

*Federal Reserve Bank  
of New York*

**SEVENTY-FOURTH  
ANNUAL REPORT**

*For the Year  
Ended  
December 31, 1988*



*Second Federal Reserve District*





**FEDERAL RESERVE BANK OF NEW YORK**

April 27, 1989

To the Depository Institutions in the  
Second Federal Reserve District

I am pleased to transmit the Seventy-Fourth Annual Report of the Federal Reserve Bank of New York. This year's Annual Report contains an essay which deals with what I regard to be the most formidable problem facing the U.S. and the global economy over the next three to five years, namely, our ability to substantially reduce, if not essentially eliminate, the massive and unsustainable imbalances that currently characterize the U.S. and the global economy, while maintaining noninflationary growth here and elsewhere. As such, the essay builds on and elaborates a theme which has been the subject of a number of addresses I have given over the past several years.

Using a framework of analysis built on the U.S. "export-import" gap, its "spending-production" gap, and its "savings-investment" gap, the essay's principal author, Mr. Akbar Akhtar, forcefully illustrates the nature of the current problem—the risks to the U.S. and global economy that may arise if these imbalances are not corrected in the period ahead—and he outlines some of the directions in which public policy here and abroad should move in an effort to contain and gradually eliminate these imbalances.

Of the many important implications of the essay, two stand out: first, for a variety of reasons, including capacity constraints in at least some segments of U.S. manufacturing industries, it will probably take four to five years to wind down the U.S. external deficits in an orderly fashion; and second, the elimination of the U.S. budget deficit over the same time frame is a necessary, but not sufficient, condition for eliminating or essentially eliminating the "gaps" cited in the essay.

The essay is part of a broader effort by our research staff to assess the economic implications of external deficits, and many issues raised here are more fully examined in the Bank's upcoming Quarterly Review, to be released early next month.

I hope you find this perspective on the external adjustment problem interesting.

A handwritten signature in cursive script, reading "E. Gerald Corrigan", is positioned above the printed name and title.

E. Gerald Corrigan  
President



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*Seventy-fourth Annual Report  
Federal Reserve Bank of New York*

**ADJUSTMENT OF U.S. EXTERNAL IMBALANCES**

M.A. Akhtar  
*Vice President and  
Assistant Director of Research*

In the wake of the October 1987 stock market crash, the U.S. economy was expected to show very slow growth during 1988, the sixth year of the current economic expansion. Actual economic performance, however, easily exceeded those earlier expectations. Employment increased strongly during the year, bringing the total number of jobs added since the trough of the last recession to about 17 million, and the unemployment rate fell to its lowest level in the last 15 years. Real GNP advanced at an annual rate of almost 3 percent, despite considerable adverse output effects of the drought. In early 1989 the economy appeared to be operating very close to its full employment utilization level of resources. Even so, inflationary pressures have accelerated only moderately, although the risk of significantly higher inflation has risen in recent months.

Progress was also made on external imbalances. In particular, the overall international trade deficit of the United States fell substantially in both real and nominal terms. The improvement in the international sector, however, represents only the initial, and perhaps the easiest, stage of the adjustment process. Our external deficits remain very large and the adjustment so far has not eliminated, or even substantially reduced, the need for further adjustment.

Against the background of these recent developments, this essay provides a longer term perspective on the external adjustment process and problems. Specifically, it reviews the nature and evolution of U.S. external imbalances since 1982 relative to earlier time periods in terms of broadly based macroeconomic relations. That same general macroeconomic framework is then used to assess the need for further external adjustment and to consider various policy options.

The primary message of this essay is that our international trade deficit is closely related to important imbalances in domestic consumption, saving, and investment, and that a correction of those imbalances is necessary to achieve a satisfactory adjustment on the external side. The economy has experienced exceptionally high levels of consumption and low levels of net saving and net investment over the last six years as

compared with its earlier history. Without major economic policy changes, domestic imbalances and the international deficit will almost certainly continue and court a clear and increasing risk to financial and economic stability over time. Even if economic shocks can be avoided, these imbalances will undermine our future productivity and living standards.

## EVOLUTION OF EXTERNAL DEFICITS

The U.S. international deficit as measured by the current account balance accumulated to nearly \$700 billion over the last six years, averaging about \$115 billion, or about 2¾ percent of GNP, on an annual basis. Even after substantial improvement during 1988, the current account deficit in the fourth quarter of the year was still above the annual average of the last six years. Both the size and persistence of the external deficit are historically unprecedented in absolute dollar terms, although relative to GNP, other countries have run even larger deficits and for longer periods.

To examine the nature and evolution of external deficits, we look at the national income accounting framework, which allows for different perspectives by providing equivalent and complementary ways of defining the external balance. This approach is particularly helpful in highlighting important elements in the major departure of external balances from the past. It also has the advantage of showing explicitly that certain conditions must be met in order to achieve adjustment, regardless of immediate or ultimate sources of the external deficit.

From the national income accounts, the external balance can be defined in three technically equivalent ways: (1) the difference between national exports and imports of all goods and services, (2) the difference between national output and spending, and (3) the difference between national saving and investment. At the highest level of aggregation, the three gaps—the export-import gap, the output-spending gap, and the saving-investment gap—are approximately equal by definition.<sup>1</sup> The three gaps may be viewed as representing different perspectives on the external balance, and the details underlying them allow us to identify important elements of change in the evolution of imbalances. In what follows we look at the components of the three gaps

<sup>1</sup>Strictly speaking, the reported data on balances across accounts differ due to various statistical discrepancies and some differences in the treatment of certain items. All three measures, however, show essentially the same picture, especially in a longer run context.



to ascertain unusual features in the post-1982 period relative to earlier periods and to assess the depth and breadth of imbalances.

## **The Export-Import Gap**

This section begins with a brief overview of the current account balance—normally regarded as the most comprehensive measure of the gap between exports and imports of all goods and services — but its main focus is on details of “net exports” as defined in the National Income and Product Accounts. The medium- and long-term movements of the two measures closely approximate each other, and differences in their coverage are fairly modest.<sup>2</sup> The use of net exports allows us to relate the external imbalance more directly to domestic macroeconomic magnitudes but the choice has no effect on our interpretation of facts and conclusions.

The current account balance moved into a large deficit in 1983 and rapidly worsened during the next several years. This development was in marked contrast to a near-balance position over 1981-82 and, on average, over the whole postwar period through 1982 (Chart 1). On an annual basis, the current account deficit reached a peak at \$154 billion, or close to 3½ percent of GNP, in 1987 and has fallen significantly during 1988. In the fourth quarter of last year, the overall deficit was about \$128 billion, or somewhat above 2½ percent of GNP.

The deterioration in the current account balance over 1982-87 was more than fully accounted for by the merchandise trade component, which largely consists of manufacturing goods. The increase in the merchandise trade deficit reflected both a sharp weakening of export performance and a more rapid expansion of imports than in the earlier period. The net international investment income component, by contrast, continued to show significant surpluses until 1987, cushioning the deterioration in the external balance. Without this net investment income, the external deficit from 1982 to 1987 would have been some \$23 billion larger on an annual average basis. The balance on other services such as transportation and tourism showed no significant change, on average, over the 1982-87 period relative to the earlier postwar period.

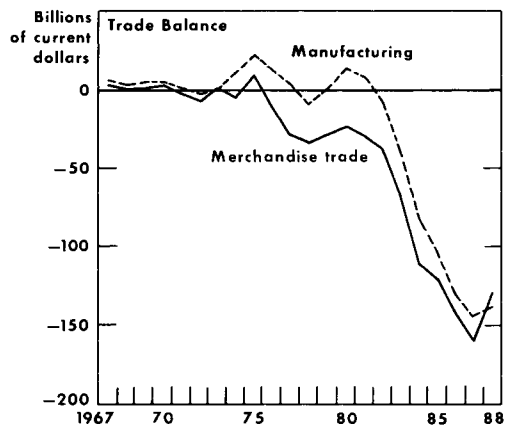
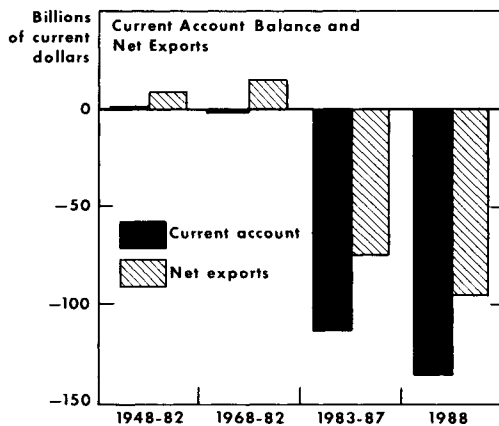
With rising service costs on the rapidly accumulating external debt, the balance on international investment earnings is now in the process of turning into a deficit. This deficit will grow over time as U.S. external debt increases and will become an increasingly important drag on the external balance.

<sup>2</sup>The current account differs from net exports due largely to differences in the treatment of unilateral transfers, trade with Puerto Rico and the Virgin Islands, and certain items on international investments.

**Chart 1. UNITED STATES INTERNATIONAL DEFICITS**

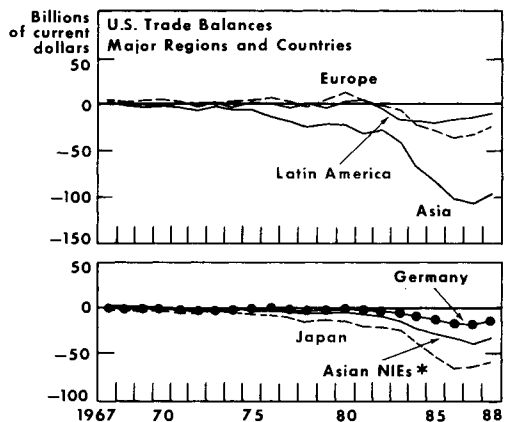
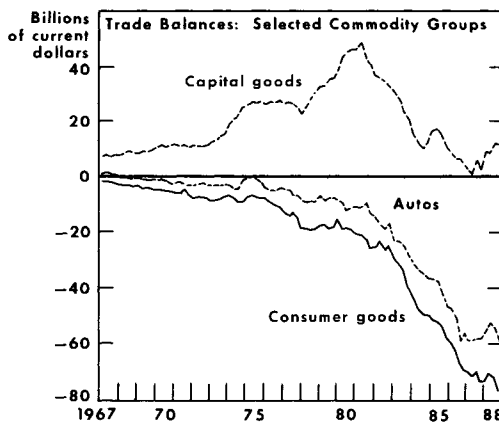
In a major departure from the past, the United States has experienced huge external deficits since 1982 . . .

. . . largely due to a worsening in the manufacturing trade performance . . .



. . . for a broad range of goods . . .

. . . across major world regions and countries.



Sources: U.S. Bureau of the Census, "Highlights of the U.S. Export and Import Trade," Report FT990; U.S. Bureau of Economic Analysis; FRBNY estimates.

Note: All figures are on a National Income and Product Accounts basis except the current account deficit (Balance of Payments basis) and the regional trade balances (c.i.f. basis for imports).

\*Asian newly industrialized economies include Hong Kong, Singapore, South Korea, and Taiwan.

The worsening of U.S. merchandise trade performance through 1987 was widely spread across most major commodity groups (Chart 1). At the broad end-use category level, there seem to be only two significant exceptions: imports of petroleum and related products have declined substantially since the early 1980s because of the sharp drop in oil prices, although increases in oil import volume in recent years have offset a part of the earlier decline; and the balance on industrial supplies and materials has not shown any significant change on average, judged in terms of its longer history, but it has deteriorated relative to the 1980-82 period.

The trade deficit on consumer goods tripled from 1982 to 1987, and the deterioration of the balance on auto trade was even more severe over that same period. For both commodity groups, substantially faster-than-trend growth of imports as well as a sharp slowdown in export growth contributed to the increase in deficits. The once huge U.S. trade surplus on capital goods had virtually disappeared by 1987 and only a modest fraction of the lost ground was regained during 1988; capital goods imports now make up about one-third of total domestic spending on producer durables. U.S. agricultural exports declined by more than one-fifth over the period 1982-87, in part because of rising food production abroad and protectionist policies toward food production and trade.

The decline in U.S. trade performance through 1987 is also widely spread across major world regions, as has been a partial reversal of the trend during 1988 (Chart 1). Over the period 1982-87, the U.S. deficit with Japan increased by about \$40 billion to reach \$60 billion in 1987, while the deficit with other Asian countries increased by a somewhat smaller amount. The deterioration in U.S. trade with the latter group occurred at a particularly rapid pace, reflecting a major weakening in our trade position against such newly industrialized economies as South Korea and Taiwan, which have become highly competitive producers of a broad range of capital and consumer goods. In 1981, the United States had small surpluses with Europe and Latin America, but those surpluses had turned into substantial deficits by the mid-1980s. U.S. exports to Latin American countries were considerably hurt by the international debt crisis, which severely constrained those countries' capacity to import to the special detriment of the United States, the region's major trading partner.

Overall, the external imbalance is largely an imbalance in the trade of manufactured goods; on average, the manufacturing trade deficit has accounted for more than four-fifths of the total merchandise trade deficit since 1982 (Chart 1). Like the overall international deficit, the manufacturing trade deficit emerged in 1983 and expanded rapidly over a relatively short period through 1987, in sharp contrast to the small

surpluses or roughly balanced position over much of the earlier period. The manufacturing trade balance improved moderately during 1988.

Since the trade deficit is widely distributed across a broad range of commodities and major world regions, special factors such as country- and commodity-specific developments and the developing country debt problem appear to have played only a limited role in the worsening of our trade performance. Moreover, the heavy concentration of the deficit toward manufacturing goods indicates an important role for changes in demand conditions and prices. These considerations are consistent with a view that our poor trade performance has been driven largely by macroeconomic forces, making it particularly important to examine other parts of the national income accounting framework.

## The Output-Spending Gap

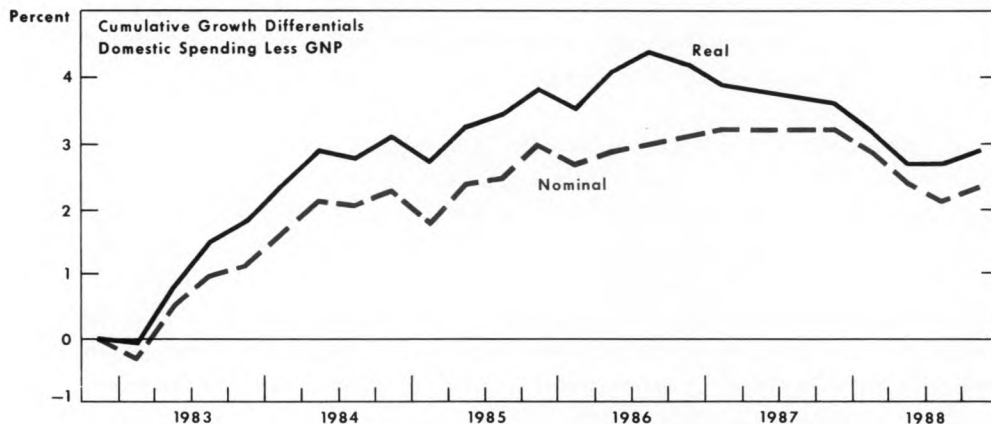
Since the external deficit is about equal, by definition, to the excess of domestic spending over domestic output, we have been spending, as a nation, considerably more than we have been producing since 1982 (Chart 2). Behind the large output-spending gap has been a more rapid growth of overall spending relative to GNP during the current expansion than during any earlier prolonged expansion. The cumulative growth differential between domestic spending and output continued to widen to mid-1986 in real terms and to late 1987 in nominal terms, reaching a peak of about 4½ percent of GNP in real terms. More recently, the growth differential has narrowed, but it is still between 2½ and 3 percent of GNP in both real and nominal terms.

The national output-spending gap since 1982 reflects a major break from the past on the spending side, but not on the output side. The growth of nominal GNP over the last six years averaged quite close to the average for the whole postwar period. Real GNP growth was, in fact, about one-half percentage point higher, on average, in the recent period relative to the whole postwar period.

Of the three main aggregate components of domestic spending on goods and services—private consumption, investment, and government purchases—only private consumption has grown at a much faster pace in recent years relative to the pre-1982 period. The other two components as GNP shares have not shown significant changes, on average, during the current expansion from the average levels over the earlier period. Developments in the three components thus seem to imply that the external imbalance problem is limited to consumer spending alone. This is quite misleading, however, and a closer look at relevant details reveals a substantially more complex picture of the problem.

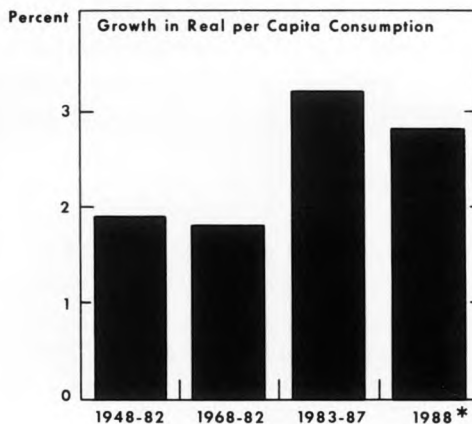
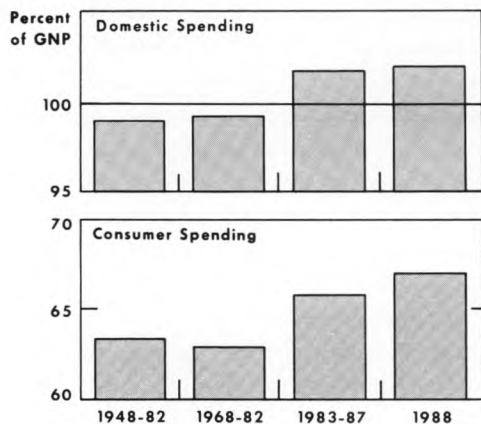
**Chart 2. DOMESTIC SPENDING AND GNP**

**Underlying the international deficit has been an exceptionally rapid pace of domestic spending. . . .**



**. . . We have been spending more than we have been producing, with a larger share devoted to consumption. . . .**

**. . . Higher consumer spending has helped boost our living standards.**



\* Fourth quarter 1987 to fourth quarter 1988 growth.

Private consumption expenditures relative to GNP have clearly been unusually high during the present recovery relative to postwar history. As a nation, we have consumed, on average, two and a half percentage points more of total output since 1982 than the average over 1948-82, and three to three and a half percentage points more than during the late 1970s (Chart 2). Reflecting, at least in part, this upward shift in the share of consumer spending in total GNP, real per capita consumption has grown at a 3 percent average annual rate during the last six years, about 75 percent faster than the rate over 1968-82.

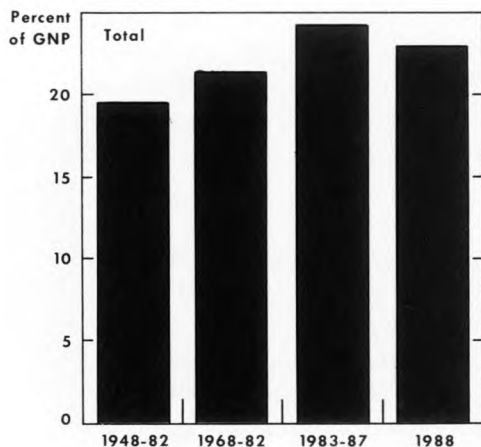
As noted above, total government purchases on goods and services relative to GNP have not been significantly larger in recent years than in the earlier period, with the federal government share, in fact, now lower than the average over 1948-82. Government spending on goods and services, however, accounts for less than 60 percent of total public sector outlays. The remainder represents various types of government transfer payments to the private sector, including entitlements and other mandatory spending programs, and interest on government debt. On a consolidated basis, these outlays reflect federal activities since the combined transfer payments of state and local governments are generally less than federal grants-in-aid.

For the federal government, only about one-third of total outlays is used to purchase goods and services while the bulk of the remainder represents transfers to individuals in the form of social security benefits, medicare and medicaid payments, and a range of other entitlement programs (Chart 3). All government expenditures contribute to private spending through increases in incomes, but federal transfer payments to individuals are a particularly important source of household consumption expenditures. These transfer payments are almost fully and immediately converted by recipients into consumption spending, leading to higher total private consumption expenditures than would otherwise be the case. Viewed in this way, close to 15 percent of private consumption spending in recent years has resulted from federal transfer payments to individuals. More generally, the point is that federal government transfer payments, which have been substantially greater since the early 1980s than in the earlier period, do not add to output but they do add to purchasing power and domestic spending.

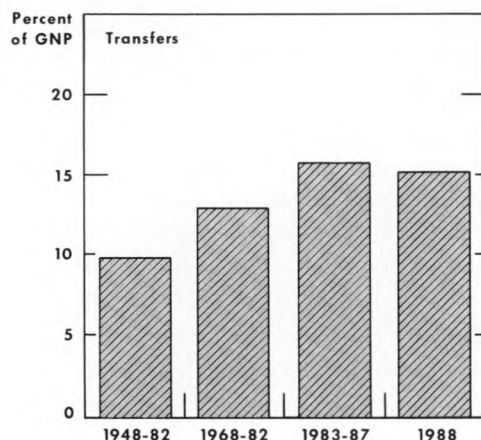
The share of gross investment in GNP since 1982 has averaged about the same as the average level over the whole postwar period through 1982 but is somewhat lower than the average over the 1970s. In real terms, the share of gross investment in GNP has, in fact, risen relative to its longer history. But one cannot draw much comfort from these figures because the rate of capital formation, measured by investment net of depreciation, has proceeded much more slowly in recent years relative to the earlier period. As a result of a shift toward capital goods with shorter life, more investment

### Chart 3. FEDERAL OUTLAYS

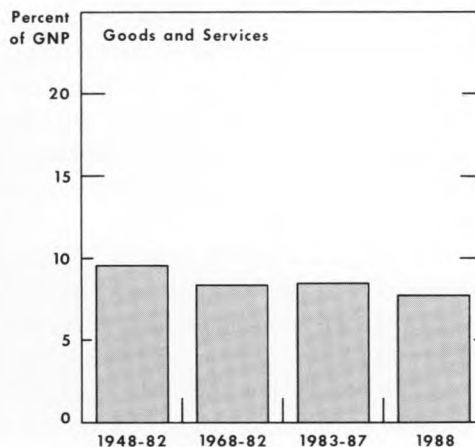
Federal outlays relative to GNP have been much higher in the 1980s than before. . . .



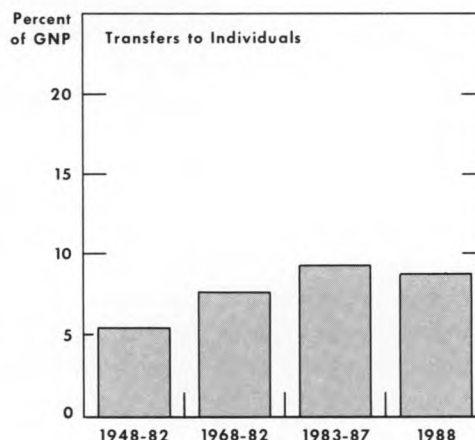
. . . outlays for social services and other transfers have increased very substantially, . . .



. . . While the share of GNP spent on government purchases of goods and services has not changed, . . .



. . . with increased benefits for the household sector.



has been required to provide for replacement of the existing capital stock, making gross investment a deceptive indicator of the additions to capital stock.

During the present recovery, the level of net investment as a ratio to GNP has averaged about 5 percent, nearly two percentage points below the postwar average level through 1982 and almost one and a half percentage points below the average over the more recent 1968-82 period (Chart 4). Net investment picked up somewhat during 1988 but it remains well below the average levels in the earlier period. As compared with the 1962-82 period, all of the decline comes from the business sector, and slightly more than half is attributable to the manufacturing sector. In fact, net manufacturing investment showed no increase from 1982 through 1987 and edged up only slightly in 1988.

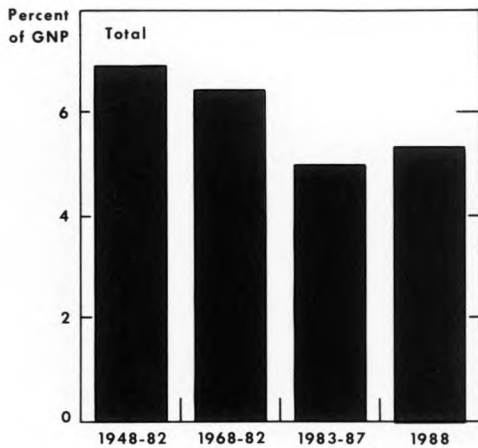
Net investment figures in terms of current dollars seem to exaggerate the recent weakness of capital formation, however. Since 1982, the ratios of both real net business investment and its manufacturing component to total output have averaged somewhat higher than their counterpart nominal ratios, with the difference largely attributable to a decline in computer costs. The disparity between real and nominal net investment shares of output is not significant enough to alter the basic pattern that investment performance has been much weaker in recent years than in the earlier period. But it does suggest that changes in capital stock are difficult to measure precisely and that net investment data should be viewed only as rough estimates of those changes. In any event, our poor investment performance has important implications for external adjustment, future productivity, and living standards, which are pursued below in the section on the need for adjustment.

The reduced share of net investment spending in GNP has been accompanied by greatly increased financing of investment from foreign sources of funds, that is, by borrowing from abroad. Our foreign borrowing reflects, of course, the need to finance the external deficit and makes up, by definition, the shortfall of domestic saving relative to investment. Viewed from this perspective, more than half of our net private investment since 1982 has been financed by net foreign savings inflows to the United States for purchases of financial and nonfinancial assets. As a result, total foreign holdings of American assets—physical assets, equity securities, bonds, and other financial instruments—have risen very sharply in recent years. These holdings can be thought of as representing *gross* foreign claims, either direct or indirect, on our capital stock; the total amount of such holdings is now equivalent to almost 13 percent of the U.S.

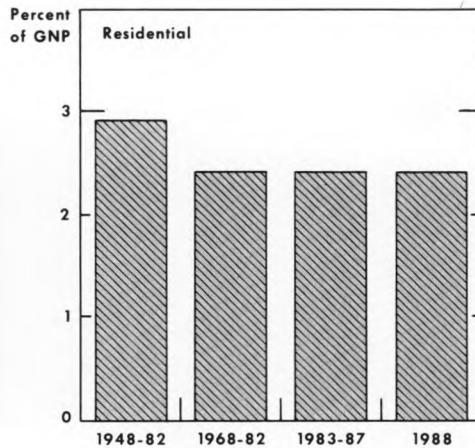


**Chart 4. NET PRIVATE INVESTMENT**

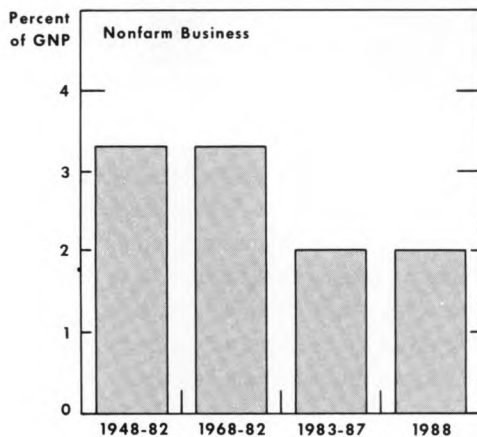
Since 1982 net private investment has performed poorly relative to GNP. . . .



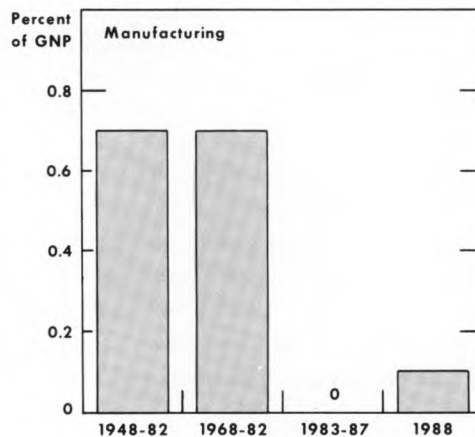
. . . The residential net investment component has held steady, . . .



. . . but the business investment share has declined greatly. . .

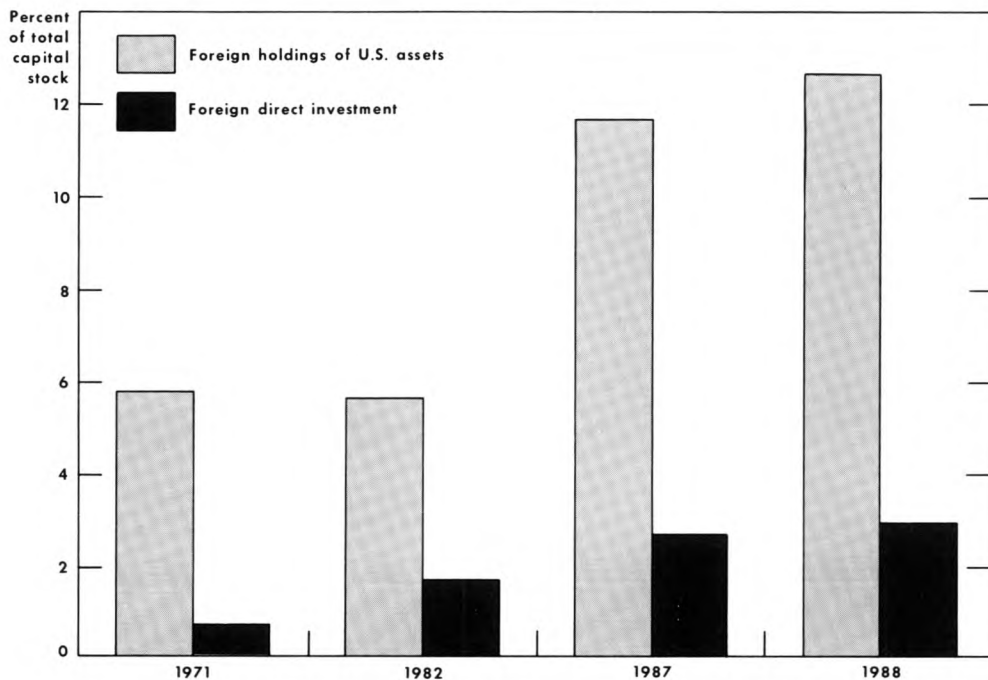


. . . and the manufacturing investment component has stagnated.



**Chart 5. GROSS FOREIGN CLAIMS ON UNITED STATES CAPITAL STOCK**

**Reflecting heavy financing of investment by borrowings from abroad, the share of American assets held by foreigners has more than doubled since 1982.**



capital stock, compared with only 6 percent in 1982 (Chart 5).<sup>3</sup> The bulk of foreign holdings are in the form of various types of financial assets, with the share of foreign-owned direct investment stock accounting for only about 3 percent of our total capital stock.<sup>4</sup> U.S. capital stock with foreign direct or indirect claims contributes to labor income and productivity just the same as capital stock owned by Americans. Foreign claims on U.S. capital stock, however, will yield future investment income to foreigners and not to Americans, thus lowering our future income and possibly our living standards.

<sup>3</sup>The net external position, the difference between foreign holdings of U.S. assets and U.S. holdings of foreign assets, is discussed below in the section on financial consequences.

<sup>4</sup>Foreign direct investment is defined as ownership by a single foreign direct investor of at least 10 percent of the voting securities, or the equivalent, in a U.S. enterprise.

## The Saving-Investment Gap

The national saving rate—the average rate for all sectors including dissaving of the federal government—dropped markedly during the 1980s and more than fully accounts for the saving-investment gap. From an average of about  $6\frac{1}{2}$  percent of GNP in the 1968-82 period, net national savings fell by about two-thirds to an average of about  $2\frac{1}{2}$  percent of GNP in the 1983-88 period; the rate fell below 2 percent in 1986 and 1987 but recovered somewhat during 1988 to just above the average level over the last six years (Chart 6). Of course, without the recent decline in the ratio of net investment to GNP, the saving-investment gap would have been even larger.

Both private and public sector sources of savings have contributed to the decline in the national saving rate. On the private sector side, the rate of corporate saving has shown no significant change, on average, during the present expansion from the preceding 15 years, but the household saving rate has dropped sharply in recent years. Reflecting the decline in household saving, total net private saving as a ratio to GNP averaged about two percentage points below the level over the 1968-82 period (Chart 6). Household saving as a ratio to GNP fell to the lowest levels in the postwar period during 1986 and 1987, and averaged only about  $3\frac{1}{4}$  percent over 1983-87, compared with  $5\frac{1}{4}$  percent over 1968-82. In 1988, the household saving rate recovered somewhat but not enough even to match the already low average of the preceding five years.

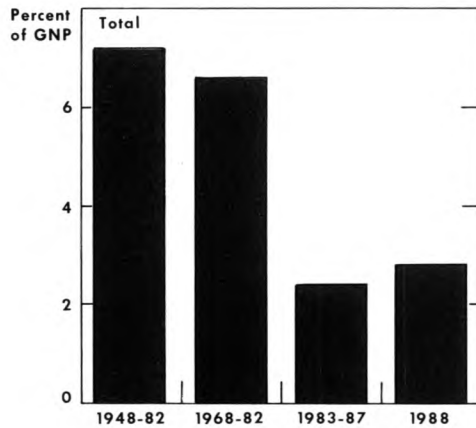
The largest contribution to the decline in national saving as a ratio to GNP has come from the unprecedented increase in dissaving generated by federal budget deficits since the early 1980s (Chart 6). Nearly 70 percent of the decline in net national saving from the 1968-82 period to the 1983-87 period is attributable to the rise in federal budget deficits. For the public sector as a whole, however, this adverse effect on national saving was partially offset by the increase in state and local government surpluses resulting from a rapid growth of pension fund contributions.

To some extent, the decline in the level of net investment relative to GNP reflects unusually high private consumption spending and the corresponding decline in the household saving rate. The persistently larger federal deficit, however, bears much greater responsibility for the reduced rate of private capital formation. Since the federal budget deficit must be financed regardless of the level of interest rates, it has pulled away resources from the private sector. Specifically, increased federal government borrowing against the small pool of private saving has contributed significantly to the weak performance of private investment. The adverse effects of the federal deficit on capital formation would have been considerably greater were it not for substantial U.S. borrowings from abroad (that is, the inflow of foreign savings), which attenuated those

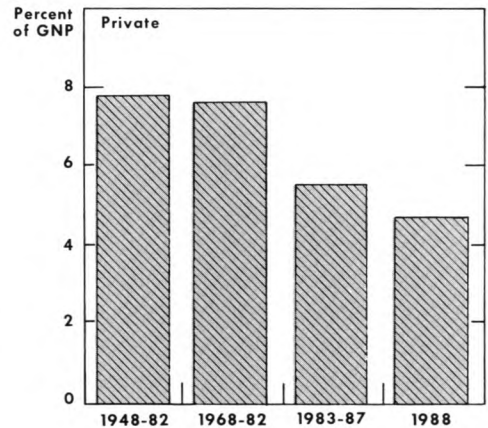
**Chart 6. NET SAVING**

The national saving rate has declined markedly since the early 1980s, . . .

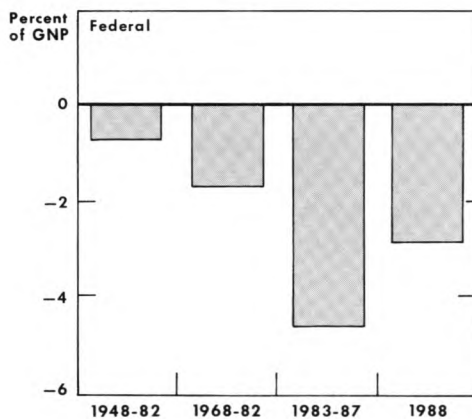
. . . reflecting both a decline in the private saving rate and . . .



. . . a huge rise in the federal budget deficit. . . .



. . . Increased state and local government surpluses have moderated the decline somewhat.



effects in part by helping to keep U.S. domestic interest rates lower than otherwise would have been the case.

During the last two years or so, the federal budget deficit has fallen very substantially to about 3 percent of GNP in 1988. It is, however, still very large by historical standards; in the postwar period until 1982, the actual federal budget deficit exceeded 3 percent of GNP only in the 1975 recession period. Put differently, the 1988 federal budget deficit was still large enough to offset fully all household savings.

## **The International Dimension**

Our historical review of the three gaps clearly indicates that macroeconomic forces have played a central role in the development of external imbalances. To emphasize the main point, the external deficit has been closely associated with exceptionally high levels of domestic spending on consumption and with a sharp decline in the national saving rate. Both overspending on consumption and undersaving in the economy are driven by the household and the federal sectors. At the same time, despite continued excess domestic demand, the rate of capital formation, or spending on net investment, has declined markedly in recent years.

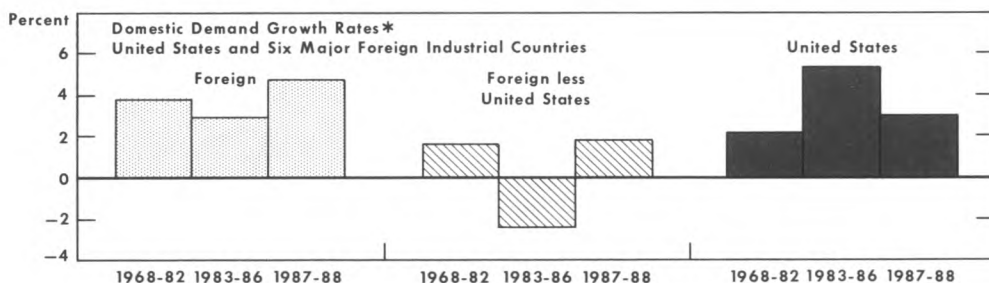
Any overview of the evolution of the U.S. external deficit would be incomplete without some consideration of two other factors: the pace of overall demand and economic growth in our major trading partners, and the dollar exchange rate. Developments in these two factors over the period 1982-86, interacting with, and to some extent reflecting, our domestic spending and saving imbalances, have contributed significantly to the size and persistence of our international deficit.

By increasing the demand for imports, our historically high levels of household and overall domestic spending increased our external deficits directly. Moreover, those high levels of domestic spending came at a time of sluggish demand growth in major foreign industrial countries. Domestic spending growth abroad underwent a significant slowdown over 1982-86 from the earlier period, in part because of restrictive fiscal policies in some countries (Chart 7). The slowdown in domestic spending abroad contributed substantially to the weak performance of U.S. exports over this period. It also created additional incentives in foreign countries for increasing exports to the United States; this may help account for the fact that major foreign industrial countries, as a group, exported a larger share of their output to the United States over the period 1982-86 than in the preceding 15 years (Chart 8).

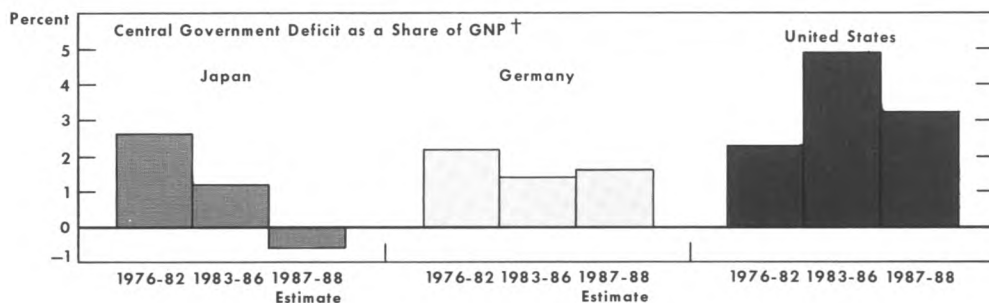
A disproportionate share of domestic and foreign spending was shifted from U.S.

# Chart 7. DEMAND CONDITIONS ABROAD

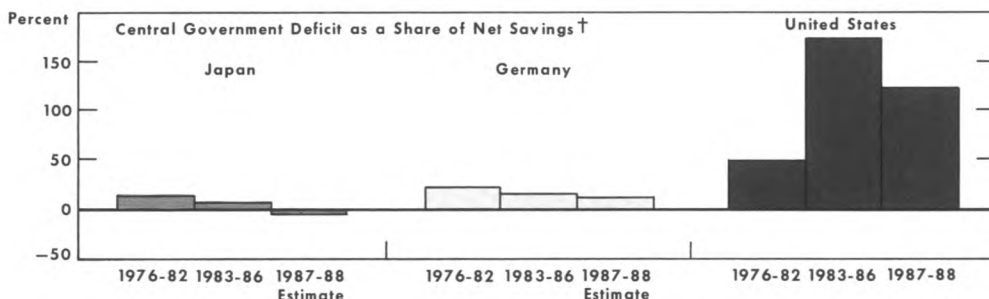
Contributing to our external deficit was a slowdown in domestic spending growth abroad during 1983-86 . . .



. . . reflecting, in part, restrictive fiscal policies in some countries; central government deficits in Japan and Germany fell in relation to GNP . . .



. . . and relative to net saving.

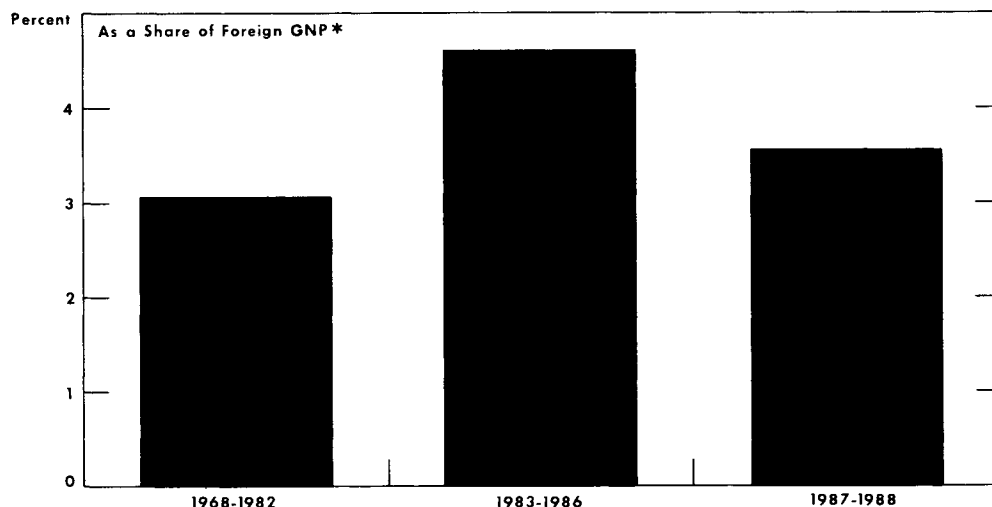


\* Weighted average of growth rates of Canada, France, Germany, Italy, Japan, and the United Kingdom.

† Central government deficits are on a National Income and Product Accounts basis and include social security funds. Excluding social security funds, central government budget balances may be significantly different; for example, the Japanese central government deficit, as a share of GNP, during 1983-86 is estimated to be 1¼ percent with social security and 4 percent without social security.

**Chart 8. MAJOR FOREIGN INDUSTRIAL COUNTRY EXPORTS TO THE UNITED STATES**

**Sluggish demand conditions abroad increased incentives for exports to the United States.**



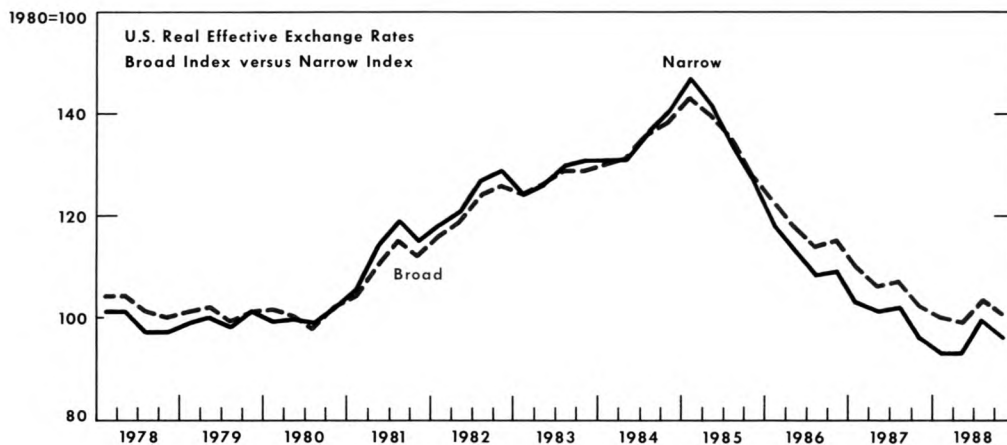
\* Including Canada, France, Germany, Italy, Japan, and the United Kingdom.

goods to foreign goods because of the dramatic rise in the exchange value of the dollar over the first half of the 1980s (Chart 9). By making foreign goods much cheaper relative to American goods, the rise of the dollar contributed greatly to the decline in U.S. international competitiveness, especially in the trade of manufacturing goods, and was probably the biggest single factor in the acceleration of imports and stagnation of exports.

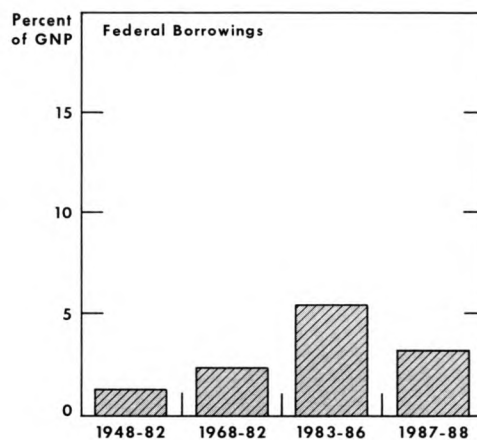
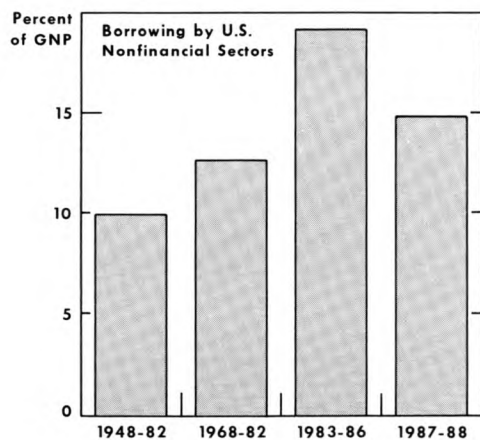
To a considerable extent, however, the dollar's movements have reflected the U.S. macroeconomic imbalances, the excess of domestic spending over output, and the shortfall of national saving relative to investment. Contributing greatly to the dollar's rise through the mid-1980s were exceptionally heavy demands on domestic credit markets arising, to a substantial degree, from the federal government. From 1982 through 1986, the total funds borrowed in domestic financial markets as a ratio to GNP were about one-third higher than the average level over the 1968-82 period and

# Chart 9. THE DOLLAR AND DOMESTIC CREDIT DEMANDS

By making foreign goods cheaper relative to U.S. goods, the dollar's rise during 1981-85 played an important role in weakening our trade performance. . . .



. . . But the dollar's strength was attributable, at least in part, to greatly increased U.S. credit demands, with the federal government accounting for about half the rise in total borrowings.



Sources: Morgan Guaranty for broad index (40 countries); FRBNY staff for narrow index (14 industrial countries).



almost double the level over the entire postwar period through 1982 (Chart 9). The federal government accounted for about one-half of the increase in borrowings, acquiring on average close to one-third of the total funds borrowed over 1982-86, up from 15 percent over 1968-82. In any event, the record levels of borrowing against the limited pool of domestic private saving played an important role in pushing up the dollar's exchange value against other currencies by keeping U.S. real interest rates high by historical standards.

## FINANCIAL CONSEQUENCES OF EXTERNAL DEFICITS

Since the excess of domestic spending over output must be financed by borrowings from abroad, the export-import gap is approximately equal to the net inflow of capital from foreign countries into the United States. From another perspective, looking at the other side of the national accounts identity, this simply means that the shortfall of national saving relative to domestic investment must be met by foreign savings inflows. Thus, the net capital inflow into the United States is the mirror image of the external deficit, that is, of the three essentially equal gaps in the national income accounts.

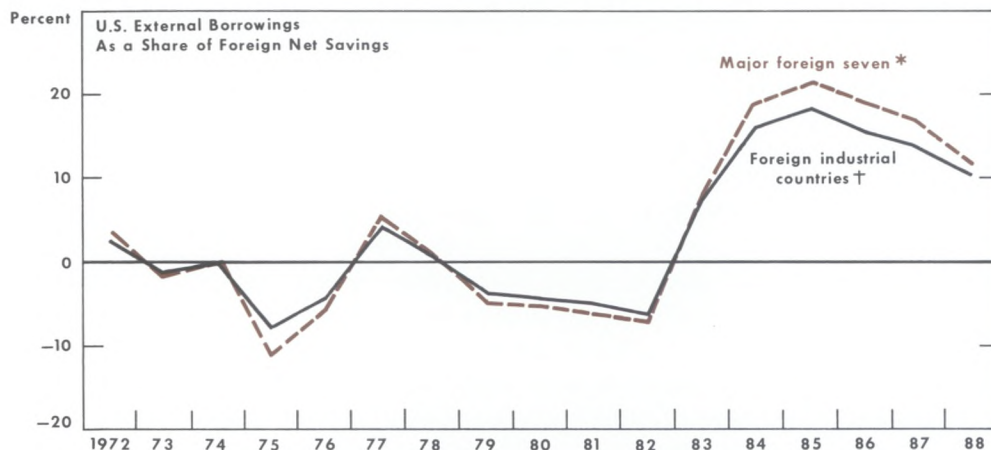
Reflecting the continued external deficit, U.S. borrowings abroad have averaged about \$100 billion on an annual basis over the last six years. (The net capital inflow has been smaller than the current account deficit due to the positive statistical discrepancy that represents errors and omissions in the balance of payments accounts.) The ultimate source of our financing is the savings of foreign countries with external surpluses, primarily other industrial countries. For the period as a whole, our borrowings used up about 14 percent of total net savings of all other industrial countries, with the ratio peaking at about 18 percent in 1985 (Chart 10).

From 1983 to 1985, all of the external financing was provided by private capital inflows. More than four-fifths of those inflows consisted of bank financing and securities acquisitions by foreigners, while direct investment flows accounted for only about 15 percent of the overall financing requirement (Chart 10).

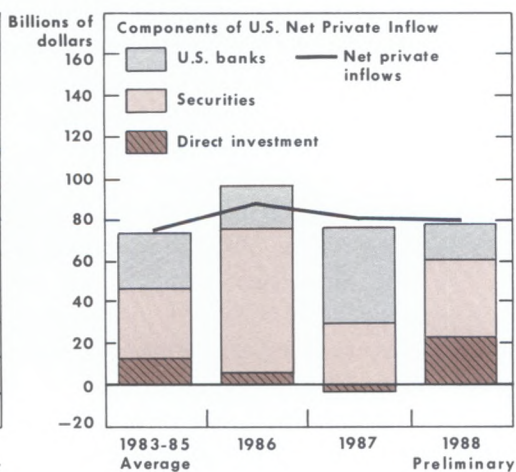
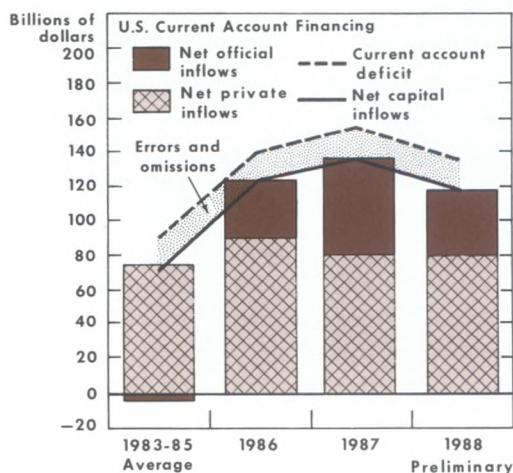
Since 1986, private sources have financed significantly less than the full amount of the external deficit, with increases in net official holdings of dollar assets making up the shortfall. The official contribution to financing was particularly large in 1987 when central bank purchases of U.S. dollar assets were almost equal to our entire external deficit. This contribution is understated in the reported data, however, because official purchases of dollar assets from private financial institutions abroad are not recorded

**Chart 10. FINANCING OF THE CURRENT ACCOUNT DEFICIT**

To pay for the excess of domestic spending over output, the United States has borrowed a considerable portion of net savings of foreign industrial countries in recent years. . . .



. . . Our borrowings abroad were almost fully financed through private inflows from 1983-85, but official financing has played a significant role in the subsequent period.



\*Includes Canada, France, Italy, Japan, Switzerland, United Kingdom, and West Germany.

†Includes all OECD countries except the U.S.

as official inflows in the U.S. balance of payment statistics; instead, such purchases usually appear under private bank inflows since official deposits put in the banks abroad are channeled through the interbank market back to the United States. In 1988, the official sector played a much less important role in financing the external deficit, and the reported data probably overstate the extent of official financing due to a partial reversal of the 1987 effect, as some government reserves abroad were redeposited in the United States.

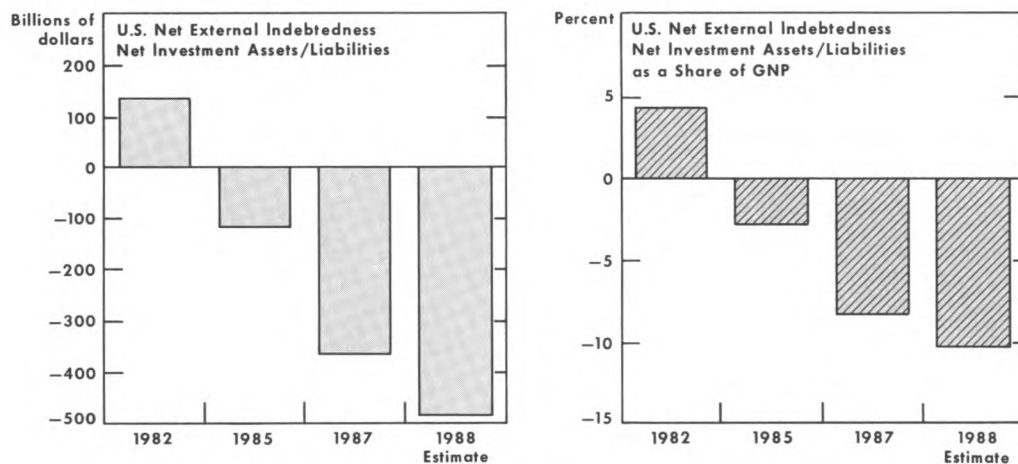
Reflecting continued large borrowings abroad, the U.S. external debt has accumulated rapidly in recent years. Taking account of holdings of both financial and nonfinancial assets, the United States has moved from a net creditor status of \$140 billion in 1981-82 to a position as the world's largest debtor by far, with an outstanding net external debt of nearly \$500 billion at end 1988 (Chart 11). This major shift in the net international investment stock position corresponds to our cumulative borrowings from abroad since 1982, adjusted for net valuation effects mostly reflecting changes in the dollar exchange rate and prices of security holdings. (Net valuation adjustments can be substantial on a year-to-year basis but are normally less important over a longer period.) In any event, because of difficulties in measuring market values of U.S. assets abroad and foreign assets here, the net external investment position is not a precise statistical measure but a rough indication of the indebtedness.<sup>5</sup>

The composition of assets underlying the net international investment position has been an important factor in moderating the deterioration in our net investment income balance, despite rapidly accumulating net external indebtedness. Specifically, the share of direct investment in U.S. assets abroad is significantly larger than the direct investment share of foreign assets in the United States. In effect, this has meant that our net direct investment position, even after substantial deterioration, has remained positive through 1988. This positive position, together with higher rates of return on long-established U.S. investments abroad relative to newer foreign direct investments here, has resulted in a more gradual deterioration of our net investment income than of the overall net investment stock position.

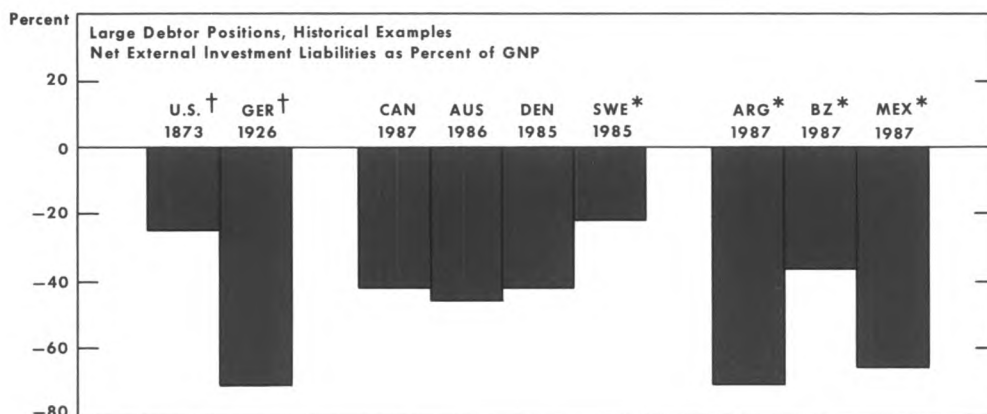
<sup>5</sup>The actual level of our net external investment position may be significantly different from the reported level, but the direction of the difference is difficult to determine. For example, U.S. direct investment abroad is carried at book value, resulting in an understatement of our foreign assets. On the other side, the large cumulative statistical discrepancy is generally thought to consist primarily of unrecorded capital inflows that lead to an understatement of foreign assets in the United States. While the level of net indebtedness may be in question, the direction of change is clear.

**Chart 11. UNITED STATES EXTERNAL INDEBTEDNESS**

Having increased rapidly since 1982, the U.S. external debt is now close to five-hundred billion dollars, or about 10 percent of GNP. . . .



. . . While the U.S. situation is unique in some important respects, our external indebtedness is not particularly high, judged in relation to other high debtor cases.



\* Does not include foreign direct investment.

† Estimates.

In absolute dollar terms, the U.S. external debt is the largest in the world. But judged in relation to GNP, our external debt of 10 percent at end 1988 was neither particularly large nor historically unprecedented. In recent years, other countries have recorded much higher levels of external indebtedness relative to GNP, and in the distant past, both the United States and other countries have experienced this condition (Chart 11).

Most other instances of high debt, however, appear to have been special cases of one kind or another with differing economic consequences. Major wars usually leave heavy debt burdens, but these debts are paid off or otherwise settled over time. Historical examples of war debt abound but reliable data are difficult to piece together; German indebtedness arising from the First World War fit this pattern. The post-Civil War economic boom in the United States, with heavy emphasis on the railroad expansion, was largely financed by foreign capital and ended in the financial panic of 1873, followed by several years of economic depression. Natural resource countries have historically relied on foreign capital for economic development although the dependence on foreign capital usually falls or at least stabilizes as the countries become developed. In a long-run context, Canada and Australia exemplify this situation to some extent, but both countries have experienced significant periods of balance of payments difficulties as well. Some small developed open economies, such as Denmark and Sweden, have attempted to supplement their domestic spending by borrowing from abroad, as have several developing countries in recent years; these countries have frequently found it very difficult to sustain their debt burdens over the long run and have experienced a substantial, if not complete, loss of independence in domestic policies.

These other cases of high debt burdens would appear to have only a limited relevance to judging the viability of the current U.S. situation. The present high level of U.S. external debt and its persistently strong rising trend are unique for a large industrial country unaffected by a major war. Moreover, to appreciate the magnitude of our debt problem, we must keep in mind that the United States is not just a large industrial country but the largest economy in the world by far; U.S. GNP accounts for about one-fourth of the world's GNP and is roughly equal to the combined GNP of Japan, Germany, France, and the United Kingdom. This means that our large external debt has substantial economic and political consequences not only for us but also for the rest of the world.

Viewed from this perspective, the current level of our external debt and its increasing trend are much more problematic than would be the case for any other country in a similar situation. While it may be possible for the United States to live for a long time with the present or perhaps even higher levels of external debt relative to GNP, there

are clearly significant and increasing costs associated with this outcome. In any event, an increasing level of external debt is not sustainable over time and, at a minimum, the external debt to GNP ratio will need to stabilize in the long run.

## **RECENT PROGRESS AND THE NEED FOR FURTHER ADJUSTMENT**

Since 1986 the federal budget deficit has fallen by almost two percentage points to 3 percent of GNP in 1988. Foreign domestic demand growth has accelerated, reversing a part of the gap between U.S. and foreign growth built up over the first four years of the present recovery. The dollar has declined, in both nominal and real terms, to around or even below its 1980 average level against the other currencies, and largely as a result of the lower dollar, U.S. manufacturing competitiveness has improved and exports have recovered substantially over the last seven or eight quarters.

The reversal of the macroeconomic forces underlying the external deficit is far from complete, however. The household sector and the federal government continue to drive the U.S. spending-output imbalance. And our national saving rate has not shown a significant recovery so far, largely because of the persistent federal budgetary dissaving. Reflecting both overspending on consumption and undersaving in the economy, U.S. net investment as a share of total output remains very low by historical standards.

### **The Current Situation**

Because of the amelioration in the underlying macroeconomic imbalances, all measures of our trade performance have shown considerable improvement during the last two years or so. The current account deficit is now running in the range of \$125 billion to \$135 billion, with the corresponding merchandise trade deficit about \$10 billion smaller. The overall external deficit is generally projected to fall somewhat further during this year but, on present expectations, it will remain above \$100 billion at least through next year. By definition, the continuing large external deficit will approximate the national output-spending gap and the national saving-investment gap, reminding us of different aspects of the problem.

Also by definition, the net external debt of the United States will increase further over time by the cumulative amount of the deficit. With accumulating external debt,

interest costs will continue to rise automatically. In other words, this component of the international balance is driven essentially by the level of external debt and is hard to influence directly by normal economic policy choices. In looking to the future, therefore, it is more useful to focus on the current account deficit net of service payments on external debt—the primary deficit on international transactions. Until recently, this primary deficit was considerably larger than the overall current account deficit, reflecting the surplus on the net investment income component. The two deficits are now about the same, but with increasing interest payments on external debt, the current account deficit will become gradually larger than the primary deficit.

The magnitude of our present external imbalances and future developments in them must be viewed in the context of several important features of the current economic situation:

- First, the economy is operating very near full utilization of its industrial capacity and labor resources. Real economic growth, therefore, cannot exceed the potential growth rate if inflationary pressures are to be avoided. The potential growth rate is probably in the range of  $2\frac{1}{4}$  to  $2\frac{3}{4}$  percent, significantly less than growth performance in recent years.
- Second, the federal budget deficit, at 3 percent of GNP, is still very large by historical standards; it remains a major drag on national saving and continues to contribute substantially to the excess of domestic spending over output.
- Third, net private investment relative to output is at a historically low level; the rate of capital formation has been particularly slow in the manufacturing sector over the last several years. In addition, more than half of recent net investment spending has been financed by savings inflows from abroad, significantly increasing the foreign share of total U.S. assets.
- Fourth, the willingness of private foreign investors to finance the continuing large external deficits over time is quite uncertain—more so in the future than before because of the already unprecedentedly large foreign holdings of U.S. debt—and could pose serious problems for interest and exchange rate movements and economic stability down the road.

Against this background, a continuation of large external imbalances poses a most serious threat to the medium- and long-term health of the U.S. and global economy.

The international deficit, therefore, appears to us to be one of America's most pressing economic problems, which must be reduced much further, or perhaps even eliminated, in coming years.

## The Need for Adjustment

At a purely technical level, the current primary international deficit of about \$135 billion at an annual rate is not sustainable in the long run.<sup>6</sup> With any plausible set of assumptions for interest rates, real growth, and inflation, a deficit of this size implies continuously and rapidly rising levels of external debt, both in absolute dollar terms and as a ratio to GNP. If, for example, both nominal GNP growth and interest rates are assumed to be at 7 percent, a continuation of today's primary international deficit would lead to external debt of \$3.5 trillion, or close to 32 percent of GNP, in 2000; by 2010 the level of debt would approach \$8.7 trillion, or about 40 percent of GNP (Chart 12). The corresponding overall current account deficit would stabilize at around 3¼ percent of GNP but it would continue to increase in dollars terms, reaching \$350 billion in 2000 and nearly \$700 billion in 2010.

The simple arithmetic of technical sustainability, by itself, tells us nothing about the underlying economic issues and their importance, even though it logically implies the need for a substantial reduction in the international deficit over the long run. The main issues concern, of course, the short- and long-term economic consequences of continuing large external deficits. In that context, there are at least three compelling economic reasons for adjustment of external imbalances.

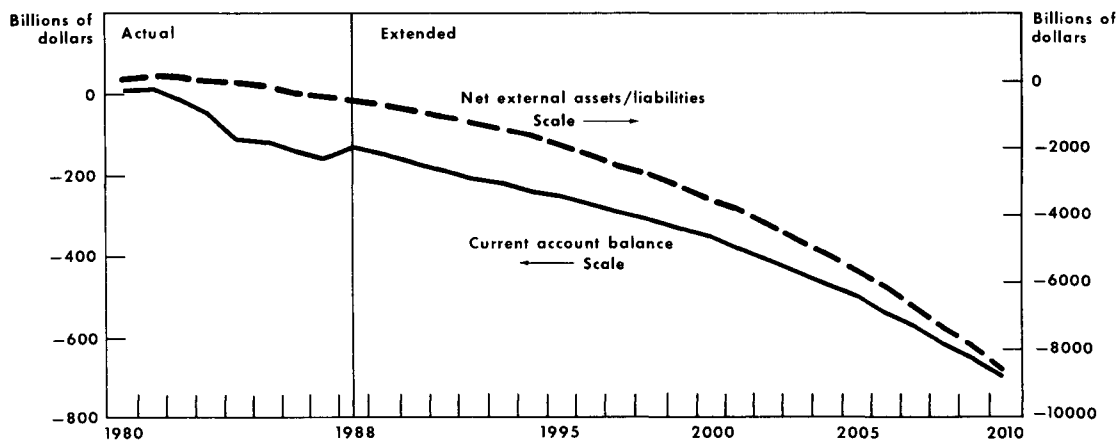
First, we need to stop and reverse a disturbing sharp decline in the level of net investment relative to GNP, and we need to do this in a context in which the bulk, if not all, of our investment is financed from domestic sources instead of capital inflows from abroad. The amount of net investment represents additions to the stock of productive capital of a nation, and some increases in that stock are necessary just to keep pace with a growing labor force in order to avoid a weakness in labor productivity. Further increases in capital stock are needed to raise productivity and to advance living standards because technological developments are usually incorporated in the production process through new machinery and equipment.

<sup>6</sup>The *preliminary* 1988 estimate for the primary deficit is about \$138 billion, \$3 billion larger than the corresponding current account deficit; both deficits were somewhat lower in the second half of the year. The starting point for calculations of various illustrations and future scenarios is a primary deficit of \$135 billion.

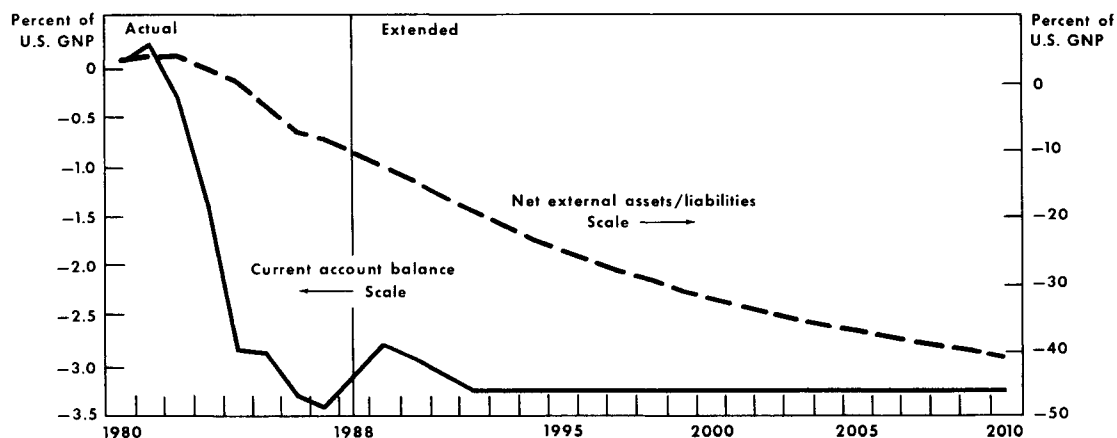


**Chart 12. UNITED STATES CURRENT ACCOUNT DEFICIT AND EXTERNAL INDEBTEDNESS:  
AN ILLUSTRATION**

**If our overall international deficit, net of interest payments, continues at its present level,  
the external debt could reach over eight and one-half trillion dollars by 2010, . . .**



**. . . amounting to about 40 percent of GNP.**



Real net business investment in relation to GNP has been substantially weaker during the last six years than over the earlier period, with the manufacturing investment component averaging only about one-tenth of 1 percent of GNP. As a result of the slowdown in capital formation, the amount of capital per worker in both the whole economy and the manufacturing sector has been essentially flat since 1982, representing a significant shift relative to the earlier postwar period (Chart 13). If, for example, capital per worker in the manufacturing sector had continued to advance at the trend rate of the 1968-82 period, it would have been about 25 percent higher in 1988. These developments clearly indicate a major investment problem, although it is difficult to assess the exact extent of slowdown in the rate of capital formation because of the imprecise nature of data on real net investment and capital stock.

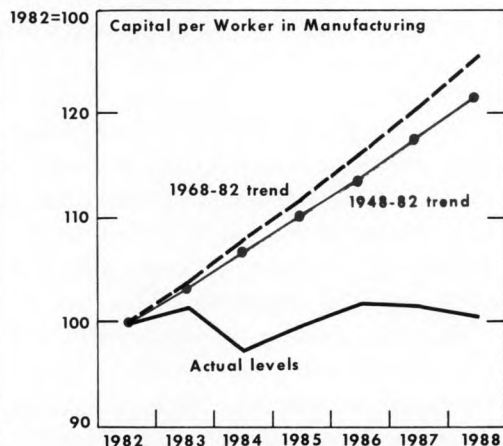
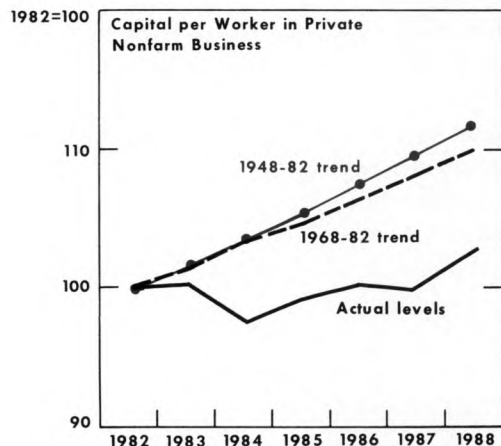
The slower growth of capital stock has also meant that the economy's capacity to produce goods and services has increased more slowly in recent years relative to the earlier period. In particular, manufacturing capacity growth has averaged about  $2\frac{3}{4}$  percent per year during the present recovery, down from more than  $3\frac{1}{2}$  percent in the preceding 15 years (Chart 13). Even this lower recent growth of manufacturing capacity may be overstated because it implies that new capital of recent vintage has been unusually more productive than the old capital it replaced. Specifically, since both capital stock and employment in the manufacturing sector have increased very slowly, the estimated capacity growth indicates that production technology in recent years has advanced at an exceptionally rapid pace of more than 2 percent per year, a rate faster than most estimates for the 1948-73 period. Some economists argue, however, that the manufacturing capital stock has in fact been higher than reported because measurement problems in computer machinery have led to an overstatement of computer costs and capital goods prices. Alternately, it is possible that the capital stock estimate is about right but that industrial capacity growth, which is also difficult to measure, is overstated.

Whatever the final resolution of these controversies, they appear to suggest that manufacturing capacity growth in recent years is unlikely to have been much higher than the reported rate of about  $2\frac{3}{4}$  percent. This low capacity growth implies a significant decline in the long-range trend growth performance of the manufacturing sector. More generally, the decline in the rate of capital formation and slow capacity growth, if not reversed, would most likely have significant unfavorable effects on productivity and living standards.

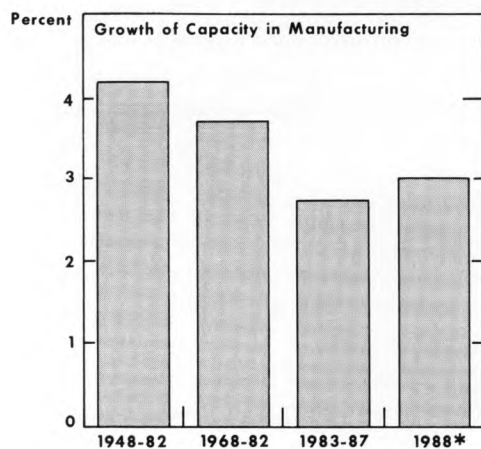
Future American living standards may also be adversely affected because of continued heavy financing of U.S. investment by net foreign savings inflow, which is equal by definition to the external deficit. Reflecting the increased foreign financing of domestic

**Chart 13. CAPITAL FORMATION AND CAPACITY GROWTH**

**In sharp contrast to the earlier period, capital per worker since 1982 has not increased very much, especially in the manufacturing sector, . . .**



**. . . and industrial capacity has advanced at a significantly slower pace than before.**



\* Fourth quarter 1987 to fourth quarter 1988 growth.

investment, total foreign claims on U.S. capital stock have risen very sharply in recent years and will continue to mount rapidly over time as long as large external deficits persist. As noted earlier, this shift has no implications for productivity and labor incomes; U.S. capital stock with foreign claims contributes to productivity and labor incomes just the same as capital stock owned by Americans. But investment income from foreign claims on U.S. capital stock will not accrue to Americans. Thus, increasing foreign claims on our capital stock could reduce our future income and living standards significantly relative to what would have been the case in the absence of those claims.

Reducing the external deficit would, by definition, lower the offsetting capital inflows from abroad required to finance the excess of domestic spending over output or the shortfall of domestic saving relative to investment. This would reduce the amount of U.S. investment financed by foreign savings inflows. And the falling rate of foreign holdings of U.S. assets would over time lead to a decline in the share of U.S. capital stock claimed by foreigners.

However, reducing the external deficit by itself would not increase the overall investment spending relative to GNP. In fact, there is no unique relationship between the share of investment in GNP and the external balance or its complement, the domestic saving-investment balance: a reduction in the saving-investment gap is fully consistent with either a decline or a rise in the investment share. Put differently, the excess of domestic spending over output can be generated as much by spending on investment as by spending on consumption.

The present external deficit, as noted earlier, reflects overspending on consumption and undersaving in the economy, which are driven by the household and federal sectors. The external adjustment problem, therefore, concerns the need to curb overspending on consumption and to raise the level of national saving. An adjustment of the consumption and saving imbalances would reduce the excess of domestic spending relative to output while simultaneously increasing the supply of national saving. The resulting availability of domestic resources would help raise the share of investment in GNP. Eliminating the domestic macroeconomic imbalances is all the more important because we can no longer run the economy above its long-range potential growth rate to provide both higher saving and higher consumption.

A second important reason for adjusting external imbalances is that potential difficulties in financing the international deficit pose major risks, ultimately centered on falling confidence in the dollar, to economic and financial stability. The United States has borrowed about \$600 billion over the last six years, and at this stage we are considerably dependent on foreign capital inflows to maintain orderly conditions in foreign exchange, money and capital markets. Continued borrowings at rates of \$100 billion annually

will impose significant economic costs in coming years and could, at some later date, lead to instability in financial markets.

The share of U.S. dollar assets in portfolios of many foreign, particularly Japanese, financial institutions has increased considerably in recent years. The willingness of foreign private investors to continue to add substantially to their U.S. dollar holdings could be quite uncertain. To a considerable extent, this may depend on whether the share of dollar assets in foreign portfolios continues to rise over time. But the large absolute size of dollar holdings abroad may also contribute to the reluctance of foreign private investors to increase their dollar assets, more so because many of them have suffered significant losses from the dollar depreciation in recent years. Shifts in foreign investor confidence are unpredictable, but unfavorable sentiment toward dollar assets is not just a theoretical possibility. Indeed, we have already had periods in recent years when private capital inflows essentially ceased for a while, with considerable adverse effects on the dollar and domestic interest rates.

It is clear that foreign confidence in U.S. dollar investments will be undermined over time if large external deficits persist; the longer we borrow large amounts from abroad, the greater the threat to confidence. It is also clear that private foreigners will continue to hold and accumulate claims on the United States only if the expected returns are sufficiently attractive relative to nondollar assets. Under these circumstances, continued large amounts of U.S. borrowings may not be feasible without significant downward pressures on the dollar or increases in domestic interest rates. And the possibility of a loss of confidence in foreign exchange and domestic financial markets cannot be ruled out.

Even without a loss of confidence, the resulting pressures on exchange and interest rates could damage economic stability considerably. At the very least, price increases associated with the dollar depreciation would complicate the task of maintaining low inflation, and higher domestic interest rates would tend to discourage domestic investment. To be sure, pressures on exchange and interest rates will not be eliminated even if the external deficit is on a declining path. But such pressures and the risks of a loss of foreign investor confidence will be much greater if the external deficit is not reduced further.

Whatever the extent of financing strains, a continued large spending-output gap is a significant threat to price stability, and this is yet another important reason for external adjustment. Until recently, the excess of spending over output had not resulted in an acceleration of U.S. inflation primarily for two reasons: the U.S. economy has been able to maintain output growth significantly above its long-term potential rate by employing idle resources, factories and workers; and import price increases have

remained relatively moderate, to a significant extent, because of spare industrial capacity abroad, despite substantial depreciation of the dollar in recent years. Both factors now appear to be on the wane. For the United States, capacity utilization in manufacturing is close to the prior cyclical peaks in 1973 and 1979, and the unemployment rate has fallen to its lowest level during the last 15 years. Abroad, capacity utilization levels in our major trading partners are now substantially higher than before, although foreign countries as a group still have more unused capacity than we do.

In recent years, both U.S. output and domestic spending growth rates have exceeded the economy's long-run growth potential, widely estimated to be  $2\frac{1}{4}$  to  $2\frac{3}{4}$  percent at an annual rate. With present resource constraints, future domestic spending and output growth in excess of this potential would lead to an upsurge in inflation and in any case could not be long maintained. More severe limits on potential growth and, therefore, stronger inflationary pressures could result if recent low rates of capital formation and industrial capacity growth were to slow future productivity growth and output performance significantly.

In any event, to avoid inflationary pressures, the domestic output-spending gap must be reduced by lowering spending and not by increasing output. That is, the growth of U.S. domestic spending must slow down sufficiently to bring GNP growth back into line with potential. If this does not occur, we could end up with a higher external deficit and higher inflation as the excess domestic demand spills over into the external market, on the one hand, and leads to strains in domestic labor and product markets, on the other. Moreover, a slowdown in domestic spending just enough to keep the external deficit from going up may not prove adequate to contain inflationary pressures. With the U.S. economy operating at or near full capacity and most of our major trading partners experiencing only moderate amounts of spare capacity, continuing large U.S. excess demand will eventually lead to an acceleration in inflation and inflationary expectations. A significant reduction in the excess of U.S. domestic spending over output would therefore appear to be necessary to contain price pressures.

## **POLICY OPTIONS FOR EXTERNAL ADJUSTMENT**

In pragmatic terms, the external deficit cannot be fully eliminated in the near term, at least not without a severe recession and other major disruptions in the economy. Achieving the needed adjustment will take several years because, even with significant policy initiatives, the underlying macroeconomic forces cannot be reversed immediately.

Moreover, it is probably not feasible to eliminate our overall international deficit on the current account balance even in the medium term: because of rising debt service payments, eliminating the current account deficit would require a considerable surplus on the primary balance, the current account balance net of interest payments on the external debt.

The elimination of the primary external deficit over the medium term, say about five years, would appear to be a more realistic and concrete target. One cannot be at all sure about the appropriate length of the adjustment period, but a five-year interval, on top of 1988, seems reasonable in that it would allow for a somewhat gradual reversal of the macroeconomic imbalances that were built up over five or six years.

To meet the adjustment target, the 1988 primary deficit of about \$135 billion would have to be reduced by \$25 billion to \$30 billion on an annual average basis from now through 1993. This is a slower rate of improvement than that achieved last year but it is sufficiently rapid to maintain confidence in the adjustment process. The adjustment path also may prove to be gradual enough to avoid a serious interruption of economic growth or a significant rise in inflation.

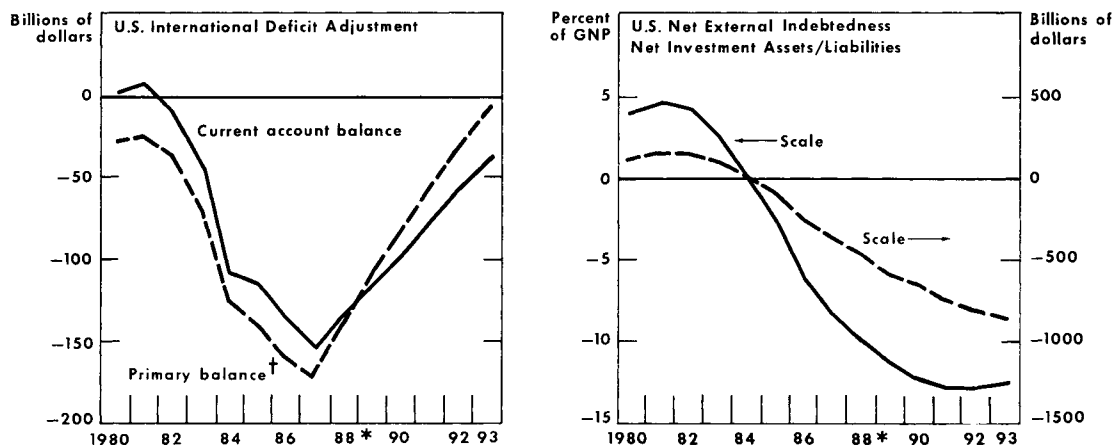
Under this adjustment scenario, the current account deficit would fall to around \$40 billion or roughly one-half of 1 percent of GNP by 1993 (Chart 14). The shortfall of domestic saving relative to investment would, of course, go down in line with the improvement in the current account balance. U.S. external debt would continue to increase in dollar terms through 1993 but as a ratio to GNP it would reach a peak of about 13 percent in 1991-92 and decline somewhat in 1993 as the external deficit fell further. The peak level of external debt at 13 percent of GNP is not intended as an optimal level; it results from eliminating the primary deficit over the next five years.

## **Necessary Conditions**

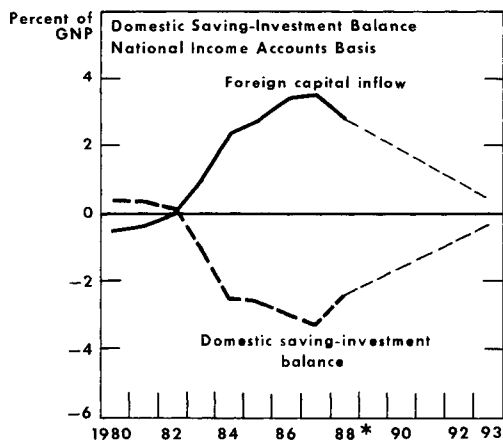
Theoretically, there is no unique policy approach to reducing the external deficit. Many different policies or combinations of policies can accomplish the task, although some of them may do more harm to the economy even as they achieve the needed reduction in the deficit. Regardless of policy choices and their effects on the economy, however, several conditions must be met at a macroeconomic level, almost as a matter of arithmetic, for the external adjustment to materialize. These necessary conditions are invariant with respect to immediate or ultimate sources of the external deficit and highlight different aspects of the adjustment problem as reflected in the national income accounts.

# Chart 14. EXTERNAL ADJUSTMENT

Eliminating the primary external deficit over the next five years would stabilize the ratio of external debt to GNP, although the absolute dollar amount would continue to rise over time. . . .



. . . The domestic saving-investment gap would narrow to about one-half of 1 percent of GNP and will have to be matched by a decline in the federal deficit or a rise in the private saving rate.



Sources: Economic Report of the President, Survey of Current Business, and FRBNY staff projections.

\* Data for 1989 through 1993 are based on an assumed adjustment scenario.

† Current account balance, net of interest payments on external debt.



Perhaps the most obvious necessary condition is that our exports of goods and services must grow substantially more rapidly, on average, than our imports over the next five years, and that the economy must have sufficient capacity to accommodate both the continued export expansion and domestic demand for home output. As a practical matter, this means, among other things, that imports must increase much more slowly in coming years than in the past, since otherwise the required growth in exports would simply be impossible to achieve. If, for example, imports were to grow at the postwar trend rate of about 12 percent from now through 1993, exports would have to advance at an annual average rate of about 17 percent to close the trade gap. The implied rate of export expansion is almost double the average pace during the postwar period and does not appear to be very plausible.

The bulk of the deficit reduction must come from the trade balance in manufacturing goods, given that the manufacturing sector accounts for more than four-fifths of the cumulative external deficit since 1982. Our other international transactions—agricultural exports, oil imports, and trade in services such as tourism and transportation—are likely to make only a modest contribution to the adjustment process. Under somewhat optimistic conditions, those transactions collectively might reduce the international deficit by about \$25 billion or so over the next five years.

For the manufacturing sector to close about 80 percent of the trade gap, industrial output would have to increase by at least 4 percent at an annual rate over the next five years, assuming that GNP growth does not stray very far from the  $2\frac{1}{4}$  to  $2\frac{3}{4}$  percent potential growth range for the economy. This calculation assumes that domestic purchases of manufacturing goods will increase at the same pace as the overall domestic demand, about  $1\frac{3}{4}$  percent per year, and that eliminating the primary external deficit in nominal terms would require roughly a \$130 billion improvement in real net exports. With present resource constraints for the economy as a whole, the increased manufacturing output would be adequate for diverting resources to exports and/or to replace imports with domestic production.

With manufacturing capacity utilization near historical peak levels, output growth cannot be expected to exceed capacity growth for long if inflationary pressures are to be contained. Since manufacturing capacity has advanced only about  $2\frac{3}{4}$  percent at an annual rate in recent years, output growth at the required 4 percent rate over the next five years is not feasible unless capacity growth accelerates. Eliminating our international deficit, therefore, will be possible only if there is a significant shift of resources to the manufacturing sector. In particular, manufacturing investment and capital stock will have to increase much more rapidly in the future than in recent years to ensure adequate capacity levels.

A second necessary condition is that the resource diversion into trade and manufacturing activities be accomplished by eliminating the excess of domestic spending over output. The movement toward balance in our international transactions requires a drag on domestic spending and living standards—just as a rising international deficit allowed us to spend more than we produce, boosting our living standards. At the aggregate level, over the next five years, the cumulative growth of domestic spending would have to be two and a half to three percentage points less than GNP growth, and this implies significant changes in the use of resources.

Theoretically, some of the resource diversion could come from a reduction in investment spending, as a share of GNP, in nonmanufacturing business and housing sectors. In recent years, however, net business investment in nonmanufacturing activities has also declined significantly as a percent of GNP, while net housing investment has barely held steady. As a result, there does not appear to be much scope for resource diversion from these sectors at present. To the contrary, and as noted above, investment in both manufacturing and nonmanufacturing sectors must increase appreciably if we want to avoid a decline in productivity growth and living standards.

The resource diversion must come, therefore, entirely from changes in spending by the household and public sectors. In particular, the combined share of consumption spending and government purchases in GNP would have to be reduced very substantially between now and 1993, by as much as three and three-fourths percentage points in total, or about three-fourths of a percentage point per year. With the external deficit at  $2\frac{1}{2}$  to 3 percent of GNP, this estimate simply restates the adjustment burden in terms of the combined total of consumption expenditures and government purchases, which accounts for slightly more than four-fifths of GNP.

Ultimately, all of the external adjustment will be reflected in our consumption of goods and services, or living standards. For the five-year period as a whole, this implies that given GNP, consumption would be 4 to 5 percent less in total than what it would have been without the external adjustment. Assuming that consumption would have grown at a  $2\frac{1}{2}$  percent average annual rate from now through 1993—roughly in line with potential growth—the external adjustment would reduce consumption spending to around  $1\frac{1}{2}$  percent at an annual rate. At the current pace of population growth of around 1 percent, this implies an increase of only about one-half of 1 percent in annual consumption on a per capita basis, suggesting that the adjustment would be very difficult but not impractical. In theory, the drag on living standards could be reduced somewhat by running the economy at a higher rate relative to potential. But this would clearly risk much higher inflationary pressures since the economy is already near full employment utilization level of resources.

A third necessary condition is that the national saving-investment balance must improve to match the decline in savings inflows from abroad as the external deficit is reduced. Over the whole five-year period, the implied improvement in the national saving-investment balance is essentially equal to the reduction in the external deficit, on the order of  $2\frac{1}{2}$  to 3 percent of GNP. Since a decline in the ratio of investment to GNP is highly undesirable, all of the adjustment must come from increases in private saving and/or reductions in the public sector dissaving/deficit. Some pickup in the private saving rate is possible but the prospects for a significant recovery appear to be low. Moreover, the combined state and local government surplus is expected to remain roughly stable, or perhaps decline somewhat, in relation to GNP. As a practical matter, therefore, the bulk of the required adjustment to the national saving-investment balance will have to fall on the federal sector.

Finally, sufficient overall demand expansion in the rest of the world is necessary to accommodate the external adjustment. A decline in the U.S. international deficit must obviously be offset by a drop in the external surplus abroad, with most of the adjustment burden falling on Europe, Japan, and other surplus countries. This would mean faster growth of foreign domestic spending relative to foreign GNP and implies a significant diversion of foreign demand and resources away from the trade sector and export-oriented industries and toward home consumption.

In summary, four important conditions must be met for the United States to achieve external adjustment over the next five years:

- First, our exports must grow much more rapidly than our imports, with the latter increasing at a substantially slower pace than in the past. The bulk of the contribution to adjustment must come from trade in manufacturing goods and will require a significant shift of resources to the manufacturing sector to ensure adequate capital stock and productive capacity.
- Second, in order to eliminate the domestic spending gap and leave room for the resource shift to investment in manufacturing capacity, consumption and government expenditures must grow much more slowly than in the recent past and must decline relative to GNP.
- Third, the decline in foreign savings inflow, reflecting the improvement in the external deficit, must be offset by adjustments in the domestic saving-investment balance; this would require increases in private saving and/or reductions in the public sector deficit.

- Fourth, the external surplus in the rest of the world must fall to match the decline in our external deficit; this requires that foreign domestic spending grow at a faster pace than foreign GNP.

## **Looking to the Future: The Policy Mix Question**

The above discussion suggests a succinct formulation of the external adjustment problem:

To eliminate the export-import gap, we need to improve the trade performance of the manufacturing sector. And to achieve that improvement, the excess of domestic spending over production must be reduced in a way that the output share of net investment spending increases over time, while economic growth continues broadly in line with the long range potential, thus preventing a significant acceleration in inflationary pressures. Reducing the output-spending gap in these circumstances will require that the household and the government sectors reduce their spending and increase their saving, as GNP shares, in coming years. And to complete the circle, foreign domestic demand must rise faster than GNP even as both are maintained at sustainable noninflationary rates.

This formulation of the adjustment problem clearly indicates that we must simultaneously deal with all three gaps—the export-import gap, the output-spending gap, and the saving-investment gap. In particular, it emphasizes that achieving a balance on international transactions will require us to reduce domestic spending on private consumption and government purchases in order to increase the shares of both national saving and investment in the economy.

Looking at the adjustment problem in terms of the need to address all three gaps simultaneously leaves no doubt that the appropriate U.S. macroeconomic policy response must be to eliminate the federal budget deficit. Importantly, however, the budget deficit reduction must be aimed at shifting resources to investment spending by lowering public and private expenditures on other activities. To eliminate the primary external deficit in the context of stronger investment performance, the size of budget deficit reduction in the next two years or so will have to be very substantial; for the medium term, a balanced budget strategy, or perhaps a budgetary surplus, would appear to be necessary.

A lower budget deficit will help reduce the excess of domestic spending over output, with the exact manner of that reduction depending on particular fiscal measures adopted. If the federal budget deficit is brought down by cutting the share of federal government spending on goods and services, the output-spending gap will be narrowed directly. If the budget deficit is brought down by raising taxes and/or by lowering government transfer payments, the output-spending gap will be reduced through lower private spending.

By reducing dissaving in the economy, a lower budget deficit will directly increase national saving by the full amount of the deficit reduction, resulting in a larger pool of domestic funds available for private investment. At the same time, because the financing needs of the federal government will be smaller, total borrowings will decline relative to the available supply of funds in domestic financial markets, leading to lower interest rate pressures than would otherwise be the case—assuming, of course, that other things remain the same. Some federal budgetary measures, such as tax incentives, may also have a favorable effect on the private saving rate. But our postwar experience provides little encouragement in this direction; the only sure way in which the government can raise the national saving rate is by eliminating its own deficit or even running a budgetary surplus.

Of course, monetary policy has an important role to play in the adjustment process. It must aim at avoiding inflationary overheating while attempting to maintain economic growth broadly in line with the long-range potential of the economy. Monetary policy is not at all well suited, however, to the task of increasing the investment share of GNP while closing the domestic output-spending gap. More generally, monetary policy cannot effectively increase savings or switch resources from consumption into investment and the international trade sector.

The suggested fiscal/monetary policy mix has no unambiguous implications for the dollar exchange rate. Changes in the domestic spending and saving/investment imbalances resulting from the policy mix may prove adequate to achieve a balance on our primary international deficit without any significant change in the average medium-term exchange value of the dollar. That is, the recent *real* dollar exchange rate, which is around or somewhat below the 1980 average level, may be consistent with accommodating the required shift in the share of total world spending to U.S. goods and services from foreign goods and services. We do not know, of course, what level of the dollar over time will be associated with full external adjustment. It will be determined by a broad range of factors such as inflation rates here and abroad, relative productivity performance, and actual or perceived improvements in the U.S. macroeconomic imbalances. Depending on developments in those factors, the level of the dollar that will be eventually associated

with complete external adjustment may turn out to be lower or higher than its present value.

However, by themselves, further sharp drops in the exchange value of the dollar at a time of high capacity utilization will probably not make a significant net positive contribution to the adjustment process. Indeed, such drops can cause a great deal of harm: they will surely contribute to inflation and inflationary expectations, reinforcing domestic wage and price pressures; they can also push up interest rates, discouraging domestic investment. More generally, they may disrupt financial markets and economic stability.

Overall, it seems clear that the fiscal/monetary policy mix along the lines suggested here offers, by far, the best course for achieving external adjustment while maintaining continued economic and financial stability. The main point is that without a major shift in federal budgetary policy, it will not be possible to accomplish the task of external adjustment with continuing economic stability. Put somewhat differently, combinations of monetary policy and exchange rate changes will simply not produce a satisfactory adjustment of our domestic spending and saving/investment imbalances. Even with the budget deficit reduction in place, the adjustment process may not prove to be smooth. The time path of adjustment will most likely be uneven and there are bound to be setbacks along the way. Uncertainties about the extent and timing of policy effects entail considerable risks as does the fact that an interruption of economic expansion cannot be ruled out.

## **Facilitating the Adjustment Process**

As the U.S. export-import gap declines, the external surplus of the rest of the world—and of foreign industrial countries in particular—will drop, leading to lower foreign GNP growth. The adjustment process will be facilitated if this external sector drag on foreign output is offset by sufficient domestic demand so as to maintain a sustainable pace of overall noninflationary economic growth. This will require a policy mix abroad that directs output away from the external sector and toward home demand, leading to faster increases in living standards in the surplus countries.

Continued foreign economic growth, supported by a significant contribution from domestic demand, would result in a larger improvement in international imbalances than if the external sector drag on foreign growth were not offset. This approach would also reduce the risk to the stability of financial markets and the world economy.

Nevertheless, economic policy changes abroad to offset the external sector drag on

foreign economic growth will not resolve the U.S. domestic imbalances of overspending on consumption and undersaving/underinvestment in the economy. Similarly, selective trade policy initiatives, such as measures to encourage other countries to move toward greater openness and liberalization of their markets, would be helpful during the adjustment process. But they too will not deal with our domestic macroeconomic imbalances. In any event, although the favorable effects of such measures on our international balance over the next few years would appear to be modest in economic terms, they will be large enough in the context of efforts to contain protectionist tendencies here in the United States.

### A SUMMARY VIEW OF THE ADJUSTMENT PROBLEM

On present expectations, our overall external deficit will improve somewhat over the next several quarters, but it will remain in excess of \$100 billion at least through 1990. The persistence of large external deficits over the last six years has already done considerable damage to the long-term foundations of the economy, and the corrosive effects are now accumulating at a rapid pace. In the period ahead, continuing large deficits will also pose a growing threat to financial and economic stability since the economy is now operating very near full capacity utilization of its resources.

The international deficit, which reflects overspending on consumption and undersaving/underinvestment in the U.S. economy, must be essentially eliminated over time in a context in which the net investment share of output is rising and noninflationary economic growth continues broadly in line with the long range potential. The rise in the investment share is necessary to stop and reverse the corrosive effects of the recent decline in the rate of capital formation relative to output on future productivity and living standards.

Automatic forces by themselves will not produce the desired result on the adjustment problem, although sooner or later those forces might well eliminate the international deficit at the cost of creating major disruptions in the economy. After all, a nation cannot spend more than it produces *forever*. Moreover, even with major policy initiatives, to expect the external deficit to be eliminated over the next year or two would be unrealistic. It will take a number of years to eliminate the international deficit, and the adjustment process will have to be sufficiently gradual to sustain continuing economic growth and price stability.

Macroeconomic policy options to deal with the adjustment problem are quite limited.

Monetary policy cannot effectively increase savings or switch resources from consumption into investment and the international trade sector. The only reasonable course, therefore, is to plan on eliminating the federal budget deficit over the next few years. This would greatly help in increasing national saving and would relieve congestion in domestic financial markets as demands for borrowing go down relative to the supply of domestic funds.

If the adjustment process is to work out in an environment of continuing economic growth abroad and financial stability in the world economy, the foreign industrial countries as a group would have to offset the external sector drag on their economic growth. This will facilitate the adjustment process and reduce the risk to financial and economic stability in the world economy. But the maintenance of significant economic growth abroad will not resolve our domestic saving and investment imbalances.

In sum, reducing and eventually eliminating the U.S. federal budget deficit is necessary, although not sufficient, to deal with the external adjustment problem. Viable policy alternatives simply do not exist, and to count on private forces to shift a large amount of resources smoothly from consumption into saving, investment, and the international sector seems impractical; history clearly provides no support for this expectation. To minimize the risk of failure, a credible plan to eliminate the budget deficit over the next few years must be set up sooner rather than later. Even with a budget deficit plan, the adjustment process will be slow and difficult. Nevertheless, it would offer us the best hope of achieving external adjustment with continuing noninflationary growth and with significantly higher levels of investment needed for the long-term well-being of the economy. This adjustment path would also help maintain confidence in America's economic strength and leadership, which remain critical for worldwide peace and prosperity.



## Financial Statements

### STATEMENT OF EARNINGS AND EXPENSES FOR THE CALENDAR YEARS 1988 AND 1987 (In Dollars)

	1988	1987
Total current earnings . . . . .	6,380,785,220	5,610,066,755
Net expenses* . . . . .	166,458,976	171,855,794
Current net earnings	6,214,326,244	5,438,210,961
Additions to current net earnings:		
Profit on sales of United States government securities and federal agency obligations (net) . . . . .	7,264,559	13,476,274
Profit on foreign exchange . . . . .	—	434,830,746
All other . . . . .	990,764	149,447
Total additions . . . . .	8,255,323	448,456,467
Deductions from current net earnings:		
Loss on foreign exchange . . . . .	134,871,105	—
All other . . . . .	6,058,959	7,915,250
Total deductions . . . . .	140,930,064	7,915,250
Net additions (deductions)	(132,674,741)	440,541,217
Assessment by the Board of Governors:		
Board expenditures . . . . .	22,217,800	20,642,300
Federal Reserve currency costs . . . . .	53,879,756	53,905,512
Total assessments	76,097,556	74,547,812
<b>Net earnings available for distribution</b>	<b>6,005,553,947</b>	<b>5,804,204,366</b>
Distribution of net earnings:		
Dividends paid . . . . .	33,109,144	30,455,531
Transferred to surplus . . . . .	24,741,350	75,044,550
Payments to United States Treasury (interest on Federal Reserve notes) . . . . .	5,947,703,453	5,698,704,285
<b>Net earnings distributed</b>	<b>6,005,553,947</b>	<b>5,804,204,366</b>
<b>Surplus account</b>		
Surplus — beginning of year . . . . .	541,045,900	466,001,350
Transferred from net earnings . . . . .	24,741,350	75,044,550
<b>Surplus — end of year</b>	<b>565,787,250</b>	<b>541,045,900</b>

\* Includes a \$70 million credit for the Federal Reserve System in 1988 and a \$49 million credit for the 12 Reserve Banks in 1987, resulting from the implementation of FASB87 — Employers' Accounting for Pensions — effective January 1987.

# STATEMENT OF CONDITION

In Dollars

<b>Assets</b>	<b>DEC. 30, 1988</b>	<b>DEC. 31, 1987</b>
Gold certificate account . . . . .	3,309,987,701	3,177,290,421
Special drawing rights certificate account . . . . .	1,489,000,000	1,489,000,000
Coin . . . . .	14,119,621	16,279,966
<b>Total</b>	<b>4,813,107,322</b>	<b>4,682,570,387</b>
 Advances . . . . .	 33,700,000	 2,786,700,000
United States government securities:		
Bought outright* . . . . .	79,854,640,160	70,429,481,550
Held under repurchase agreements . . . . .	4,760,465,000	3,645,235,000
Federal agency obligations:		
Bought outright . . . . .	2,380,814,655	2,430,086,784
Held under repurchase agreements . . . . .	2,100,735,000	1,315,470,000
<b>Total loans and securities</b>	<b>\$89,130,354,815</b>	<b>80,606,973,334</b>
 Other assets:		
Cash items in process of collection . . . . .	1,234,629,280	934,827,927
Bank premises . . . . .	31,911,552	33,425,781
All other† . . . . .	4,461,809,404	3,444,024,737
<b>Total other assets</b>	<b>5,728,350,236</b>	<b>4,412,278,445</b>
Interdistrict settlement account . . . . .	113,601,755	1,448,815,867
<b>Total assets</b>	<b>99,785,414,128</b>	<b>91,150,638,033</b>

\*Includes securities loaned—fully secured . . . . . 2,382,700,000

926,730,000

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

# STATEMENT OF CONDITION

In Dollars

<b>Liabilities</b>	<b>DEC. 30, 1988</b>	<b>DEC. 31, 1987</b>
Federal Reserve notes (net) . . . . .	78,077,575,955	70,471,503,947
Reserve and other deposits:		
Depository institutions . . . . .	9,198,734,175	11,652,719,955
United States Treasury - general account . . . . .	8,656,496,496	5,312,879,052
Foreign - official accounts . . . . .	236,550,840	130,344,855
Other . . . . .	310,581,213	437,345,892
<b>Total deposits</b>	<b>18,402,362,724</b>	<b>17,533,289,754</b>
Other liabilities:		
Deferred availability cash items . . . . .	795,092,310	875,600,715
All other* . . . . .	1,378,808,639	1,188,151,817
<b>Total other liabilities</b>	<b>2,173,900,949</b>	<b>2,063,752,532</b>
<b>Total liabilities</b>	<b>98,653,839,628</b>	<b>90,068,546,233</b>
<b>Capital accounts</b>		
Capital paid in . . . . .	565,787,250	541,045,900
Surplus . . . . .	565,787,250	541,045,900
<b>Total capital accounts</b>	<b>1,131,574,500</b>	<b>1,082,091,800</b>
<b>Total liabilities and capital accounts</b>	<b>99,785,414,128</b>	<b>91,150,638,033</b>

\*Includes outstanding foreign exchange commitments revalued at market rates.

## Changes in Directors and Senior Officers

**CHANGES IN DIRECTORS.** In May 1988, the Board of Governors of the Federal Reserve System appointed Maurice R. Greenberg a Class C director for the unexpired portion of the term of John Brademas ending December 31, 1988, and in September reappointed him for the three-year term beginning January 1, 1989. Mr. Greenberg is President and Chief Executive Officer of American International Group, Inc., New York, N.Y. Dr. Brademas, President of New York University, resigned as a Class C director on April 30, 1988, having served as a Class C director since January 1983 and as *Chairman* and *Federal Reserve Agent* from 1983 to 1986.

In September 1988, the Board of Governors appointed Ellen V. Futter *Deputy Chairman* for the remaining portion of the year 1988, and in December reappointed her *Deputy Chairman* for the year 1989. Ms. Futter, President of Barnard College, New York, N.Y., has been serving as a Class C director since January 1988.

Also in September, the Board of Governors appointed Cyrus R. Vance a Class C director, effective January 1, 1989, for the unexpired portion of the term of John R. Opel ending December 31, 1989, and designated him *Chairman* of the board of directors and *Federal Reserve Agent* for the year 1989, also succeeding Mr. Opel. Mr. Vance is the presiding partner in the New York law firm of Simpson Thacher & Bartlett. Mr. Opel, Chairman of the Executive Committee of International Business Machines Corporation, New York, N.Y., had been serving as a Class C director and as *Chairman* and *Federal Reserve Agent* since January 1987; he also served as a Class B director from January 1981 through December 1986.

In December 1988, member banks in Group 1 reelected John F. McGillicuddy a Class A director, and Richard L. Gelb a Class B director, both for three-year terms beginning January 1, 1989. Mr. McGillicuddy, Chairman of Manufacturers Hanover Trust Company, New York, N.Y., has been serving as a Class A director since February 1988. Mr. Gelb, Chairman of Bristol-Myers Company, New York, N.Y., has been serving as a Class B director since January 1986.

*Buffalo Branch.* In September 1988, the Board of Governors of the Federal Reserve System reappointed Mary Ann Lambertsen a director of the Buffalo Branch for a three-year term beginning January 1, 1989, and the board of directors of this Bank redesignated her *Chairman* of the Branch board for the year 1989. Mrs. Lambertsen, Vice President-Human Resources of Fisher-Price, Division of The Quaker Oats Company, East Aurora, N.Y., has been a director of the Branch and *Chairman* of the Branch board since January 1986.

At the same time, the board of this Bank appointed Richard H. Popp a director of the Buffalo Branch for a three-year term beginning January 1, 1989. Mr. Popp, Operating Partner of Southview Farm, Castile, N.Y., succeeded Donald I. Wickham, President of Tri-Way Farms, Inc., Stanley, N.Y., who had served as a Branch director since January 1983.

Also in September, the board of this Bank appointed Robert G. Wilmers a director of the Buffalo Branch for a three-year term beginning January 1, 1989. Mr. Wilmers, Chairman of Manufacturers and Traders Trust Company, Buffalo, N.Y., succeeded R. Carlos Carballada, President and Chief Executive Officer of Central Trust Company, Rochester, N.Y., who had served as a Branch director since January 1986.

**CHANGES IN SENIOR OFFICERS.** The following changes in the official staff at the level of Vice President and above have occurred since the publication of the previous *Annual Report*:

James H. Oltman, formerly Executive Vice President and Special Counsel, was appointed to the position of First Vice President and Chief Administrative Officer, effective July 1, 1988, for the unexpired portion of the five-year term of Thomas M. Timlen ending February 28, 1991. Mr. Timlen elected early retirement effective July 1, 1988, after completing more than 32 years of distinguished service with the Bank, including 12 years as First Vice President.

Effective January 1, 1989:

Om P. Bagaria, formerly Assistant Vice President, was appointed Vice President and assigned to the Systems Development Function.

Paul B. Bennett, formerly Senior Research Officer, was appointed Vice President and Economic Adviser and assigned to the Research Function.

Joseph P. Botta, Vice President, was assigned responsibility for the new Technical Development Staff of the Operations Group.

Kathleen A. O'Neil, formerly Chief Financial Examiner, was appointed Vice President and Chief Financial Examiner and assigned to the Bank Examinations Function, reporting to Robert A. O'Sullivan, Vice President.

Effective February 2, 1989, Susan C. Young, Vice President, elected deferred early retirement.

# Directors of the Federal Reserve Bank of New York

<b>DIRECTORS</b>	<i>Term expires Dec. 31</i>	<i>Class</i>
ALBERTO M. PARACCHINI ..... Chairman of the Board and President, Banco de Ponce, Ponce, Puerto Rico	1989	A
J. KIRBY FOWLER ..... President and Chief Executive Officer, The Flemington National Bank and Trust Company, Flemington, N.J.	1990	A
JOHN F. MCGILLICUDDY ..... Chairman of the Board, Manufacturers Hanover Trust Company, New York, N.Y.	1991	A
JOHN A. GEORGES ..... Chairman of the Board, International Paper, Purchase, N.Y.	1989	B
JOHN F. WELCH, JR. .... Chairman of the Board, GE, Fairfield, Conn.	1990	B
RICHARD L. GELB ..... Chairman of the Board, Bristol-Myers Company, New York, N.Y.	1991	B
CYRUS R. VANCE, <i>Chairman and Federal Reserve Agent</i> ..... Presiding Partner, Simpson Thacher & Bartlett, New York, N.Y.	1989	C
ELLEN V. FUTTER, <i>Deputy Chairman</i> ..... President, Barnard College, New York, N.Y.	1990	C
MAURICE R. GREENBERG ..... President and Chief Executive Officer, American International Group, Inc., New York, N.Y.	1991	C

## DIRECTORS — BUFFALO BRANCH

MATTHEW AUGUSTINE ..... President and Chief Executive Officer, Eltrex Industries, Inc., Rochester, N.Y.	1989
HARRY J. SULLIVAN ..... President, Salamanca Trust Company, Salamanca, N.Y.	1989
PAUL E. MCSWEENEY ..... Executive Vice President, United Food and Commercial Workers District Union (Local 1), AFL-CIO, Amherst, N.Y.	1990
NORMAN W. SINCLAIR ..... Chairman of the Board, Lockport Savings Bank, Lockport, N.Y.	1990
MARY ANN LAMBERTSEN, <i>Chairman</i> ..... Vice President-Human Resources, Fisher-Price, Division of The Quaker Oats Company, East Aurora, N.Y.	1991
RICHARD H. POPP ..... Operating Partner, Southview Farm, Castile, N.Y.	1991
ROBERT G. WILMERS ..... Chairman of the Board, Manufacturers and Traders Trust Company, Buffalo, N.Y.	1991

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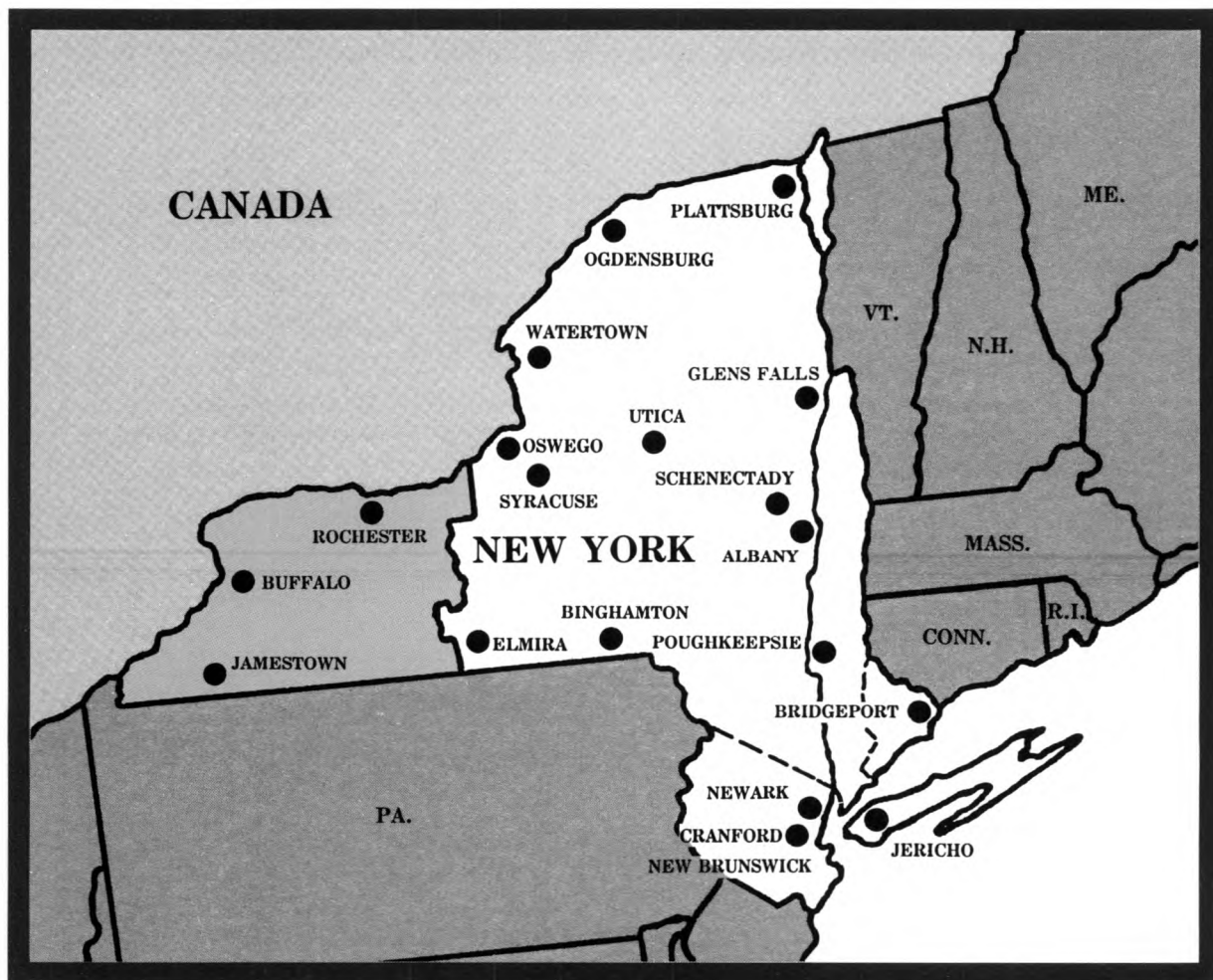
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HEAD OFFICE TERRITORY



BUFFALO BRANCH TERRITORY