates rose to a peak of 15¾ percent in November, before easing to 15¼ percent by the year-end. The volume of nonfinancial commercial paper outstanding rose by more than 50 percent over the year to nearly $31 billion.

Net Treasury borrowing, at $37.4 billion, fell below the $53.7 billion level of the previous year, although it remained substantial considering that 1979 was the fifth consecutive year of economic expansion. The Treasury added $29 billion to outstanding publicly held marketable coupon issues in the United States, while replacing $54.9 billion of publicly held maturing coupon securities. It also raised the equivalent of $3.7 billion in foreign markets through sales of two German mark-denominated and one Swiss franc-denominated issues. Treasury bills held outside the Federal Reserve and Government accounts increased by $8 billion. Additions to Treasury bill offerings were concentrated in the fourth quarter when the Treasury's new cash needs were large and there was a sizable volume of coupon issues maturing. In line with the Treasury's ongoing program of lengthening the debt, a long-term bond issue continued to be a standard feature of the quarterly refundings; the average maturity of interest-bearing marketable issues held by the public (*i.e.*, excluding the Federal Reserve and Government accounts) rose five months to three years nine months. Twice during the year—first in mid-March through early April and then more briefly in late September through early October—the Treasury was forced to postpone scheduled auctions because of Congressional delay in raising the national debt ceiling. In late March, the Treasury borrowed $2.6 billion from the System for several days through a special nonmarketable issue to help meet expenses until the debt ceiling legislation was passed by the Congress.[3]

[3] An amendment to the Federal Reserve Act, Public Law 96-18, signed by the President on June 8, 1979, extended for two years the System's authority for lending to the Treasury through direct purchase of securities, but under more restrictive conditions than formerly. As an alternative, the System was also provided with the authority to lend securities to the Treasury for sale in the open market, subject to the approval and rules and regulations of the FOMC. The total amount of securities loaned to and purchased directly from the Treasury at any one time may not exceed $5 billion, according to the new law. At its regular meeting on August 14, the Committee set a limit on such purchases of $2 billion.

The increase in Treasury debt securities outstanding was scattered among a number of sectors, including corporations, private pension funds, and individual accounts. The Federal Reserve System's outright Treasury holdings rose by about $10 billion (comprised of increases of $6¼ billion in bills and $3¾ billion in coupon issues), while commercial banks were net purchasers of a modest amount. In marked contrast to the previous year, foreign central bank demand was not a source of funds to the Treasury. Indeed, foreign official institutions ran down substantial amounts of both marketable and nonmarketable Treasury issues over the first five months of the year to finance the sale of dollars in foreign exchange markets as the value of the dollar was rising. Later, as the dollar came under renewed downward pressure in the summer and fall, they added to their Treasury securities, but their holdings again fell following the Federal Reserve's October 6 actions. By the year-end, total foreign official holdings at the Federal Reserve of marketable and nonmarketable Treasury securities amounted to $108.8 billion, down $22.1 billion over the year. (In 1978, they had risen by more than $31 billion, financing over one half of the Treasury's net borrowings.) State and local governments also reduced their holdings of Treasury securities in 1979. In 1978 many municipalities had taken advantage of lower yield levels to prerefund substantial amounts of debt, investing the proceeds in special nonmarketable Treasury issues as allowed by the less restrictive Treasury rules governing these operations that prevailed at the time.

Markets for financial futures contracts, which call for future delivery of financial instruments, grew rapidly in 1979.[4] At times, they exerted substantial influence on the cash markets for the underlying securities. Trading of ninety-day Treasury bill contracts on the International Monetary Market (IMM) in Chicago expanded to 2½ times its 1978 pace during the year, averaging the equivalent of about $7½ billion of three-month bills per day. Trading in the most active Treasury bond contract nearly quadrupled while activity in the most active GNMA (Government National Mortgage Association) contract increased by one half. The Commodity Futures Trading Commission also approved additional contracts, mainly more bill, bond, and GNMA contracts on new exchanges but also including new contracts for Treasury notes.

[4] For further information on the financial futures markets, see *Treasury/Federal Reserve Study of Treasury Futures Markets* (May 1979). See also Marcelle Arak and Christopher J. McCurdy, "Interest Rate Futures", this *Review* (Winter 1979-80), pages 33-46.

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The futures market for bills strongly affected the cash market during some periods. In the spring, futures rates dropped dramatically as speculators bought contracts in the belief that interest rates had peaked. Some firms in the cash market, who had sold futures contracts short against long positions in cash bills, had to scramble to cover their positions in both markets and, in the process, caused disparate movements in the cash and futures markets—in turn, causing sizable losses to some participants who had considered themselves reasonably hedged.

Sizable open positions in bill futures contracts also exerted influence on the cash market, especially as those contracts neared expiration. Open interest was particularly large on the June and December contracts. The three-month bills deliverable against those contracts traded at slight premiums to bills with adjacent maturities. On those contracts deliveries were very heavy as well. In December they amounted to $1 billion, nearly half the available trading supplies of the deliverable bills—the total amount outstanding excluding holdings by the System and foreign accounts and awards to noncompetitive bidders.

Federally sponsored agencies raised $20.1 billion in net funds from the public over the year, up from $17.6 billion in 1978 and a new record. The Federal housing agencies—including the Federal National Mortgage Association and the Federal Home Loan Banks—borrowed heavily to provide direct and indirect support to the housing market. The farm credit agencies also stepped up their borrowing during the year.

The gross volume of domestic corporate offerings totaled $37.6 billion in 1979, up slightly from the previous year. Corporate bond yields rose about 1.6 percentage points, somewhat above the advances registered in the Treasury coupon sector as investors showed a greater preference for risk-free debt. Gross sales of state and local government long-term issues amounted to $42.3 billion, compared with the $46.2 billion sold in 1978 (which was inflated by the prerefunding issues). A sizable portion of total state and local government offerings in 1979 represented bonds issued to finance the purchase of single-family homes at subsidized mortgage rates. The sale of these issues dropped off following the introduction in April of legislation in the Congress that would remove their tax-exempt status, but resumed in the summer when there were indications that issues which had already been planned would be allowed to proceed. Yields on high-grade municipal securities rose about ½ percentage point over the year; however, they remained below the peak levels reached in 1975 in the wake of New York City's financial crisis.

Monetary Policy and Its Implementation

In formulating monetary policy for 1979, the FOMC retained its goal of gradually reducing growth of money and credit over a period of years to curb inflationary expectations and inflation. It was recognized that given the strong upward price momentum which had built up in the decade of the 1970s—and especially in light of the steep rise in energy prices in 1979—the economy faced a difficult period of adjustment as monetary growth slowed. In the interest of promoting an orderly adjustment, the Committee adopted ranges for growth of the monetary aggregates for 1979 that provided for a moderate slowdown from the pace of the previous two years.

Through midyear, expansion of the monetary aggregates ran close to the Committee's objectives, on balance, as the speedup in the spring about offset the sluggish behavior in the early months. By the fall, however, after the aggregates had continued to advance rapidly despite repeated increases in the System's Federal funds rate objective, it was clear that a significant reduction of growth was necessary in the fourth quarter if the Committee were to achieve its monetary targets for the year as a whole. At the same time, the economy was showing surprising strength, the dollar was under substantial pressure in the foreign exchange markets, and inflationary psychology was building in response to the run-up in energy prices. Against this background, the Committee felt that a new approach to monetary control was needed.

Since the early 1970s, the FOMC had sought to exercise control over the monetary aggregates by targeting the Federal funds rate, generally permitting it to move up or down in response to deviations from desired monetary objectives. While the procedure had certain advantages, in recent years the Committee had repeatedly found monetary growth outpacing its objectives against a background of significant institutional and regulatory changes and high inflation rates. Moreover, the attention that came to be placed by the markets on the Federal funds rate seemed to inhibit the Committee from making significant changes in it over a short period. Typically, adjustments in the Federal funds rate objective were made in steps of ¼ percentage point or less from one statement week to the next, with changes only occasionally as large as 1 percentage point over a month. In this environment, it appeared that the Federal funds rate procedure itself could be contributing to excessive money and credit growth by fostering the view among banks and other market participants that credit would always be available at a price not much different from that prevailing at the time.

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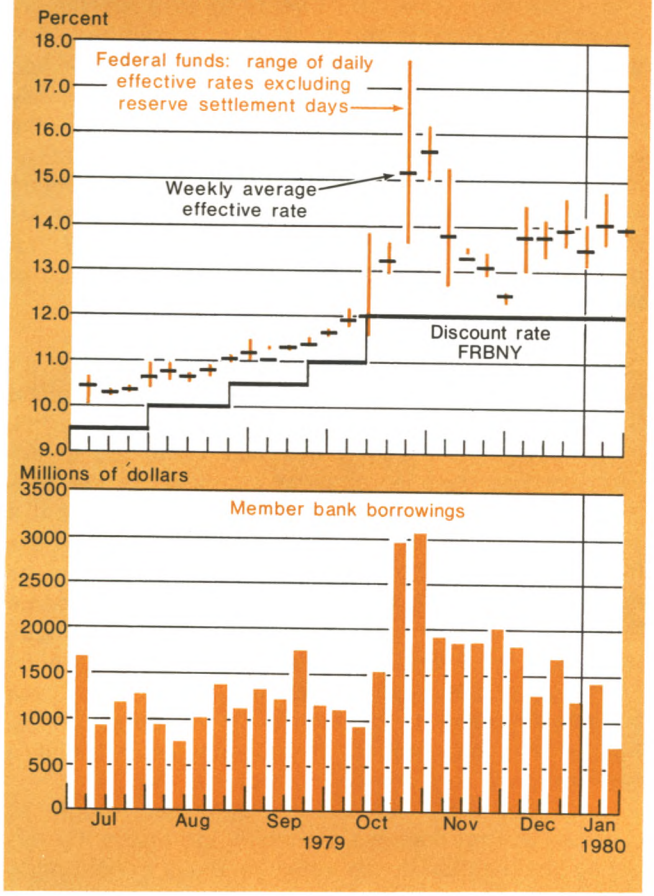
Chart 3

Money Market Conditions and Borrowed Reserves



The new reserve approach to policy, announced by the FOMC on October 6, provides for a potentially quicker response in money market conditions to deviations in monetary growth from the Committee's objectives. The Committee's directives to the Manager over the October-December period permitted variation in the Federal funds rate on a weekly average basis within an 11½ to 15½ percent range. As the Desk focused on achieving path levels for reserves consistent with the Committee's monetary objectives, the Federal funds rate rose by about 4 percentage points to around 15½ percent by the end of October, when the monetary aggregates appeared to be advancing rapidly. As it became clear that monetary growth had slowed, the Federal funds rate fell back and closed the year in a range of 13½ to 14 percent. Day-to-day changes in the Federal funds rate also increased significantly. Fluctuations were particularly sharp immediately after the October 6 announcement, but narrowed somewhat as the markets gained more experience with the new reserve approach (Chart 3). By focusing on reserve supplies, while permitting greater variation in the Federal funds rate, the Committee hoped to contain money and credit expansion within the 1979 ranges previously adopted.

Long-term targets

The FOMC's formulation of objectives for money and credit growth in 1979 was undertaken for the first time within the framework of the Full Employment and Balanced Growth ("Humphrey-Hawkins") Act of 1978. The act requires the Board of Governors to report to the Congress by February 20 and July 20 of each year on the Federal Reserve's objectives for money and credit expansion for that calendar year; the July review is also to include preliminary plans for the following year. In addition, these objectives are to be related to various short-term goals set forth in the most recent Economic Report of the President.

The key feature of the act with respect to the FOMC's monetary aggregate targeting procedures is the specification of growth rates for calendar years. Since 1975, the FOMC had set new yearly targets each quarter, using actual levels of the previous quarter as the starting point. Under that procedure, any overshoots (shortfalls) in quarterly growth raised (lowered) the base level from which the next yearly objectives were specified. Consequently, when persistent misses occurred in one direction, the procedure tended to cumulate the impact on monetary growth. The new approach, by fixing the base period as the fourth quarter of the previous year, should reduce this problem of "base drift".

The Committee faced more than the usual uncertainties concerning the forces affecting the demand for money when it met in February to consider its 1979 money and credit objectives. A staff analysis suggested that shifts in funds from demand deposit balances to ATS accounts and NOW accounts in New York State, first authorized in November 1978, were likely to reduce M_1 growth by about 3 percentage points over the year, but that projection was based on only limited experience. Moreover, the rise in market yields that had occurred since the time the Committee last set yearly targets in October 1978 was expected to encourage the public to economize further in its cash balances relative to income, but the magnitude of the effect on M_1 was difficult to gauge. While growth of the broader monetary aggregates was not expected to be significantly altered by ATS, there were doubts about the volume of funds that might be attracted to money

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market instruments from time and savings deposits with fixed rate ceilings.

To deal with these uncertainties, the Committee chose annual ranges for growth of the money stock measures for 1979 that were somewhat wider than usual (although, in the case of M_1, not so wide as the yearly range set in October immediately before ATS accounts were first instituted). In keeping with its longer run objective of moving gradually toward rates of monetary expansion consistent with general price stability, the growth ranges for all the money and credit aggregates were lowered somewhat from those established in October, with the midpoints of the ranges set below the growth actually experienced in 1978 (table).

By the time the Committee met in July to review the 1979 growth ranges and to set preliminary objectives for 1980, it was apparent that the flow of funds into ATS accounts was running below earlier projections. While data suggested that shifts of funds from demand deposit balances into ATS accounts and NOW accounts in New York State had reduced the annual rate of M_1 growth by nearly 3 percentage points in the first quarter, as had been expected, the impact in the second quarter was about half that amount. Meanwhile, in April the United States Court of Appeals had ruled that ATS and certain other payment services were inconsistent with current laws and would be prohibited as of January 1, 1980 unless the Congress explicitly enacted new legislation authorizing these services.[5] In the wake of that decision, banks and thrift institutions began promoting these services less aggressively than before. In view of the uncertainty over the form and timing that such legislation might take, the Committee decided to leave the 1979 growth range for M_1 unchanged, while also maintaining the same ranges set in February for growth of the broader money stock measures and bank credit. It was understood, however, that growth of M_1 would be expected to vary in relation to the range to the extent that the actual ATS/NOW impact deviated from the 3 percent figure projected earlier. By the fall it appeared that expansion of such accounts would reduce measured growth of M_1 over the year by 1½ percentage points, so that the effective range for M_1 growth was 3 to 6 percent.

For 1980, the Committee decided in July 1979 that it was appropriate, tentatively, to maintain the same ranges for money and credit expansion specified for 1979. In reaching that decision, the Committee noted that adjustments might be required because of possible Congressional legislation affecting interest-

[5] On December 28, 1979 the President signed legislation extending the authority for these accounts until March 31, 1980. The Depository Institutions Deregulation and Monetary Control Act of 1980, signed March 31, established permanent authority for ATS accounts at member banks and Federally insured commercial and savings banks, and for share drafts at Federal credit unions. NOW accounts, previously authorized for institutions in New York, New Jersey, and the New England states, are to be extended nationwide as of December 31, 1980.

Federal Open Market Committee's Annual Growth Ranges for Monetary and Credit Aggregates Set in 1978-79

Seasonally adjusted annual percentage rates

Period	Month established	M_1	Actual	M_2	Actual	M_3	Actual	Bank credit	Actual
1977-IV to 1978-IV	February 1978	4 to 6½	7.2	6½ to 9	8.7	7½ to 10	9.5	7 to 10	13.5
1978-I to 1979-I	April 1978	4 to 6½	5.1	6½ to 9	7.6	7½ to 10	8.7	7½ to 10½	14.1
1978-II to 1979-II	July 1978	4 to 6½	4.8	6½ to 9	7.7	7½ to 10	8.6	8½ to 11½	13.6
1978-III to 1979-III	October 1978	2 to 6	5.3	6½ to 9	8.2	7½ to 10	8.7	8½ to 11½	13.8
1978-IV to 1979-IV	February 1979	3 to 6*	5.5	5 to 8	8.3	6 to 9	8.1	7½ to 10½	12.3
1978-IV to 1979-IV	July 1979	3 to 6*	5.5	5 to 8	8.3	6 to 9	8.1	7½ to 10½	12.3
1979-IV to 1980-IV	July 1979	†		†		†		†	

* Originally, the Committee set a growth range for M_1 of 1½ to 4½ percent, with the expectation that the flow of funds from demand deposits to ATS accounts and NOW accounts in New York State would reduce the growth of M_1 by 3 percentage points over the year. Since the impact turned out to be about 1½ percentage points, the equivalent range is 3 to 6 percent.

† The Committee anticipated that growth might be within the same ranges adopted for 1979, depending upon emerging economic conditions and appropriate adjustments that might be required by legislative or judicial developments affecting interest-bearing transactions accounts.

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bearing transaction accounts and, in any case, the objectives would be reconsidered in February in light of information on economic conditions prevailing at that time. Moreover, a reexamination of the definitions of the monetary aggregates in view of institutional changes in the payment system, was under way, which was expected to lead to new and improved measures of the money stock.[6]

Open Market Operations in 1979

January to early July

Open market operations, by outward appearances, held a relatively steady course over the first half of the year. The average Federal funds rate held around 10 percent through April. The funds target was then raised once to around 10¼ percent, but the discount rate remained at 9½ percent. This stability, however, belied both the conflicting array of influences the Committee faced and the shifting nature of the policy outlook. By recent standards the securities markets were also fairly steady during the interval (Chart 2), reacting only modestly to the System's one firming move.

Early in the year, the economy gave off signs that it was slowing and that the long expansion, which had begun about four years earlier, might reverse course during the year. Income, sales, and production were growing sluggishly. This picture was not fully reflected, however, in the labor sector as the unemployment rate continued to hover around 5¾ percent. The value of the dollar on foreign exchange markets generally held its ground or improved. M_1 declined in the first quarter and M_2 posted a very modest rate of growth. The Committee recognized that this might reflect the impact of ATS, NOW accounts, and money market mutual funds and felt there might be some downward shift in the demand for money in relation to income. Inflationary pressures remained a constant worry as the rate of price increases accelerated from its 1978 pace.

In view of these conflicting influences the Committee, at the first three meetings, chose not to alter its Federal funds rate objective from that prevailing as the year began—in the area of 10 percent or slightly higher. At the very end of 1978 the members had decided in a special wire vote not to lower the funds objective when projections of M_2 growth fell well below its specified range and M_1 was in the lower part of its range. (This stance was reaffirmed in a scheduled telephone conference on January 12.) Following the February meeting, when M_1 appeared moderately below its range and M_2 just below, the Committee voted not to change the objective in light of the contradictory evidence on the economy. Subsequent to the March meeting, the aggregates again turned in a sluggish performance but the projections were not viewed as sufficiently weak to call for a change in the objective.

In contrast, the projections of the aggregates strengthened relative to their ranges following the April meeting. Late in the month, projections suggested that M_1 and M_2 would grow at rates that were close to, or above, the upper limits of their ranges. Following consultation with the Committee, the Account Management began aiming for Federal funds trading around 10¼ percent. Additional projections indicated further strength, but no change was made in the objective in view of the sensitive state of the financial markets, the uncertainties surrounding energy supplies, and the extent of the rapid monetary growth apparently due to transitory forces. The objective remained at 10¼ percent when projections showed the same outlook in mid-May as the Chairman reaffirmed this stance and a majority of the Committee, in a consultation, concurred.

The securities markets retreated a bit in the face of the upward shift in the Federal funds rate. The moderate overall reaction mirrored the modest size of the System's policy move. Short-term bill rates moved higher by about ¼ to ½ percentage point from mid-April through mid-May while longer term rates showed small mixed changes. By mid-April, short-term interest rates had been, if anything, slightly lower than at the beginning of the year. Most long-term interest rates, on the other hand, had worked a bit higher on balance through the first part of the year, probably reflecting advancing inflationary expectations.

At the May meeting, the Committee decided not to change its approach. The economy still appeared to be at or near a cyclical peak while the dollar had recently been doing better in foreign exchange markets. However, inflation remained the great concern, and there was a widespread feeling that, if it were not brought down, the next expansion would begin with a higher base rate of inflation than the current expansion. Monetary projections at the time of the meeting suggested that growth over the May-June interval would be slow. The rapid expansion in April was attributed to delays in processing income tax checks and the bunching of refunds. As it turned out, incom-

[6] New definitions of the money stock measures were announced by the Board on February 7, 1980. Among the most significant changes were the inclusion of NOW and ATS accounts in one of the narrow measures (M-1B) and the addition of money market mutual fund shares and repurchase agreements issued by commercial banks in the broader measures. For more details, see "The Redefined Monetary Aggregates", *Federal Reserve Bulletin* (February 1980), pages 97-114.

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ing data on the aggregates after the May meeting indicated especially rapid growth, with growth projected above the specified ranges. This behavior would normally have called for some firming in the funds rate. However, the Committee voted on June 15 not to change the objective in view of the weakness of economic activity and the general uncertainty about the behavior of the aggregates, the difficulty in interpreting the data in those circumstances, and the condition of the financial markets.

The securities markets rallied considerably in the late spring and early summer. From the higher rate levels reached in mid-May to the lows set at midyear, three-month bill rates fell about 1 percentage point and long-term bond yields fell about ½ percentage point. Prices advanced because many participants felt that the economy had reached a cyclical peak. This view stemmed from a wide array of weakening economic statistics, along with a steady System policy stance. In this setting the markets seemed to give only passing notice to bearish developments.

Early July to early October

The economic situation appeared to deteriorate in the third quarter at the same time that the pace of inflation stepped up. There was widespread concern, at least initially, that a cyclical contraction might be getting under way. The foreign exchange value of the dollar sagged around midyear and again late in August. The growth of the monetary aggregates remained high. Against this background, the Committee adopted a stronger, but still cautious, approach to policy. Its instructions to the Manager leaned increasingly toward resisting monetary expansion over the third quarter. In turn the Desk sought progressively tighter conditions in the money market. In addition, the Board of Governors approved increases in the discount rate in three ½ percentage point steps to 11 percent.

In late July, the funds rate objective was raised to 10½ percent, the top of the Committee's intermeeting range, following some strengthening in the aggregates and following Committee consultation. The members expressed a willingness to tolerate some trading on the high side of that rate in view of the unsettled conditions in the foreign exchange markets. A week later, after further indications of excessive monetary strength, the Committee voted to raise the upper end of the band to 10¾ percent and instructed the Manager to aim for a rate in a range of 10½ to 10¾ percent, depending on the subsequent behavior of the aggregates, conditions in foreign exchange markets, and the Treasury's quarterly financing. The Desk sought a funds rate objective of 10⅝ percent for the rest of the intermeeting interval.

In August the Committee decided at its meeting to raise its funds rate objective to 11 percent in a range of 10¾ to 11¼ percent. When growth of the aggregates turned out high, compared with their ranges, the Desk managed reserves so that the Federal funds rate moved toward the top of its range. In a telephone meeting at the end of August, the Committee raised the upper limit to 11½ percent but with the understanding that not all the additional leeway would be used immediately. That use would depend on the behavior of the aggregates and developments in foreign exchange markets. Open market operations fostered a rate of about 11⅜ percent. At the September meeting, the Committee raised its obective to 11½ percent. Following that meeting the objective was maintained at 11½ percent, although the rate was generally somewhat higher than that in the week preceding the special meeting on October 6.

Despite these actions, many participants in the securities markets came to feel over the third quarter that the United States was not dealing effectively with inflation. The nation's efforts to establish a comprehensive energy policy lagged, and increases in world oil prices continued to work their way into wages and prices generally. While the President's cabinet realignment generated considerable uncertainty, the markets took heart and rallied in late July when President Carter named Paul Volcker to be the new Chairman of the Board of Governors of the Federal Reserve System, anticipating a strengthened System effort to combat inflation.

For the most part, though, the markets were depressed by the System's inability to slow the rapid growth of money even as money market rates rose. Over the summer, prices in the domestic securities markets tumbled as expectations of recession gave way before the realities of economic strength and inflationary pressures. Rates on some Treasury bills and coupon securities reached new peaks (although these were to be eclipsed in October and again in early 1980).

In the late summer, speculative forces gathered strength in many markets as participants lost confidence in official efforts to deal with inflation. The dollar came under renewed attack in the foreign exchange market. The price of gold rose by nearly 50 percent to about $400 an ounce. In the futures markets, prices of commodities advanced rapidly, for both agricultural products and industrial metals. The price increases reinforced fears that inventory building and consumer buying binges would set off a further round of escalating prices. Instability in the foreign exchange markets also threatened the efforts to achieve moderation in world oil prices. Moreover the weakening

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in the value of the dollar exacerbated domestic inflation by adding to the prices of imports in general.

New techniques for implementation of monetary policy

The FOMC's shift on October 6 to a supply-oriented strategy of managing bank reserves fundamentally changed the procedure for specifying the Desk's operational objectives. The new approach established various reserve measures as its primary short-run operating objectives, so long as the weekly average Federal funds rate remained within certain broad constraints—11½ to 15½ percent initially. Previously, the Desk had managed nonborrowed reserves as necessary to achieve the Committee's Federal funds rate objectives.[7] The Committee's dissatisfaction with the excessive growth of money in the second and third quarters provided much of the impetus for adopting a new approach.

Because the new approach differs significantly from earlier techniques, a systematic review will be presented of the procedures involved as they have evolved thus far: from the Committee's specification of objectives, through the Board staff's translation of those objectives into intermeeting operating paths, to Desk strategies for achieving these paths.

Formulation of operating paths and objectives

The Committee begins the process of establishing operating guides for the Desk by choosing objectives for the monetary aggregates. In October it chose growth rates for a calendar quarter that appeared consistent with achieving its annual growth objectives. At the November meeting, it specified growth rates for the remainder of the quarter that were generally consistent with the earlier objectives, although accepting some of the shortfall that had already occurred.

The Board staff uses these growth objectives as the basis for constructing paths for total reserves and the monetary base. The object is to derive paths that will provide the amount of reserves needed to support the desired money growth. This estimation process is rather involved because of the complex relationship between reserves and deposits in the United States banking system. Required reserve ratios vary with deposit size and the membership status of banks, as well as the maturity structure of deposits; reserves are also required on deposits that are not included within the aggregates for which the Committee has established objectives. While the reserve-deposit ratios have a reasonable degree of stability over extended periods of time, considerable variation is possible over a month, or a quarter. The Board staff has developed techniques that allow for the likelihood of such variation.[8] Initially, the staff must decide on how to divide the Committee's two- or three-month growth objectives into monthly increments. Other things equal, there is a preference for steady monthly growth rates, seasonally adjusted, within the quarter although some modifications normally will be made if there is substantial evidence that monthly behavior will be notably different. The monthly pattern for money growth is then translated into seasonally unadjusted weekly levels. The weekly patterns (based on time series models with judgmental adjustments) are constrained to average to the goal over the whole period. The weekly figures are, in turn, broken down into currency, demand deposits, other deposits and liabilities at member banks, and such deposits and liabilities at nonmember banks. Once this breakdown is achieved, required reserve ratios are applied to the member bank deposit components to derive the required reserves needed to support money growth. The total reserve and monetary base paths can then be completed by adding an estimate of excess reserves.[9]

From the total reserve path, the nonborrowed reserve path is derived by subtracting the level of member bank borrowings from the Federal Reserve indicated by the Committee at its meeting. Typically, the Committee has chosen levels close to the recently prevailing average—though the level chosen on October 6 was shaded higher to impose some additional initial restraint. Ideally, the assumed initial borrowing level should be such that the resultant mix of borrowed and nonborrowed reserves would tend to encourage bank behavior consistent with the emergence of desired required reserves, and hence of desired monetary growth. In practice, there seem to be significant short-term variations in the willingness or desire of banks to turn to the discount window. This adds to the difficulty of choosing an appropriate level for path construction purposes, and may necessitate adjust-

[7] See "The Implementation of Monetary Policy in 1976", this *Quarterly Review* (Spring 1977), pages 37-49, for a discussion of techniques of implementing policy under the previous operating approach.

[8] See the statement by Chairman Volcker before the Joint Economic Committee on February 1, 1980, section entitled "The New Federal Reserve Technical Procedures for Controlling Money".

[9] It had been anticipated that excess reserves would continue to vary within a restricted band in most weeks, as they had before the change in procedures. Beginning around the time of the introduction of reserve requirements on foreign, agency, and Edge Act subsidiaries at the start of November, however, preliminary figures on excess reserves seemed to become more volatile, and tended to be above previous levels by more than the amounts that would be expected to be held by the foreign-related institutions. Subsequent revisions have reduced the volatility and lowered the average to a level more consistent with expectations.

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ments in a path in response to changes in bank attitudes toward the discount window.

Translating reserve paths into weekly objectives

Although the process described above produces weekly path levels, the Manager is more concerned with achieving reserve objectives for a period that averages several weeks—either an average over the intermeeting period or for two separate subperiods when the meetings are relatively far apart. Each week the Desk has an objective for nonborrowed reserves. In the initial week after a Committee meeting, the operating objective for nonborrowed reserves generally will be the same as the weekly path level. In subsequent weeks the reserve paths are reviewed by senior Committee staff and the Desk, as described below, typically each Friday morning, and a nonborrowed reserve objective is determined for that week with a view to achieving the average nonborrowed reserve path over the intermeeting period or relevant subperiod.

As part of the weekly review of paths, fresh estimates are made of the mix of currency and member and nonmember deposits and other liabilities. If the distribution among these items has shifted, the appropriate level of required reserves may differ from that originally estimated as consistent with the Committee's chosen growth rates. The assumption for excess reserves may also be changed on the basis of recent experience. If the aggregate adjustments from these sources is deemed significant, the practice has been to modify the path accordingly.

Once the average total reserve path for the interval has been reaffirmed or revised, it is compared with the projected demand for total reserves—*i.e.*, required reserves based on actual or estimated deposits plus excess reserves. This demand may be above or below path, generally depending on whether the chosen aggregates are running stronger or weaker than targeted by the Committee. If demand exceeds (falls below) the path, then hitting the nonborrowed reserve path would be expected to produce member bank borrowings at the discount window above (below) that initially assumed in building the path. If the projected demand for total reserves is significantly above (below) the path, then after consultation with the Chairman the nonborrowed reserve path may be lowered (raised) to encourage a more rapid adjustment in bank behavior. If, for instance, total reserves are rising well above path, then lowering the nonborrowed reserve path will force increased borrowings at the discount window and tend to set in motion forces that restrain additional expansion of deposits and reserves.

Having determined the average path level for nonborrowed reserves for the period, and knowing the levels achieved so far, the levels to be achieved in the remaining weeks of the interval can be determined. This is done in a way that tends to even out the amount of borrowings expected in each week. Also, with a fixed averaging period, deviations early in the period could call for a nonborrowed reserve objective consistent with a large change in borrowings in the final week, compared with what had been prevailing or what the Committee might choose at its next meeting. Accordingly, some modification to the nonborrowed reserve objective might be made to avoid pursuing a nonborrowed reserve level that implies very sharp short-term changes in the level of borrowings.

Achieving weekly objectives

Given the week's nonborrowed reserve objective, along with an awareness of the excess and borrowed reserve assumptions, the Desk devises an operating strategy. Each day, the Desk receives projections of nonborrowed reserve supplies for the statement week based on the factors that influence the Federal Reserve balance sheet. The projected supply is compared with the objective to see whether reserves will need to be added or absorbed. A few of the factors are hard to predict and are primarily responsible for large errors that occur in the forecasts. The most volatile and difficult to forecast in 1979 was Federal Reserve float. This factor, which results from credited but uncollected checks, is affected by weather-related and other transportation delays, the volume and distribution of checks presented for collection, and staffing levels. Over 1979 as a whole, the average revision to all operating factors between the estimate available at the beginning of the statement week and the final number was about $840 million (using Federal Reserve Bank of New York forecasts). The average errors decline as the week goes on, but even on the settlement day, the final day on which offsetting adjustments are possible, the average miss to the weekly average figure was about $150 million (equivalent to a projection miss on the final day's reserve level of about $1.0 billion).

The Desk also derives some information from the Federal funds market as to the accuracy of the reserve forecasts. It had been hoped, once the Desk was not pegging the Federal funds rate, that movements in the rate would tend to signal more clearly the state of reserve availability and the accuracy of the forecasts. In fact, the Federal funds rate has often failed to indicate excesses or deficiencies until rather late in the week unless the reserve "misses" are very large.

The Desk is thus left with imperfect reserve projections and uncertain guidance from the money market.

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Typically, if the projections suggest a need to supply or absorb reserves that is large relative to the average projection error, the Manager generally will get an early start on the task.[10] In such cases, the Federal funds market may well provide some confirmation in terms of the reported availability of funds in the market. The expected distribution of reserve excesses or deficiencies through the week may also affect the money market and pattern of Desk activity. If reserve availability is especially short or plentiful in the early part of the week, the Desk may time its operations so as to even out availability.

Market participants have sometimes misread the Desk's tendency to absorb reserves when the rate is falling or to inject reserves when the rate is rising as implying a return to a Federal funds rate target. In fact, though, the Desk would not be concerned with the rate level *per se* (unless it were threatening, on a weekly average basis, to breach the broad range selected by the Committee) but with whether its movements point to an abundance or shortage of nonborrowed reserves—thus confirming, or conflicting with, the projections. Moreover, the same factors that cause rate movements often also cause the Desk to take what appears to be offsetting open market operations. For instance, the funds rate would ordinarily be falling when there is a large "excess" supply of nonborrowed reserves relative to path, so that the Desk would be absorbing reserves at the time. Such operations would not be directed at maintaining a particular rate level, but rather at achieving the objective for nonborrowed reserves.

Early October to the year-end

The Desk began to implement the new procedures on October 9, focusing on the path levels for the first four weeks of the intermeeting period. Achieving the nonborrowed reserve path implied that borrowings would rise to an average of about $1.5 billion, a level that was expected to lead to Federal funds trading around 13 to 13½ percent, a greater spread over the new discount rate than had prevailed before October 6. Over the rest of the statement week that was under way—just two days—the Desk remained on the sidelines because reserves initially were estimated to be about in line with the weekly objective and because the securities markets were unsettled in the wake of the new program.

[10] The Desk may also take advantage of foreign account outright purchase or sell orders to move toward appropriate reserve availability, giving weight to the longer term as well as to the immediate outlook. Calculations of reserve availability assume foreign repurchase orders will be arranged with the System. If they are instead passed through to the market, this will raise the estimated supply.

The remaining three weeks of the first subperiod were complicated by continued sharp price swings in the securities markets and volatile changes in estimated monetary growth, partly reflecting large reporting errors. Early in each of the next two statement weeks, new data on money and reserves underwent successive upward revisions that lifted them first moderately above, and then far above, the objectives. Consistent with achieving desired nonborrowed reserves, it appeared that member bank borrowings would need to rise substantially—at first to $1.8 billion and then to the area of $2.5 billion to $2.9 billion.

Operations to restrain reserve availability tended to push up the Federal funds rate to around 13¼ to 13¾ percent, but borrowings at the discount window lagged behind expected levels for a time. At the start of the October 24 statement week, the Desk moved to achieve its reserve objectives through an outright sale of Treasury bills in the market. In response to this action, which was regarded as underscoring the System's intention to impose firm restraint, and the unexpectedly large increase in the preliminary money supply figures reported for the October 10 week, the market reaction intensified. The Federal funds rate moved up to and then briefly above the 15½ percent upper limit of its allowable range.

In these circumstances, the Committee in a telephone conference affirmed its willingness to see Federal funds trade in the upper part or even occasionally above the range. After a major downward revision to the money supply for the October 10 week and more modest reductions in surrounding weeks, the estimated values of the aggregates and reserves still appeared, for a time, to be stronger than desired. Pursuit of nonborrowed reserves close to the path level (or indeed a little below the initial path level in order to induce a speedier return to path for total reserves and monetary aggregates), continued to imply a high level of borrowings in the October 31 week. The Federal funds rate and borrowings both peaked in that week, with an effective Federal funds rate of 15.61 percent and average borrowings of $3,056 million. Figures available immediately following the interval suggested that, over the four weeks ended October 31, total reserves were $390 million above path, while borrowings averaged $2.1 billion and nonborrowed reserves were $230 million below path. (Final figures were essentially the same.)

When the second subperiod began in early November, sharp downward revisions brought the monetary growth rates down to, or below, rates in line with the three-month objectives. Accordingly, achievement of the reserve path levels for the three weeks ended November 21 implied a decline in discount window

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borrowings back to the $1.5 billion area, although subsequent revisions lifted the implied borrowings modestly. Borrowings did come down considerably, as the Desk provided reserves more generously than in earlier weeks, although they stayed slightly above anticipated levels. The Federal funds rate also eased off during the period, to an average effective rate of 13.10 percent in the final statement week. Total reserves again were well above path, this time by about $340 million on preliminary estimates, while nonborrowed reserves were about $40 million below path and borrowings close to $1.9 billion. (Final figures for total and nonborrowed reserves show, respectively, about a $270 million overshoot and a $115 million shortfall.)

The seven-week period between the November and January Committee meetings was also divided into two subperiods. In November the Committee voted for M_1 growth at a 5 percent annual rate over the two remaining months of the year and M_2 growth at an 8½ percent rate. In the initial subperiod, which covered the four weeks ended December 19, the Desk focused on total reserve paths consistent with the relatively slow growth of the monetary aggregates for November that had already emerged by the time of the November 20 meeting. Money growth was close to desired levels through most of the four-week period, although some weakness emerged toward the end of the interval. On balance, there was no reason for revising the paths, as the net revisions to technical factors were deemed modest. Total reserves came out about on path. By the final week of the subperiod, it appeared that achieving the nonborrowed reserves path would have called for a rise in borrowings to about $1.9 billion. However, preliminary figures for the second subperiod suggested that the monetary aggregates were running below the objective and that total reserves were likely to fall short of the path so that borrowings might be expected to drop off to around $1.5 billion. Rather than induce a one-week bulge in borrowings, the Desk aimed in the final week of the first subperiod for nonborrowed reserves consistent with borrowings of around $1.5 billion, thus anticipating that nonborrowed reserves for the four weeks ended December 19 would average about $100 million above path. This period ended with the reserve measures close to their path averages, with both total and nonborrowed reserves initially estimated to be around $50 million above path, while borrowings averaged close to $1.7 billion. (However, final data indicated overshoots of about $100 million for total reserves and $150 million for nonborrowed reserves.)

Moving into the second subperiod—the three weeks ended January 9—the impact on the paths of the weakness in the aggregates became more pronounced. The total reserves path was revised downward by $100 million to take account of a net shortfall in certain nonmoney items, which was only partially offset by estimates of increased demand for excess reserves. Even so, estimates suggested that total reserves were likely to fall short of the path by about $450 million on average. The extent of this shortfall was sufficiently large that the path for nonborrowed reserves was raised by $150 million to encourage an expansion in deposits and required reserves.[11] This adjustment, combined with the shortfall in required reserves, meant that the Desk initially aimed for nonborrowed reserves consistent with average borrowings of $1.1 billion. Additional upward revisions were made to the excess reserve assumption in the following two weeks, leading to further modest changes in the paths. Total reserves did not turn out to be so weak as initially thought, on average falling short of the revised path by around $200 million for the three-week subperiod. Hence, the implicit figure for borrowings edged back up, although it remained below that of the earlier period. As it turned out, nonborrowed reserves exceeded even the revised path, as the Desk accommodated to some extent the sharp temporary drop in demand for borrowings in the January 9 week. (Final figures show total reserves $265 million below path and nonborrowed reserves about $155 million above path.)

The behavior of the Federal funds rate during November and December was somewhat puzzling, as it often did not follow a usual relationship to the volume of discount window borrowings. The Federal funds rate did decline in early November, when borrowing dropped, but then continued to fall through the rest of the month, while borrowings stabilized around $1.8 billion to $1.9 billion (Chart 3). The average funds rate slipped as low as 12½ percent in the final week of the month, compared with about 13¾ percent at the start. However, in December, when borrowings declined further, though irregularly, ranging between $1.2 billion and $1.7 billion after the first week, the funds rate jumped back up to around 13¾ to 14 percent through December and into January.

Normally, one would not have anticipated a drop in the Federal funds rate in late November when borrowings were steady. Nor would one have expected the rate to rise and then stay up in December as borrowings resumed their decline. Part of the reason for the initial sharp decline may have been the emergence of

[11] It was recognized that, with a period as short as three weeks and with lagged reserve accounting predetermining requirements in two of them, little progress could be expected within the period toward achieving the path average for total reserves.

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expectations during November that interest rates might be about to peak. This set off a rally in the securities markets, which became dramatic in the final week of the month. Some of the yield declines in other sectors may have spilled over to the Federal funds market. As mixed economic signals emerged in December, the anticipation that rates had peaked began to be held with less conviction, and uncertainty reemerged. Another factor that may have been lifting the funds rate in December was the fact that Federal funds purchased from member banks were free of marginal reserve requirements and at that point appeared to be a good substitute for CDs and other borrowing, especially if rates were likely to fall early in 1980. Finally, the very heavy borrowings in October and relatively high borrowings in November may have contributed to a reluctance to borrow late in the year, as a number of banks had been making fairly frequent use of the window, and they may have sought to reduce that reliance for a time.

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February-April 1980 Interim Report
(This report was released to the Congress and to the press on June 2, 1980.)

Treasury and Federal Reserve Foreign Exchange Operations

Coming into the February-April period under review, the exchange markets were caught up in various cross-currents. Market participants were troubled by the persistent rise in OPEC (Organization of Petroleum Exporting Countries) oil prices, the rapidly moving events in Iran and Afghanistan, and the deterioration in United States-Soviet relations. For the United States the higher oil price appeared to add further to the massive oil import bill already expected for this year. Proposals for additional defense expenditures raised the prospect of an enlarged budget deficit. Inflationary expectations showed signs of intensifying. But many of these developments raised difficult problems for other industrial countries as well. The continuing rise in international oil prices threatened to add to uncomfortably large current account deficits in Germany and Japan, among others, and to exacerbate inflation generally. The political tensions both in the Middle East and between the United States and the Soviet Union were thought to be as serious for the economic and military security of Western Europe and Japan as they were for the United States. These various uncertainties made traders especially cautious about taking positions and making markets, thereby adding to exchange rate volatility.

By February, the dollar had firmed somewhat from the lows of early January, but the recovery had been tentative and bouts of selling pressure occasionally emerged. On two occasions when the dollar came on offer during the first two weeks of the month the United States authorities intervened, selling a total of $240.8 million equivalent of marks and $22.5 million equivalent of Swiss francs. Most of these sales were financed out of balances of the Federal Reserve and the Treasury, but the sales of marks also entailed drawings by the Federal Reserve in the amount of $115.4 million equivalent under the swap line with the German Bundesbank. These operations raised the System's total mark swap debt to the Bundesbank to a peak of $2,746.3 million equivalent.

With the economic outlook for the industrial countries obscured by major uncertainties, market participants increasingly focused on interest rate developments here and abroad. The demand for money and credit in the United States increased quite rapidly, as inflationary expectations mounted and as the domestic economy appeared to be strong despite widespread forecasts of recession. Inflationary expectations also gripped the longer term financial markets, and bond yields rose sharply. As part of the efforts of the United States authorities to curb inflation, the Federal Reserve continued to adhere to the monetary policy approach adopted last October 6, placing greater emphasis than before on the supply of bank reserves and less emphasis on the Federal funds rate in seeking to moderate the domestic growth of money and credit. With the Federal Reserve thus restraining the growth of bank

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reserves in the face of the sudden increase in demand for money and credit in the United States, short-term dollar interest rates began to rise sharply. The Federal Reserve followed up by raising the discount rate by 1 percentage point to 13 percent in mid-February, but market rates continued to climb.

Interest rates abroad were also advancing but not so sharply as in the United States, and funds began to be switched into dollars in response to the increasingly favorable interest rate differentials. As the dollar thus came into demand in the exchanges, frequently in the form of large buy orders, foreign central banks were quick to intervene as sellers of dollars out of their own reserves. Inasmuch as these pressures occurred during the normal trading hours abroad, the Desk's activities in the New York market for account of the United States authorities were small, with purchases of $60 million equivalent of marks on two occasions through early March. Meanwhile, however, the United States authorities bought substantial amounts of marks from correspondents, mainly from the Bundesbank, and used those marks to reduce swap debt with the Bundesbank.

By March, dollar exchange rates had advanced by some 2¼ percent against the German mark and other currencies within the European Monetary System (EMS), ½ percent against the pound sterling, and 5¼ percent against the yen, with trading becoming increasingly one way. The Japanese authorities were particularly concerned about the heavy selling pressure on the yen, and on March 2 they announced a package of measures which included agreement by the Federal Reserve, the German Bundesbank, and the Swiss National Bank to cooperate in an effort to avoid an excessive decline of the yen. For its part, the Federal Reserve agreed to purchase yen in the New York market for its own account and to provide resources to the Bank of Japan if needed under the existing $5 billion swap arrangement.

In view of the continuing buildup of inflationary psychology and of strong credit demands in the United States, reports began to circulate that the United States authorities might impose credit controls as a supplement to the policy of monetary restraint. A scramble for funds ensued as businesses attempted to secure lines of credit and as banks sought to fund their commitments, thus pushing up United States domestic and Eurodollar interest rates further. As interest differentials favorable to the dollar progressively widened, the dollar came into even greater demand in the exchanges. Investors adjusted their portfolios, commercial leads and lags swung heavily in the dollar's favor, and OPEC members increasingly placed surplus funds in dollar-denominated rather than in foreign currency-denominated assets. Professional and corporate borrowers, seeking an alternative to high-cost dollar financing, turned to money and capital markets abroad, where interest rates had risen far less rapidly, and converted their loan proceeds into dollars.

This turn of events evoked a vigorous response abroad. By then the authorities in other major countries were openly concerned that the sharp deprecia-

Table 1

Federal Reserve System Drawings and Repayments under Reciprocal Currency Arrangements

In millions of dollars equivalent; drawings (+) or repayments (−)

Transactions with	System swap commitments January 31, 1980	February through April 30, 1980	System swap commitments April 30, 1980
Bank of France	-0-	+ 73.9	73.9
German Federal Bank	2,630.9	+ 502.9 −2,838.3*	296.4
Total	2,630.9	+ 576.8 −2,838.3*	370.3

Because of rounding, figures may not add to totals.

Data are on a transaction-date basis.

* Repayments include revaluation adjustments from swap renewals, which amounted to $0.8 million for drawings on the German Federal Bank renewed during the period.

Table 2

Drawings and Repayments by Foreign Central Banks and the Bank for International Settlements under Reciprocal Currency Arrangements

In millions of dollars; drawings (+) or repayments (−)

Bank drawing on Federal Reserve System	Outstanding January 31, 1980	February 1, through April 30, 1980	Outstanding April 30, 1980
* Bank for International Settlements (against German marks)	-0-	+143.0 −143.0	-0-

Data are on a value-date basis.

* BIS drawings and repayments of dollars against European currencies other than Swiss francs to meet temporary cash requirements.

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tions of their currencies in the exchanges would add to domestic inflationary pressures through higher prices for oil and other imports. Consequently, central banks of several major countries stepped up their intervention in the exchanges. In addition, concern about inflation led many central banks to raise official interest rates, but money market rates for the dollar went up faster. In some cases, the authorities liberalized previous restrictions on capital inflows. The authorities of several countries negotiated actively with foreign official institutions, most notably those from OPEC, to gain investments in their respective currencies. For their part the United States authorities continued to acquire marks, purchasing another $35 million equivalent in the market. These marks, together with $2,751.7 million equivalent purchased from correspondents since the beginning of the period, were used to liquidate in full the Federal Reserve's outstanding swap debt with the Bundesbank and to make interest payments on the Treasury's securities issued in the German capital markets.

On March 14, President Carter announced a broad anti-inflation program that included action aimed at balancing the fiscal 1981 budget deficit, a surcharge on imported oil, and authorization for the Federal Reserve under the terms of the Credit Control Act of 1969 to impose special restraints on credit expansion. Accordingly, the Federal Reserve asked the commercial banks to hold their growth of lending to United States residents to 6-9 percent during 1980, required special deposits from nonmember banks and other lending institutions, and raised the marginal reserve requirement on managed liabilities from 8 to 10 percent for large member banks and United States agencies and branches of foreign banks. In addition, the Federal Reserve imposed a 3 percentage point surcharge on large member banks' discount window borrowings. Following these measures, United States short-term interest rates continued to climb through late March and into early April, reaching unprecedented highs.

By late March the bidding for dollars had become so generalized that demand pressures, which had previously been concentrated more heavily in markets abroad, began erupting at any time during the 24-hour trading day. To counter disorderly conditions, the Desk entered the New York market in March and the first week of April as a buyer of German marks on thirteen occasions, of Swiss francs on four occasions, and Japanese yen on ten occasions. In early April the Desk also intervened on one occasion to purchase marks in the Far East. Between mid-March and early April, the Desk purchased an additional $761.6 million equivalent of marks in the market, which—combined with an additional $684.4 million equivalent acquired from correspondents—were added to System and Treasury balances. Between February 1 and early April the Federal Reserve purchased $185.1 million equivalent of Swiss francs, including $140.4 million equivalent in the market, which were added to System balances. Following up on the March 2 agreement with the Japanese authorities, the Federal Reserve bought a total of $216.8 million equivalent for its own account as part of joint operations with the Bank of Japan in the New York market. The Bank of Japan did not draw on the swap line.

In the five weeks through April 8, the dollar had advanced a further 11¼ percent against the German mark, 5¾ percent against the pound sterling, and 4¾ percent against the Japanese yen to reach the highest levels recorded in some two and a half years. Nevertheless, the scramble for funds in the United States had about run its course, and an increasing number of economic indicators were suggesting that overall economic activity in the United States was slowing rapidly. Under these circumstances, market participants began to sense that domestic interest rates would soon turn down. Meanwhile, foreign money markets had tightened up considerably, in part as a result of the recent heavy exchange market intervention.

Against this background, once United States interest rates showed clear signs of declining in early April, the dollar came under immediate and heavy selling pressure. At this time also, dwindling prospects for a solution to the hostage situation seriously heightened political tensions between the United States and Iran, adding to the market's concerns about the dollar. On April 8-10 the dollar dropped sharply across the board, declining about 5 percent against the major European currencies in only twenty-four hours. To cushion the decline, the Trading Desk intervened in size, operating in German marks and Swiss francs. The Desk also sold French francs, in consultation with the Bank of France, to avoid aggravating the weakness of the mark relative to the franc within the EMS.

Nevertheless, as interest rates continued to decline in the United States, and the sequence of weekly indicators showed that the key monetary aggregates were contracting, the dollar came under periodic selling pressure. Traders generally recognized that the Federal Reserve's policy of restraint on money supply growth was consistent with some easing in financial market conditions, particularly as demands for money and credit weakened and evidence of recession mounted. There were expectations that the momentum of inflation would slow in the months ahead, but traders remained concerned that interest rates were dropping more rapidly than anticipated. Abroad, interest rates generally held firm so that favorable interest

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Table 3

Net Profits (+) and Losses (−) on United States Treasury and Federal Reserve Current Foreign Exchange Operations

In millions of dollars

Period	Federal Reserve	United States Treasury: Exchange Stabilization Fund	United States Treasury: General account
February 1 through April 30, 1980	+34.9	+ 11.7	+ 3.7
Valuation profits and losses on outstanding assets and liabilities as of April 30, 1980	−21.8	−360.8	−137.9

Data are on a value-date basis.

differentials for the dollar were rapidly eroding. The United States authorities stepped in fairly quickly to cushion the decline whenever the dollar came on offer in late April. These operations were closely coordinated with similar intervention by the Bundesbank and other foreign central banks and helped restore two-way trading in the exchanges.

Gradually over the month, market participants focused somewhat less on interest rate considerations and more on broader economic developments. Monthly data showed that the United States trade position was improving, while some evidence suggested a slowing in United States inflation. As a result, dollar rates in the exchange market steadied. By the end of April, although the dollar had declined as much as 9 to 11½ percent from its peaks against the major Continental currencies, it was still 2 to 3½ percent higher on balance for the three-month period under review. Against the Japanese yen and the pound sterling, the dollar ended the period about ½ percent higher on balance.

During April the United States authorities intervened on nine occasions in marks, selling a total of $1,183 million equivalent shared between the Federal Reserve and the Treasury. Most of these operations were financed out of balances, but System sales of $387.6 million equivalent were financed by drawings under the swap line with the Bundesbank. At the same time the Federal Reserve was able to buy $50.4 million equivalent of marks in the market on two occasions and $91.1 million equivalent from correspondents, thereby adding to System balances and reducing System swap debt to $296.4 million equivalent by the month end. During April, the System also operated in Swiss francs on three occasions, selling $80.2 million equivalent financed out of balances. In addition, the Federal Reserve intervened in French francs on three occasions, selling a total of $73.9 million equivalent financed by drawings on the swap line with the Bank of France.

During the period under review the Federal Reserve and the Treasury both realized profits on foreign exchange operations. Table 3 shows that the System realized $34.9 million, the Exchange Stabilization Fund realized $11.7 million, and the Treasury's general account realized $3.7 million in profits. On a valuation basis, however, as of April 30 the System showed $21.8 million in losses on outstanding foreign exchange holdings and commitments. The Exchange Stabilization Fund and the Treasury's general account, respectively, showed $360.8 million and $137.9 million in losses on outstanding assets and liabilities.

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