

PERSPECTIVES ON U.S. EXTERNAL DEFICITS

by
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**Federal Reserve Bank of New York
Research Paper No. 9505**

April 1995

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* The views expressed are those of the author and do not necessarily reflect those of the Federal Reserve Bank of New York or the Federal Reserve System. I am grateful to Peter Hooper, William Helkie and other colleagues in the Federal Reserve System for useful discussions, and to Tom Klitgaard for help with data on commodity-country composition of U.S. merchandise trade.

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Abstract

The paper examines the evolution of U.S. external balances since 1980 and considers various explanations for the persistence of external deficits in the late 1980s and the 1990s. It also offers a general assessment of the medium-term prospects for U.S. current account deficits. The review of evidence indicates that the huge increase in U.S. external deficits over 1980-86 was largely driven by an upward shift in Federal fiscal deficits and that lower Federal deficits together with the dollar depreciation played a crucial role in improving external balances during the second half of the 1980s. The improvement was not large enough, however, to defuse the external deficit problem. Indeed, the U.S. economy continued to experience substantial trade and current account deficits in the late 1980s and the early 1990s. Developments in Federal deficits or, more generally, changes in macroeconomic policies are not sufficient for explaining the persistence of external deficits. Other factors that made important contributions to the persistence of external deficits include supply-side effects of large exchange rate changes, increased trade competition between the U.S. and low-wage economies, and greater international capital mobility. Looking to the future, the paper suggests that in the medium run the U.S. current account deficit might stabilize around 1 1/2 - 2 percent of GDP. This scenario assumes that foreign private capital inflows would continue to finance the U.S. external deficits without any serious disruptions and that U.S. fiscal policy initiatives would keep the Federal budget deficit around 2 percent of GDP.

Perspectives on U.S. External Deficits

For more than a decade, the United States has experienced massive and persistent external deficits. Such large external deficits were historically unprecedented until the early 1980s but now seem a permanent feature of the U.S. economy. Over the foreseeable future, there is little prospect of major reductions in these deficits, let alone eliminating them. In fact, they are widely expected to continue at the recently expanded levels over the next year or two.

This essay reviews the forces underlying the evolution and persistence of U.S. external deficits drawing on previous work in this area. Within that context, the essay examines the available evidence on the role of the dollar depreciation in the external adjustment process since the mid-1980s and offers perspectives on contributions of a broad range of factors to the persistence of external deficits. The essay also considers the general prospects for U.S. external deficits over the next 5-10 years in the context of recent international trends and shifting trade patterns, and possible future evolution of macroeconomic policies here and abroad.

To preview the main conclusions briefly, the massive deterioration of U.S. external balances over 1980-86 was essentially a macroeconomic phenomenon. In particular, the rise in Federal fiscal deficits was the chief driving force behind external

deficits. Lower Federal deficits together with the dollar depreciation also played a crucial role in reducing external deficits during the second half of the 1980s. But the reduction was not large enough to defuse the external deficit problem. In fact, the economy continued to face substantial trade and current account deficits in the late 1980s and the early 1990s. The persistence of external deficits cannot be explained fully by developments in Federal deficits or even, more generally, by changes in macroeconomic policies. Other factors that seem to have made significant contributions to the persistence of external deficits include supply-side effects of large exchange rate changes, increased trade competition between the U.S. and low-wage, outward-oriented economies, and greater international capital mobility. Looking to the future, the paper suggests that in the medium run the U.S. current account deficit might stabilize in the range of 1 1/2 - 2 percent of GDP.

I. Basic Facts on External Deficits

Three broad measures of the external balance are reported in Table 1. The current account on a Balance of Payments Accounts basis is generally regarded as the most comprehensive measure of international transactions of the economy. The balance on goods and services excludes net investment income and unilateral transfers components of the current account. More relevant to measuring the output contribution of the external accounts is the constant dollar value of net exports of

goods and services or the balance on goods and services as defined in the National Income and Product Accounts.¹

All three measures of the external balance indicate a massive shift toward increasingly larger deficits starting in 1983. This development was in marked contrast to the evolution of external balances in the earlier period. The current account registered a small deficit in 1982 and showed, on average, no significant balance over the 1960-82 period. Net exports were also negligible in 1982 and exercised, on average, only a slight drag on output over the earlier period.

As shown in Table 1, U.S. external deficits became increasingly larger from 1982 through 1986 or 1987, but they were substantially reduced over the next several years through 1991. Since 1991, the external balance has again deteriorated markedly, reversing much of the earlier improvement. Even so, however, the external deficits were smaller, on average, over the last six years (1989-94) than over the preceding six years (1983-88).

The dollar exchange rate movements and developments in economic activity here and abroad contributed importantly to large shifts in external balances throughout the period but they were by no means the only factor. Other domestic and international forces also played a crucial role, some as direct contributors to external deficits while others through their influence on exchange rates and economic activity. The sources of the original deterioration and the subsequent adjustment and evolution

¹ As noted in Table 1, there are small differences between Balance of Payments Accounts and the National Income and Product Accounts in the coverage of the balance on goods and services.

of U.S. external balances will be discussed in the next two sections. For now, we will concentrate on reporting some additional facts concerning external deficits.

Developments in components of the current account reported in Table 2 reveal a somewhat complicated picture of the external deficit problem. The three main components--merchandise trade, services trade and investment income flows--show diverse trends, although merchandise trade dominates the movements of the current account. The merchandise trade balance more than fully accounted for the current account deficit throughout the period. As in the case of the current account balance, the merchandise trade balance improved significantly in the late 1980s through 1991 but has deteriorated sharply in the subsequent period.

By contrast, the balance on trade in services has shown a steadily increasing surplus since the mid-1980s. At present, the surplus appears to be slightly less than one percent of GDP, and is broadly distributed across trade in many private services--travel and tourism, trade in business and financial services, and royalties and license fees.

Net investment income has declined gradually, though unevenly, since the early 1980s, but the overall net investment income balance remained positive through 1993, as the substantial on-going surplus on direct investment continued to more than offset the rising deficit on portfolio income. The net investment income balance showed a modest deficit in the first half of 1994. To a significant extent, the long-term declining trend of net investment income reflects rising service costs on the rapidly accumulating external debt of the United States (Chart 1). The rise in the external

debt (or the decline in net international investment position) itself is, of course, largely a consequence of the on-going external deficits.

Overall, Table 2 data suggest significant shifts in the trend contributions of the three main components since the early 1980s. While the merchandise trade deficit continued to dominate overall external balances throughout the period, surplus on private services has become larger over time, providing much greater offsets to the merchandise deficit in recent years. On the other side, with rising debt service costs on increasingly greater U.S. external debt, surplus on investment income has now disappeared, after having been on a diminishing trend since the mid-1980s. The investment income balance is likely to show increasingly larger deficits over the coming years.

I-A. Commodity Composition of Merchandise Deficits

With manufacturing goods accounting for over 4/5 of U.S. trade in goods, the merchandise trade deficit and its movements over time are dominated by the manufacturing trade deficit (Chart 2). After rising sharply over 1982-1987, both the merchandise and manufacturing deficits improved substantially between 1987 and 1991; by 1991, both deficits were running, in dollar terms, about half their 1987 levels. Over the last three years, however, both deficits have deteriorated rapidly escalating back to their 1987 levels.

The movements of balances on trade in major end-use commodity groups within manufacturing are not uniformly consistent with the pattern of developments in overall manufacturing and merchandise trade deficits. In line with the overall trade

deficit, the surplus on trade in capital goods improved greatly between 1987 and 1991, reversing virtually all of the earlier losses, but fell sharply again after 1991 (Chart 3). With capital goods imports rising, on average, much faster than capital goods exports, the share of imported capital goods in domestic capital spending has more than doubled since the early 1980s; capital goods imports now make up about 35 percent of total domestic spending on producers' durable equipment, up from around 15 percent in 1981.

The balance of trade on industrial supplies, excluding petroleum and products and agricultural products, has also moved pretty much in line with the overall trade deficits although its movements are somewhat less pronounced.

Unlike the overall trade deficit, however, the deficit on trade in consumer goods showed very little improvement in the late 1980s, and is now considerably higher than the peak levels reached in the mid-1980s. Much the same also holds true for the movements of the auto trade deficit. For both categories, the shares of imported goods in relevant domestic spending have risen greatly since the 1980s. In the first half of this year, consumer goods imports accounted for over 7 percent of domestic consumption of goods while auto imports represented about 38 percent of total domestic auto spending.

I-B. Country/Regional Composition of Merchandise Deficits

The trade deficit is widely distributed across major world regions and countries. In 1993, the U.S. experienced trade deficits of around \$10 billion or more against Japan, Canada, China, Taiwan and Western European countries as a group, and

smaller deficits against a large number of other countries. The evolution of U.S. regional balances since the early 1980s reflects a complex pattern of trade developments. From the mid-1980s to the early 1990s, U.S. trade balances against Western Europe and to a lesser extent against other major trading partners seem to have widened and narrowed in line with movements of overall trade deficits (Table 3). But, in several cases, the large size of the bilateral deficit or its deteriorating trend dominate the medium-term movements. The trade balance against Japan provides a particularly graphic illustration of this situation: while the balance showed some improvement between 1987 and 1991, it has remained in large deficits throughout the period with the present level of the deficit actually considerably higher than the peaks reached in the mid-1980s. The trade balance against Canada exhibits a somewhat less pronounced similar pattern.

In contrast, the U.S. trade position against China has deteriorated continuously since the mid-1980s. And the size of the trade deficit with China is now second only to that with Japan. Following a major deterioration through the late 1980s, the U.S. trade deficit with newly industrialized Asian economies declined significantly between 1988 and 1991 but has shown little change in the subsequent period. Some of this improvement may be artificial, however, in that it may reflect a switch of the U.S. deficit from Hong Kong to China. Finally, the U.S. trade balance against Latin America and other Western Hemisphere recorded modest surpluses in 1992 and 1993 after having shown significant deficits in the mid-1980s. Recent data, however, indicates a worsening of the U.S. trade balance against this group of countries.

II. Causes of U.S. External Deficits: Analytical Framework

The external balance is a general equilibrium phenomenon, that is, it is jointly determined by a number of important variables in the international economy.² One aspect of this general equilibrium is evident in the national income accounts where the overall external balance--the export-import gap--is conceptually equal to the national saving-investment gap and the national spending-output gap. A related general equilibrium aspect is highlighted by the fact that the shortfall of national saving relative to investment is met by net capital inflows from abroad--the gap between U.S. capital outflows and foreign capital inflows--which is simply the financing counterpart of the external deficit. From these various conceptual identities, the external deficit may be thought of as being reflective of a country's saving-investment imbalances, or its spending-output imbalances, or its international capital flows imbalances.

By themselves, however, these identities carry no causal significance: no inference can be drawn about the direction of causation or the importance of some variables relative to others as causes of external deficits. All variables in these identities--exports, imports, saving, investment, spending, output, capital outflows and capital inflows--are simultaneously determined as part of a general equilibrium

² For a detailed description of the U.S. economy in a general equilibrium setting, see Stevens et al (1984) and references cited in that work. Hickman (1988) provides a simplified open economy model of the U.S. and an analysis of macroeconomic policy simulations from a number of large macroeconometric models. The "mainstream" view of the determination of the external balance represented by the extended ("expectations-augmented") Mundell-Flemming model may be viewed as a truncated version of the general equilibrium process. Howard (1989) and Krugman (1991b) provide general descriptions of this framework. For more formal analysis, see Frenkel and Razin (1987), Frankel (1988) and Hooper-Mann (1989a).

outcome for the world economy. In fact, each variable is a function of many variables not apparent from these identities and the actual external balance can reflect a broad range of changes in the export-import behavior, the domestic saving-investment behavior, domestic spending-output decisions, and the behavior of capital outflows relative to capital inflows.

To narrow the general equilibrium dimensions of the external balance problem to a manageable level, one common (the mainstream) approach is to focus first on the so called proximate determinants of trade flows, and then on the fundamental forces influencing those proximate determinants, or perhaps directly trade flows over the long run. In most empirical work on international trade--whether in the context of partial equilibrium trade models or general equilibrium macroeconomic models of the U.S. economy and multicountry models--major proximate determinants of exports, imports and the external balance are (1) U.S. and foreign incomes, (2) U.S. and foreign prices, and (3) the exchange rate, frequently supplemented by judiciously chosen additional ad hoc variables. Incomes and prices, in turn, are influenced by fundamental macroeconomic forces like economic policies, real interest rates, and private saving/spending and investment decisions.³ Other fundamental factors such as changes in tastes, institutions, trade policy, technology and factor endowments--usually assumed as given in macroeconomic models--may also influence trade flows and output over the long run. These other fundamental factors can affect trade

³ In multicountry models, incomes and prices are influenced by both U.S. and foreign fundamental variables while in models of the U.S. economy, foreign variables are normally treated as exogenous.

flows not only by causing changes in costs/prices and incomes but also by shifting the relationship between those variables and trade flows in response to alterations in long-run supply conditions.

In looking at causes and implications of U.S. external deficits, this paper follows the spirit of the general equilibrium approach to the external balance problem but without adhering to any precise or specific general equilibrium model. The approach serves as a broad umbrella for reviewing previous research and perspectives on U.S. external adjustment. It also provides a context for a focus on the dominant or important fundamental factors driving the movements of U.S. external balances.

III. Origins of the External Deficit Problem

Most econometric trade models--both partial equilibrium trade models and trade sectors of complete macroeconomic models--are able to account for virtually all of the huge widening of U.S. external deficits from the early to the mid-1980s on the basis of actual movements in proximate macroeconomic factors (see, for example, Bryant-Holtham (1988), Helkie-Hooper (1988), Hooper-Mann (1989a), and Lawrence (1990)). The most important proximate factors that explain the rise in external deficits are strong domestic demand growth in the U.S. relative to its major trading partners and the large appreciation of the dollar. (See Table 4 for data on key proximate and fundamental determinants.) Price changes (other than the dollar exchange rate) seem not to have played a significant role in the deterioration of external balances. One factor that may have been important, but not adequately captured by empirical studies, is the effect of the debt crisis on the ability to import of the heavily indebted developing countries.

Quantifying the contribution of fundamental factors, underlying proximate causes, to the rise in U.S. external deficits is much more difficult. But a widespread consensus among researchers has emerged that the deterioration of U.S. external balances was largely a macroeconomic phenomenon, driven by shifts in domestic and foreign macroeconomic policies (see, for example, Bryant and Holtham (1988), Helkie and Hooper (1988), Akhtar (1989), Hooper-Mann (1989a), Bryant (1988), Howard (1989) and Cline (1989)). In particular, there was a major loosening of U.S. fiscal policy with the Federal budget deficit expanding greatly in the first half of the 1980s (Chart 4). The expansionary U.S. fiscal policy in combination with tighter fiscal policies in the major trading partners, working through changes in economic activity here and abroad and the appreciation of the dollar exchange rate appear to have been the dominant source of the deterioration in external balances through the mid-1980s. Helkie and Hooper (1988) find, for example, that shifts in U.S. and foreign fiscal policies can account for about two-thirds of the widening of the current account deficit. Most other studies also find large effects of fiscal policy shifts on U.S. external deficits, although the average estimate is smaller in some cases than the one reported in the Helkie-Hooper study.

Fiscal policy shifts played an important role in driving up the dollar exchange rate in the first half of the 1980s but investigators generally find that such shifts fail to explain the bulk of the dollar appreciation. Helkie and Hooper (1988), for example, are able to attribute only about one-fifth of the dollar appreciation to fiscal policy shifts. A part of the remaining dollar appreciation must be explained by the strong anti-

inflationary stance of U.S. monetary policy during 1980-82. Even so, according to most econometric studies, actual changes in fiscal and monetary policies are likely to have accounted for only about half or less of the actual rise in the dollar (Bryant-Holtham (1988)). To date, no empirical model has been able to explain the remainder of the dollar appreciation especially the dollar surge during 1984 and early 1985.

The "unexplained" dollar appreciation implies that only about two-thirds of the increase in external deficits can be attributed to fundamental macroeconomic causes even though proximate macroeconomic factors which include the dollar exchange rate are able to predict all of the deterioration in external balances. It may be that part of the dollar appreciation was a speculative bubble, a view expressed by some analysts about the 1984 dollar surge when real interest rates and the current account were moving in the "wrong" direction. Alternately, it is possible that the apparent excessive dollar appreciation during the first half of the 1980s reflects economic (or perhaps even non-economic) fundamental influences that are not included in empirical models.⁴ In any event, in the context of existing empirical models, a complete explanation of the rise in external deficits in terms of fundamental macroeconomic factors is not possible without simultaneously explaining the dollar appreciation.

However, the external deficit consequences of shifts in fundamental macroeconomic factors may well be much larger than suggested by the existing empirical analyses. The channels of influence running from fundamental factors to

⁴ For a recent survey of empirical research on exchange rates, see Frankel-Rose (1994). For views on the 1984-85 dollar surge episode, see Frankel-Froot (1986) and Hooper-Mann (1989).

external deficits may be more complex or simply different than what is incorporated in empirical studies. For example, the increased integration of markets for goods, services and capital may mean that the shortfall in domestic saving relative to investment can get translated into external deficits without too much help from the dollar exchange rate as a transmission mechanism.⁵ Moreover, a shift in the budget deficit or the saving-investment balance may work not only through effects on interest and exchange rates, and economic activity (as most empirical studies assume) but also through actual and incipient changes in other variables.

In these circumstances, changes in U.S. external balances may simply be viewed as a reflection of shifts in macroeconomic policy with the transmission occurring through a variety of channels. Looked at in this way, shifts in U.S. Federal fiscal policy alone, amounting to over 3 1/2 percent of GNP, would appear to be sufficient for explaining a similar rise in the current account deficit over 1980-86. On this view, the "unexplained" appreciation of the dollar over the first half of the 1980s may have reflected, arguably, the "inherent" volatility of exchange rates with little consequences for external deficits.

Even granting the basic channels of transmission in the existing empirical models, it is difficult to quantify the consequences of fundamental macroeconomic factors for external deficits for a variety of reasons: explicit or implicit judgements are required for causal ordering among simultaneously determined endogenous variables;

⁵ This is essentially the Ohlin-Mundell-McKinnon position described by Krugman (1991b).

most of the individual conceptual variables are subject to multiple empirical proxies; and stability of parameters and tight empirical fits are required for the results to be meaningful. In addition, large shifts in economic variables, such as those that occurred in fiscal and monetary policies during the first half of the 1980s, have the potential to alter the structure underlying the models and may produce responses that are much different from previous history.

With all these difficulties in quantifying economic influences on external balances, the empirical results on fundamental macroeconomic causes cannot be viewed as precise estimates; they must be interpreted in a broad judgmental fashion. In this context, it is not surprising, therefore, that many economists believe that shifts in macroeconomic policies here and abroad represent the whole story of the phenomenal rise in U.S. external deficits over 1981-87 (see, for example, Cline (1989)). This view may well be only a slight overstatement. Other factors made significant contributions to U.S. external balances but some of them with offsetting results. Following the world debt crisis in 1982, for example, U.S. exports to the heavily indebted countries especially to Latin America were reduced, aggravating the deterioration in external balances. On the other side, however, the decline in the value of oil imports in 1986-87, reflecting falling oil prices, helped moderate the rise in external deficits.

IV. The Dollar Depreciation and External Adjustment Over 1987-91

The dollar depreciation in 1986 and 1987 reversed much of the appreciation that had taken place over the first half of the 1980s (Chart 5). Following some

additional declines in the subsequent period, the 1990 effective dollar average, as measured by the IMF indexes, was somewhat below that in 1980. Since 1990, the dollar has shown considerable volatility but its average value over the 1991-93 period, on all three measures in Chart 5, was slightly lower than or roughly similar to the average 1990 level.

This section reviews the role of the dollar depreciation and other major determinants in reducing U.S. external deficits over 1987-91, emphasizing the distinction between proximate and fundamental causes. An important focus of the review is whether the external adjustment process over 1987-91 worked in a way that is broadly consistent with historical experience and with the standard (mainstream) view of international adjustment.

The large dollar depreciation after 1985 was the main proximate cause of the improvement in external balances over 1987-91. Other major proximate causes were a pick up in economic activity abroad during 1986-90, and slower U.S. economic growth in that period relative to the earlier period and relative to foreign growth (Table 5). The narrowing of external deficits reflected, in effect, a reversal of the same factors that had caused the deficits to increase in the first place. The improvement in external accounts was aided significantly by the fact that the U.S. economy entered a recession in 1990 when many of its major trading partners were still experiencing considerable growth.

As shown in Table 1, the current account deficit fell to \$51 billion (or about 1 percent of GDP) in 1991 from \$167 billion (or about 3.7 percent of GDP) in 1987. The

corresponding declines in the merchandise trade deficit and other measures of external deficits were broadly similar (Table 1 and Chart 2). Overall, the improvement in external balances was very impressive, especially when judged against earlier projections with unchanged dollar, indicating that external deficits would continue to expand through the late 1980s. Even so, U.S. external deficits were substantially higher in 1990/91 than in 1980 despite a return to 1980 exchange rates and relative GNP levels.

In terms of fundamental causes, however, tighter U.S. fiscal policy and, more generally, shifts in macroeconomic policies here and abroad explain only part of the changes in exchange rates and economic activity. However, a substantial decline in U.S. Federal budget deficits was critical in bringing about an adjustment in the underlying saving-investment balance. As shown in Chart 4, Federal deficits declined substantially between 1985/86 and 1989/90. On a national income and product accounts basis, Federal dissaving fell to an average 2.8 percent of GNP in 1987-90 from an average 4.7 percent of GNP in 1983-86. Most of this improvement was offset, however, by a decline in private saving relative to GNP. As a result, a significant fraction of the adjustment in the saving-investment balance was met by a decline in private investment relative to GNP.

Several special factors seem to have played a large role in the evolution of economic activity and exchange and interest rates during the late 1980s and 1990-91. In particular, the Persian Gulf war was instrumental in triggering the recession in 1990, and the defense build down, the credit crunch and the commercial real estate

depression, together, played an important role in slowing the economy before the recession and in impeding the recovery process. Moreover, U.S. trade developments since the mid-1980s have been substantially influenced by fundamental factors that go beyond the realm of macroeconomic policies. In particular, long-term changes in relative supply conditions and in the structure of trade composition across products and countries may have induced significant movements in U.S. trade and external balances (see discussion of shifts in the trade structure in a subsequent section).

Numerous studies have investigated the adjustment of U.S. external balances in response to the dollar depreciation after 1985. In particular, economists have examined the extent and speed of adjustment of external balances and whether the adjustment process was consistent with earlier experience and economic theory as embodied in econometric models. The overall conclusion is that the dollar depreciation was, by far, the major factor in reducing U.S. external deficits over 1987-91 and that the adjustment process was broadly consistent with the mainstream view of the international adjustment mechanism (Krugman (1991a, 1991b), Cline (1991), Lawrence (1990), and Hooper-Marquez (1993)). Many studies argue that the actual outcome for U.S. external deficits through 1991 roughly conformed to predictions from most conventional trade models, at least when adjusted for special factors.

On face value, these conclusions are not entirely consistent with the impression that the size of the improvement in U.S. external balances did not match the huge dollar depreciation and substantial increases in economic activity abroad relative to the

U.S. Specifically, in 1990, U.S. merchandise trade deficit was about \$83 billion above its 1980 level despite the fact that the dollar exchange rate returned to its 1980 average in 1988 and stayed around or below that level over the subsequent three years while U.S. and foreign economic growth rates averaged about the same over the whole decade.⁶ In other words, with relative prices and incomes returning back to 1980 historical levels, the U.S. ended up with a rise in the trade deficit of around 1 1/2 percent of GDP.

IV-A. The Adjustment Process and the Lawrence-Krugman Paradox

So how does one reconcile the results and forecasts from empirical studies mentioned above with the puzzle of continuing U.S. external deficits in the face of a complete reversal of the 1980-85 changes in exchange rates and GNP? At a technical level, this puzzle, frequently labelled as the Lawrence-Krugman paradox, is not hard to explain.⁷ The conventional trade equations yield a much greater income elasticity of U.S. imports than for U.S. exports, with estimates of income elasticity for imports usually ranging from 2.2 to 2.5 while estimates of income elasticity for exports ranging from 1.5 to 1.8. Thus, if U.S. and foreign growth rates are equal, the income

⁶ In 1991, the trade deficit was about \$50 billion greater than in 1980 but the bulk of the deficit reduction between 1990 and 1991 was attributable to the U.S. recession along with continuing significant growth abroad.

⁷ Discussions of the Lawrence-Krugman paradox frequently use the partial trade deficit on nonoil imports and nonagricultural exports. The rationale for this usage is that nonoil, nonagricultural trade is believed to be somewhat more closely related to relative incomes and prices than total trade. The widening of the partial deficit in 1990 and 1991 relative to 1980 was somewhat greater than that of the total trade deficit.

elasticity differential implies a secular downward trend in the U.S. trade balance at any given real exchange rate or relative price levels. Put differently, with U.S. and foreign growth equal, a secular real dollar depreciation is needed to maintain a balanced U.S. trade position.⁸

But the asymmetry between the income elasticities of imports and exports cannot be viewed as a satisfactory explanation for the Lawrence-Krugman paradox. As pointed out by Hooper (1990) and Krugman (1991a), the apparent differences in income elasticities are likely to reflect long-term supply-side developments; they appear not to be consistent with meaningful product elasticity differences and with changes in the mix of imports and exports over time; they may simply reflect the fact that the estimated trade equations exclude some important explanatory variables. Consequently, one must look for alternative explanations for the Lawrence-Krugman paradox.

One such explanation is offered by Cline (1991). He believes that the real dollar exchange rate, measured correctly, remained well above the 1980 level until at least 1990, and finds considerable support for this claim in the IMF index of the real dollar based on relative export unit values. When this measure is plotted with a two-year lead to account for adjustment lags, it seems to do a good job of explaining the

⁸ Krugman (1991a) concludes that a one to two percent annual decline in the real dollar is consistent with any given trade balance over the last 20 years. Cline (1991) estimates that an annual dollar depreciation of somewhat less than one percent may be required to neutralize the adverse trade trend, assuming that the asymmetry between the income elasticities of imports and exports is somewhat less than suggested by the standard estimates of the trade equations.

evolution of trade balances (Chart 6). Other measures of the real dollar based on relative labor costs show significantly greater declines with the dollar returning to its 1980 value in the late 1980s, but are less well matched with movements of trade balances. Hooper (1991) points out, however, that unit value data are deficient for constructing a real dollar index and that a real dollar measure based on relative export unit values may not be relevant to U.S. imports (also see Lawrence (1991)). Even so, it is possible that the real dollar or relative prices did not decline as much in the second half of the 1980s as is commonly supposed; the FRB dollar index based on relative consumer prices, for example, remained above its 1980 level until 1991.

Hooper (1991) explains the Lawrence-Krugman paradox by using a combination of factors: changes in relative supply, changes in relative domestic demand, and changes in relative prices. According to his analysis, the relative supply shifts, proxied by the ratio of U.S. private fixed capital stock to a trade-weighted average of foreign capital stock, alone are able to account more than fully the gap between the trade deficits in 1980 and the first half of 1990. U.S. domestic demand expanded at a faster pace than domestic demand abroad during the 1980s, even though U.S. and foreign GNP growth rates were about equal over that period. Assuming GNP and domestic demand share equally in determining import or export demand, Hooper estimates that the difference in domestic demand growth contributed significantly to the Lawrence-Krugman paradox. The third factor, relative price terms entering into the determination of particular trade flows, also works in the same direction. Overall, Hooper believes that the sum of the three effects significantly exceeds the widening of trade deficits

between 1980 and 1990. He suggests, therefore, that the paradox to be explained is the exact reverse of the Lawrence-Krugman claim. In fact, he goes on to argue that many models overpredicted external deficits (or underpredicted the actual progress on deficits) over 1987-90.

A study by Hickok-Hung (1991-92) casts some doubts on the importance of relative capital stocks, though not necessarily on the importance of relative supply shifts, as an explanation for the Lawrence-Krugman paradox. Specifically, Hickok and Hung find that movements of U.S. capital stock relative to foreign capital stock made no significant contribution to the persistence of trade deficits in the late 1980s. They argue, instead, that structural shifts broadly defined to cover the composition of trade across commodity groups and across foreign suppliers played a major role in impeding progress on U.S. trade balance adjustment in the late 1980s. Note that, relative capital stock developments may have contributed to structural trade shifts and that such shifts can be viewed as a proxy for changes in long-term supply conditions.

Finally, it is important to recognize that the Lawrence-Krugman paradox arises from looking at the trade deficit problem in a partial equilibrium setting. That is, the paradox or mystery to be explained is the widening of the trade deficit between 1980 and 1990 because it cannot be explained by movements of the key proximate determinants--the real dollar (relative prices) and relative economic activity levels. As discussed earlier, however, the external deficit is a general equilibrium outcome determined by a large number of variables in the international economy. Looked at in this broader context, there may not be any mystery about the persistence of trade

deficits. For example, since the external deficit must equal the fundamental saving-investment balance, one may simply argue that the persistence of trade and overall external deficits in a general equilibrium setting reflects the continuing large Federal budget deficits underlying the shortfall of domestic saving relative to investment. Note that, attempts to explain the Lawrence-Krugman paradox actually move us, to some extent, in the direction of a general equilibrium result in that they focus on variables that are excluded from the partial-equilibrium trade equations. The excluded variables, such as long-term supply-side developments bear on the relationship between trade and its proximate determinants, and can be viewed as part of a general equilibrium framework for external balances.

V. The Persistence of External Deficits

Since 1991, U.S. external deficits have, once again, widened significantly (refer back to Tables 1 and 2, and Chart 2). In the first half of this year, the current account balance registered a deficit of nearly \$140 billion, or about 2 percent of GDP, up from a deficit of \$51 billion, or about 1 percent of GDP, in 1991. The corresponding increase in the merchandise trade deficit was similar. For 1994 as a whole, both the current account and the merchandise trade deficits are generally expected to average in the range of 2 1/4 - 2 1/2 percent of GDP, somewhat above their levels in the first half of this year.

Some of the recent widening of external deficits reflects faster U.S. growth relative to foreign growth over the last 3 years or so (Chart 7). On present expectations, the deterioration in external balances will be arrested over the next

several quarters as economic activity abroad picks up and growth at home slows down to near trend levels, given no significant changes in the dollar exchange rate. The recent levels of external deficits are overstated, however, because of the cyclical component. At present, the long-run economic growth rates in the U.S. and its major industrial country trading partners appear to be roughly equal; in the 1980s, for example, major foreign industrial countries, as a group, experienced about the same average growth rate as that in the U.S. Adjusted for cyclical effects of faster U.S. growth relative to foreign growth, our current account deficits now are probably running around 2 percent of GDP, with the merchandise trade component showing somewhat greater deficits. These deficit levels are about half their peak levels in the mid-1980s but somewhat higher than their 1990 levels.⁹

What explains the persistence of U.S. external deficits? The discussion of the adjustment process and the Lawrence-Krugman paradox in the previous section alludes to several broad elements of an explanation. This section provides a systematic review of the forces underlying the persistence of external deficits, in part by expanding on comments in the previous section. At one level, looked in terms of the so called proximate determinants of external balances, the explanation is relatively straightforward. With the measured U.S. income elasticity of imports considerably higher than its income elasticity of exports, there is a secular downward pressure on trade balances, given no significant changes in relative prices and equal economic

⁹ The IMF staff (1994) estimates that the cyclically adjusted U.S. trade deficit for 1994 is likely to be about 2.2 percent of GDP, compared with possible actual outcome of about 2.5 percent of GDP.

growth rates here and abroad. The income elasticity differential, as pointed out earlier, implies that the real dollar exchange rate must decline over time to offset the adverse trade trend in order to maintain a given trade balance position. Put another way, in the context of the partial equilibrium trade model, the present trade and external deficits reflect the fact that either the real dollar is too high or that long-run foreign economic growth is too low relative to U.S. economic growth.

At a deeper level, however, this explanation merely highlights the fact that the persistence of external deficits is a structural problem. Two broad approaches may be used to look at fundamental forces underlying this structural problem. Consistent with macroeconomic models, the most common approach is to argue that fundamental macroeconomic forces, such as macroeconomic policies and private saving/investment decisions, working through proximate determinants of trade or other channels are responsible for the persistence of external deficits. This approach does not explicitly address the question of the differences in income elasticities of U.S. imports and exports. It assumes implicitly that those differences reflect variables excluded from the partial-equilibrium trade models.

As an alternative approach, one might consider factors that bear significantly on trade flows but are left out of trade equations and macroeconomic models of the economy. Among other things, this approach may be useful in finding an explanation for the differences in income elasticities of exports and imports. One obvious way to look beyond macroeconomic models is to examine possible significant shifts in (1) the structure of merchandise trade across commodities or industries and across

trading partners, and (2) the broad structure of international transactions in goods, services and investment income flows. Such shifts presumably reflect alterations in long-run supply/demand conditions at a general level as well as at the commodity/industry levels, and may be ultimately caused by changes in productivity, competitiveness and the international trade and economic environment.¹⁰

The remainder of this section considers the two approaches to understanding structural forces underlying the external deficit problem. The first part offers an overview of the fundamental (as opposed to proximate) macroeconomic causes of the intransigence of external deficits. The next two subsections review shifts in the U.S. trade structure, and their causes and implications for the external deficit problem. In this context, the paper looks at several microeconomic considerations underlying the composition of U.S. trade, and also examines broad international trends that may have had important effects on overall U.S. and world trade levels as well as on the structure of U.S. international transactions. The final subsection provides a summary of the main causes of the persistence of U.S. external deficits.

V-A. Fundamental Macroeconomic Forces

At a fundamental level, the main causes of the persistence of U.S. external deficits are the continuing large Federal budget deficits and low private saving. This

¹⁰ In theory, changes in supply conditions and related shifts in the trade structure should be reflected in prices, but for a variety of reasons they are probably not captured in aggregate price indexes used in the standard trade and macroeconomic models. This view is frequently used as a justification for modifying the standard trade equations to include proxies for long-term supply-side developments as explanatory variables.

can be seen by looking at developments in the key components of the saving-investment gap which is equal, by definition, to the overall external deficit. The saving-investment gap can be reduced or eliminated in one of the three ways: increase private saving, reduce public sector dissaving (deficits), reduce private investment. The last option is obviously undesirable from a long-run perspective since it would lower potential capacity and output in the economy.

Reflecting the drop in Federal deficits, the overall public sector dissaving was reduced substantially in the late 1980s; Federal dissaving (deficit on a national income and product accounts basis) fell to 2.3 percent of GNP in 1989 from an average of 4 1/2 percent of GNP over 1984-86 (Chart 8). From 1989 to 1993, however, both Federal and overall public dissaving moved back up to near their peak levels of the mid-1980s; part of the run up in Federal dissaving over 1989-93 was caused by structural factors (see Chart 4). Legislation enacted last year, together with higher revenues reflecting strong economic growth, reduced Federal dissaving significantly in the first half of this year, but even so it remained around 2 1/2 percent of GNP. Overall, developments in the Federal budget deficit seem to have dominated the evolution of the saving-investment balance (and by implication the overall external balance) throughout the period under consideration.

But changes in private saving have also made a significant contribution to the persistence of the saving-investment gap. Private saving relative to GNP, as shown in Chart 8, declined through much of the 1980s to reach the historically low levels in 1989 and 1990. Of course, the decline in private saving may not have been an

exogenous cause of the external deficit but rather part of a jointly determined outcome where both the decline in private saving and the external deficit were driven by the same forces. In any event, the decline in private saving during the late 1980s offset a part of the improvement in Federal budget deficits over that period, helping to maintain a larger saving-investment gap than would have been the case otherwise. Since 1990, private saving has edged up slightly relative to GNP but remains very low by historical standards; even so, the rise in private saving has provided, of course, a partial offset to the increase in Federal dissaving after 1990.

Given the developments in public and private saving, the saving-investment gap would have been considerably larger in the late 1980s and the early 1990s were it not for the fact that private investment relative to GNP has declined, on average, through much of the period since the mid-1980s. As shown in Chart 9, both gross and net private investment, as GNP shares, declined significantly in the late 1980s, helping to narrow the saving-investment gap and, by implication, the overall external deficit. The gap was reduced further in 1991-92 when the combination of cyclical and trend declines produced the lowest levels of gross and net investment relative to GNP during the post-war period. So far in this expansion, private investment share of GNP has shown only a modest recovery.

The low and declining levels of private investment and private saving, together, imply that the excess of domestic spending over output--which is simply another way of looking at the saving-investment balance or the external balance--has been largely supported by high levels of private consumption spending through much of the period.

In the late 1980s, the declining private saving and investment shares of GNP offset the bulk of the downward pressures on the consumption share of GNP resulting from lower public sector deficits or dissaving. From 1990 to 1993, public dissaving increased once again and put upward pressures on the consumption share of GNP but those pressures were more than fully offset by cyclical factors, somewhat higher private saving and historically low levels of private investment.

To some extent, exogenous changes in the U.S. saving-investment balance may be translated into foreign and U.S. external balances directly through changes in foreign consumption and investment demands without significant changes in the real dollar and other relative prices. But this channel is likely to have played only a limited role in international adjustment since world markets for goods and services are not fully integrated.

The evidence and experience strongly suggests that changes in relative prices are necessary for international adjustment.¹¹ Changes in relative prices are caused, of course, by the interaction of U.S. and foreign economic developments. Not surprisingly, therefore, shifts in foreign macroeconomic policies and other macro fundamentals working through changes in relative prices, especially the real dollar, have helped in translating exogenous shocks to the U.S. saving-investment balance into changes in foreign and U.S. external balances.

¹¹ For a brief review of the issues and evidence, see Krugman (1991a). Also see references and discussion in Section IV.

Macroeconomic policies abroad, however, have done more than just play a passive role in the process of conversion of U.S. domestic imbalances into external imbalances. They have, in fact, contributed significant exogenous shocks of their own to the foreign saving-investment balance. In particular, through much of the period since the early 1980s, several major foreign industrial countries have attempted to consolidate their fiscal positions from a long-run perspective. As a result, they have pursued generally restrictive fiscal policies aimed at reducing structural budget deficits and public debt burdens over the long run (Table 6). With monetary policies focused on price stability, lower budget deficits have induced a rise in foreign saving-investment balance, the counterpart of the decline in the U.S. saving-investment balance. Presumably, continued restrictive fiscal policies abroad over the last decade, notwithstanding their favorable contributions to public sector budgetary conditions, may have weakened, on average, foreign income and demand growth over the whole period.

Shifts in macroeconomic fundamentals here and abroad may well be sufficient to explain the intransigence of U.S. external deficits but the available evidence is not consistent with this view. Most empirical research suggests that macroeconomic factors can explain the bulk but not all of the persistence of U.S. external deficits (see, for example, Hooper and Mann (1989) and Hooper (1991)). Changes in macroeconomic policies, by themselves, do not appear to be sufficient for explaining the movements of the current account balance and its proximate determinants during the second half of the 1980s and early 1990s. In particular, changes in various measures

of U.S. fiscal policy correspond more closely to changes in the current account balance over 1980-86 than they do over the subsequent period (Chart 10). While some measures of changes in U.S. fiscal policy appear to be more closely associated than others with changes in current account balances in the post-1986 period, in all cases, the association is feeble and clearly much weaker than in the 1980-86 period.¹²

More generally, macroeconomic shocks to domestic and foreign saving-investment balances, even if they could somehow be translated directly into external balances without changes in the dollar and other relative prices, do not provide a full explanation for the actual outcome for U.S. external balances in the late 1980s and early 1990s. Nor do they offer adequate accounting for the behavior of the dollar and other relative prices, which are crucial to the international adjustment process. Moreover, the macroeconomic approach does not have much to say about possible shifts in long-run supply conditions and their implications for trade flows and for the relationship between trade flows and incomes or prices. With these considerations in mind, I now turn to the role of possible shifts in the trade structure in explaining the persistence of U.S. external deficits.

V-B. Shifts in the Structure of U.S. Trade

Two broad sets of shifts in the structure of trade are considered here: changes

¹² The fact that the association between changes in fiscal policy and current account balances varies considerably from one measure to another is not entirely surprising since the extent of measured exogenous change in fiscal policy can differ significantly under different methodologies.

in the composition of merchandise trade across major end-use commodity groups and across countries/regions, and changes in the broad structure of international transactions in terms of merchandise trade, trade in services and investment income flows. The forces underlying the trade structure shifts and their implications for external deficits are considered in the following subsection.

Table 7 shows imports and exports of the main end-use commodity groups as shares of nonoil imports and nonagricultural exports, respectively. Data in this table indicates that the commodity composition of U.S. trade has changed significantly since 1980. Perhaps the most important shift in the commodity composition of trade is the sharp rise in the share of capital goods. While the share of capital goods in both imports and exports increased over 1980-93, the rise on the import side was more than four times that on the export side. Increases in the volume of computer trade, reflecting technological progress, contributed significantly to the rising trend of capital goods in overall trade.¹³ In fact, excluding computers, the share of capital goods in exports actually declined significantly between 1980 and 1993. The share of non-computer capital goods in imports, however, increased nearly 2 percentage points over that period.

For computers, the import share has also risen considerably faster than the export share over the 1980-93 period. As a result, the share of computers in

¹³ Although the increase in the computer share of trade reflects the growth of volume, there are significant difficulties, as noted below, in sorting out price and quantity components of computer trade: with computer volume being measured in units of computing power, computer prices have been falling but the extent of the decline is far from clear.

commodity imports is now only slightly lower than the corresponding share in exports. This is in sharp contrast to the situation in 1980 when the share of computers in exports was more than double than in imports. These share developments seem to confirm the common place impression that the U.S. has probably lost its edge in computer trade, although not necessarily in computer technology.

The share of consumer goods in U.S. trade has risen steadily since 1980 and, as in the case of capital goods, the increase is larger on the import side than on the export side. In contrast, automotive imports have increased more slowly, on average, than automotive exports over the period; even so, the export share is still only about two-thirds of the import share.

The increased shares of capital goods, consumer goods and autos, taken together, imply that since 1980 U.S. trade has tilted significantly further towards finished manufacturing goods as opposed to industrial supplies, agricultural products and petroleum.¹⁴ Both imports and exports of finished goods have risen substantially relative to other goods since 1980, but the rise in the share of imports of finished goods is particularly large, almost twice that in the share of exports of finished goods. As a consequence, finished goods now account for a larger fraction of imports than of exports, the exact opposite of the situation in 1980.

Most of the rise in the share of capital goods in U.S. trade reflects increased trade in capital goods with Japan, China and Asian newly industrialized economies (NIES)--Hong Kong, Singapore, South Korea and Taiwan (Table 8). These countries

¹⁴ See Hickok (1991) for a detailed analysis of this point.

have experienced rapid increases in their demands for U.S. exports of capital goods and in their supplies of capital goods to the U.S. As a result, they accounted for considerably greater fractions of both U.S. imports and exports of capital goods in 1993 than in 1980. Perhaps more importantly, they have made particularly large inroads in increasing their shares of U.S. imports of capital goods at the expense of lower shares for Canada and Western Europe. Collectively, Japan, China and NIEs, supplied more than half of the total increase in U.S. imports of capital goods over 1980-93.

The pattern of cross-country shifts in U.S. capital goods trade reflects shifts in cross-country trade of both computer and noncomputer capital goods. As shown in Table 9, U.S. computer imports and exports experienced considerable shifts in shares of Canada, Japan, Asian NIEs and Western Europe. In particular, Japan and NIEs have greatly increased their shares of U.S. computer imports, supplying over 70 percent of the total expansion of U.S. computer imports over 1980-93.

The country sources of the increased share of consumer goods in U.S. trade are more mixed than those of the increased share of capital goods.¹⁵ Canada and Japan accounted for larger fractions of U.S. exports of consumer goods in 1993 than in 1980, as did Asian NIEs, Mexico and China (Table 10). The share advances for

¹⁵ Shifts in the cross-country pattern of U.S. auto exports were relatively modest, in line with the modest gain in the auto trade share of overall trade. On the import side, however, Mexico and Canada increased their shares significantly at the cost of lower share for Western Europe and, to a lesser extent, for Japan.

these countries came at the cost of lower shares for Western Europe and Latin America.

In contrast, the shares of U.S. imports of consumer goods supplied by Japan, Asian NIEs and Western Europe fell substantially over 1980-93, while Canada's share remained unchanged over that period. The major beneficiary was China, increasing its share of U.S. imports of consumer goods to just above 18 percent in 1993 from just below two percent in 1980; China alone supplied close to one-quarter of the total dollar increase in U.S. consumer imports over 1980-93. Mexico and Latin America also experienced increases in their shares of U.S. imports of consumer goods.

Turning briefly to broad categories of external trade, merchandise trade remains, by far, the largest component of U.S. international transactions. Since 1980, however, its share in total international transactions has declined, though unevenly over time. Trade in services, by contrast, has experienced large gains in U.S. external transactions (Table 11). In particular, rapid increases in exports of travel/tourism and private services--business/professional, financial, royalties, license fees, etc.--over 1980-93 have resulted in a major upward shift in service exports relative to total exports of goods, services and investment income receipts. The share of services rose to 23 percent of total exports in 1993, more than double its level in 1980 and exports of services accounted for about 30 percent of the total increase in exports over 1980-93.

Imports of services have also increased significantly since 1980, but at a considerably slower average pace than for service exports. Moreover, service imports

still account for only about 14 percent of total imports of goods, services and investment income payments. Looking to the future, several on-going broad international trends, discussed below, suggest that U.S. trade in services is likely to increase in relative importance over the coming years.

Investment income flows in U.S. international transactions have also experienced considerable changes since 1980. Net direct investment income remains in substantial surplus, although both receipts and payments have declined as shares of their respective totals (Table 11). Much more significant shifts have occurred on the portfolio side, however. The combined private and government portfolio income payments have exceeded the counterpart receipts since the mid-1980s, the exact opposite of the situation in the earlier period. With increasingly greater U.S. net portfolio liability position, the gap between payments and receipts has been widening over time. The share of portfolio income payments in total imports rose rapidly through 1990 but fell between 1990 and 1993 because of cyclical declines in interest rates and other rates of return. Given the need to service the increasingly larger external debt, the underlying trend for the income payments share remains upward. In contrast, the share of portfolio receipts in total exports has declined more or less continuously since the mid-1980s, although part of the post-1990 drop reflects cyclical influences, including lower interest rates.

V-C. Causes and Implications of Shifts in the Trade Structure

Shifts in both the commodity composition of merchandise trade and the broad composition of total international transactions in terms of goods, services and income

flows may have significant implications for U.S. trade and external deficits. On balance, these shifts are likely to have contributed to the persistence of external deficits, although changes in some individual components such as the upward shift in the share of trade in services probably had favorable effects on the current account balance. The intransigence of the merchandise trade deficit, in particular, may reflect shifts in the commodity composition of trade since the sensitivity of demand to price changes differs across products. Hickok-Hung (1991-92) argue, for example, that the increased share of capital goods in imports probably lowered the sensitivity of U.S. import demand to the decline in the dollar during the second half of the 1980s because capital goods are less responsive to relative prices than are other goods. The rising share of capital goods, therefore, is likely to have slowed the pace of improvement in U.S. trade balances in the late 1980s.

The implications of structural trade shifts for external deficits depend, to a large extent, on factors causing those shifts. Many factors can affect the composition of an economy's international transactions: changes in the composition of domestic and foreign demands; domestic and foreign supply-side developments, especially regarding capital and labor costs; and domestic and foreign trade/economic policies with potential to influence the composition of demand and/or prices. Within this broad context, this subsection looks at two types of influences that seem to have worked to induce shifts in the structure of trade since the early 1980s. Specifically, I review some microeconomic considerations relating to supply and price determination, and

also consider briefly several ongoing broad trends in the international trade/economic environment bearing on the extent of overall U.S. trade and its composition.

Microeconomic Considerations

One of the most important microeconomic considerations underlying the shifts in merchandise trade composition may have been the pricing behavior of foreign exporting firms in response to the dollar depreciation in the second half of the 1980s. Hooper-Mann (1989a), among others, have argued that foreign firms were willing to reduce profit margins in order to maintain their market share gains of the early and mid-1980s. This meant that the pass-through of the dollar depreciation to U.S. import prices was suspended or at least delayed and reduced relative to what it would have been in the absence of market share considerations.

This type of pricing behavior is fully consistent with the "beachhead" model advanced by Baldwin (1988, also see Hickok-Hung (1991-92)). He argues that the dollar appreciation in the early 1980s induced new foreign producers to sell goods in the U.S. market. Having incurred significant fixed costs for gaining brand name recognition, and setting up distribution/sales networks and related arrangements, these producers were not willing to exit the U.S. market when the dollar depreciated. This behavior led to a permanent change in the composition of market participants, and to shifts in the composition of U.S. imports favoring those commodity groups where foreign firms had gained market shares. It also resulted in greater import supply at any given level of the dollar than before, thereby reducing the impact of the dollar depreciation on trade deficits in the second half of the 1980s. Moreover, since new

participants sold some new or at least differentiated products, the sensitivity of imports to the dollar depreciation could have been diminished, further slowing external adjustment.

Another important microeconomic consideration underlying the shifts in trade composition may have been the pricing behavior of U.S. exporting firms during the dollar appreciation period, 1980-85. U.S. manufacturing exporters did not adjust export prices and profits, to any significant extent, in response to the huge appreciation of the dollar in the first half of the 1980s; instead they continued to base export prices essentially on domestic costs of production as they have done historically. As a result, the dollar appreciation was nearly fully passed-through to foreign currency prices of U.S. exports with the U.S. experiencing a significant loss in competitiveness (Hooper-Mann (1989a), Lawrence (1990) and Hooper-Marquez (1993)). The sharp increase in foreign currency prices of U.S. exports in the first half of the 1980s clearly contributed to the widening of the trade deficit.

U.S. exporters' pricing response to the dollar depreciation in the mid- and late 1980s was similar to their response to the dollar appreciation in the earlier period. In other words, there was very little adjustment of U.S. export prices and profits and most of the dollar depreciation was passed-through to U.S. export prices in foreign currency terms. In theory, this pricing behavior should have provided maximum help to reducing external deficits. In fact, however, the earlier loss of competitiveness was not fully restored because, as suggested by the beachhead model, the huge dollar appreciation in the first half of the 1980s drove some U.S. exporters out of foreign

markets while encouraging exporting firms from other countries to enter those markets. After the dollar fell, fixed cost considerations and new market participants made it difficult for at least some U.S. firms to re-enter those markets.

Some research has also considered the possibility that large exchange rate changes in the 1980s may have induced shifts in the location of production facilities, in addition to shifts in sales/distribution networks, which could result in significant changes in long-run supply conditions. On this view, the appreciation of the dollar in the first half of the 1980s may have lowered the U.S. capital stock relative to the foreign capital stock, contributing to a downward shift in the trade shares of industries or commodity groups with significant long-run supply changes, and causing external adjustment to be slower than before in response to the dollar depreciation in the second half of the 1980s. Hooper (1989) found some evidence to support the view that the ratio of the U.S. manufacturing capital stock to that in other OECD countries declined in response to the appreciation of the dollar in the first half of the 1980s. But other evidence does not appear to be consistent with this hypothesis (see Hickok-Hung (1992-93) and Hooper-Marquez (1993)). In any event, production location decisions by corporations as well as aggregate capital stock developments are dominated by factors other than exchange rates making it difficult to determine the link between exchange rate changes and capital stock movements (see additional comments on recent developments in foreign direct investment flows in the section on international capital mobility).

In theory, price and supply changes resulting from the pricing behavior of foreign and U.S. firms and possible relative capital stock movements in response to exchange rate changes should be reflected in import and export prices. In practice, however, existing aggregate price indexes do not adequately capture new products or existing products sold by new foreign country suppliers (see Feenstra (1994), Feenstra-Shiells (1994) and Hooper-Marquez (1993)). Consequently, the macroeconomic approach to the external deficit is not well suited to considering at least part of the price and supply responses discussed above.

To the extent that the price/supply effects of exchange rate changes in the 1980s contributed to import and export developments without being reflected in measured prices, they imply higher imports and lower exports for any given level of relative prices. These exchange rate-induced supply effects together with other more general long-run supply influences on trade, not explicitly considered in the standard trade models, may be at least partly responsible for the fact that the measured U.S. income elasticity of imports is significantly greater than that of exports. In fact, Helkie-Hooper (1988), Hooper (1989) and others have argued that the gap in income elasticities reflects secular trends in missing supply factors that are correlated with long-term trends in income variables. Helkie and Hooper, in various studies, have attempted to correct for possible measurement bias in relative prices and estimated income elasticities by using relative private capital stocks directly in import and export demand equations as a proxy for long-run supply developments. This estimation procedure narrows the gap in income elasticities of imports and exports considerably

without much effect on estimated price elasticities. In a more recent study, Feenstra-Shiells (1994) estimate aggregate U.S. import demand using bias-corrected import prices and find that the U.S. income elasticity of imports is reduced to 1.7, compared with 2.2 in Helkie-Hooper (1988) and 2.5 in the standard import demand equation without any proxy for supply factors.

A different type of microeconomic factor bearing on the persistence of U.S. external deficits concerns changes in trade protectionism. While average tariff rates have declined steadily since the 1950s, the increased use of non-tariff barriers (NTBs) in the 1980s may have contributed to shifts in the composition of trade and to the persistence of the trade deficit. NTBs break the link between price/exchange rate developments and the value or volume of imports and exports.

NTBs (mostly quantitative restrictions) in foreign markets increased significantly in the 1980s. In particular, NTBs in industrial country import markets increased 20 percent from 1980 to 1986, with the result that 23 percent of the value of nonfuel exports to all industrial countries was covered by NTBs in 1986 (Hooper-Mann (1989b)). Hooper-Mann (1989a) argue that the increased use of NTBs abroad together with U.S. government export controls and extensive licensing procedures for exporters reduced the beneficial effects of the dollar depreciation on U.S. exports, contributing to the persistence of the deficit.

On the import side, between 1981 and 1986, NTBs on U.S. nonoil imports increased 23 percent and covered about 20 percent of the value of nonoil imports in 1986 (see Hooper-Mann (1989a and 1989b)). As pointed out by Hooper-Mann

(1989a), the increased use of quantitative restrictions on U.S. imports may have lowered the import volume response to changes in the dollar and relative prices.

Broad International Trends

Turning to more general changes in the trade and economic environment, at least three broad international trends are worth highlighting: (1) developments in computer technology, especially concerning information/data processing and communications; (2) increasingly greater international capital mobility; and (3) the widening and expanding of the trade liberalization process, and increasing integration of U.S. markets for goods and services with foreign markets for goods and services, especially developing country markets. By altering long-run supply and demand conditions, these ongoing broad trends--which are likely to continue over the foreseeable future--have contributed substantially to the overall growth of U.S. and world trade, at least since the early 1980s. They have also had significant effects on the composition of U.S. international transactions.

Computer Technology. Rapid advances in computer technology have been the driving force for the increasing share of computer goods in merchandise (and capital goods) trade since 1980 (Tables 7 and 9). Measuring the advances in computer technology is a difficult task, however. It involves many aspects including the availability of new products, the decline in relative prices of computing power and increases in productivity. The commonly used hedonic approach attempts to capture these facets through equality adjustments to computer prices, but there is

considerable debate on the nature and extent of such adjustments (see, for example, Meade (1991) and Lawrence (1990)).

The problems of measuring computer prices have made aggregate (relative) prices of internationally traded goods less meaningful, quite apart from the measurement difficulties of import and export prices discussed earlier. As a consequence, it has become harder to estimate merchandise trade equations for nonoil imports and nonagricultural exports, and to predict future trade developments. In particular, price elasticity estimates in trade equations have become less robust and more volatile. Many analysts now feel that the computer industry is sufficiently different from other industries to justify separate treatment of computers, similar to oil and agricultural products. Indeed, trade equations estimated by excluding computers do a better job of explaining past developments and predicting future outcomes than conventional trade equations (see, for example, Meade (1991) and Klitgaard (1993)).

Advances in computer technology (defined broadly) have also had major indirect or derived effects on U.S. and world trade in non-computer goods and services. Output and trade of high-skilled manufacturing goods have benefited from computer-aided design and manufacturing processes. Technological advances have made particularly significant contributions to international tourism and trade in private services. Increases in international communications and data processing have facilitated trade in business and financial services, in part by helping to expand the supply and range of available services. More generally, reductions in communication and transportation costs together with the greatly enhanced capabilities for

international communications and data processing have helped increase international trade in a broad range of private services. Since the U.S. seems to have a comparative advantage in producing many services benefitting from technological advances, its balance on services has improved steadily since the mid-1980s and the share of service exports in international transactions has risen considerably over time.

Advances in international communications, data processing and related technologies, together with financial innovations and reductions in capital controls in many industrial countries, have led to increasingly greater integration of U.S. financial markets with foreign financial markets since the early 1980s. Consequently, cross-border movements of financial capital have grown enormously over time. New technologies have also probably played some role in direct investment flows, in part by influencing investment decisions of U.S. and foreign firms regarding location of production facilities. Increased international mobility of both financial and nonfinancial capital, as discussed below, has had considerable influence on U.S. trade flows.

International Capital Mobility.¹⁶ Greater international capital mobility has had at least two important effects on U.S. trade flows. First, increased integration of U.S. financial markets with major foreign financial markets has enabled the U.S. to finance large external deficits with private saving from abroad on an ongoing basis, reducing some of the pressures for adjustment and thereby contributing to the persistence of external deficits. Without the increased flow of foreign saving, it would not have been

¹⁶ For recent surveys on international capital mobility, see Frankel (1993) and Obstfeld (1994).

possible to sustain continuing external deficits on a long-term basis because U.S. interest rates and the dollar would have experienced persistent upward pressures, on average. That path would have implied increased crowding out of domestic investment and other interest-sensitive private spending, on the one hand, and the possibility of even higher external deficits if domestic growth could somehow be maintained, on the other.

In those circumstances, some sort of adjustment would have been forced on the economy much sooner than has been the case in fact. In the absence of policy changes, automatic market forces might well have eliminated the international deficit much earlier but only at the cost of huge disruptions, or possibly a crisis, in the economy. Alternately, under pressures from exchange/financial market "crises" and demands for increased protection of domestic industries, economic policies would have been obliged to reduce the Federal budget deficit to a much greater extent and in a more timely fashion.

A second important effect of increased international capital mobility on trade flows concerns the role of foreign direct investment. During the 1980s, significantly reduced capital controls on foreign direct investment in East-Asian and other economies, in combination with new computer technologies, encouraged many U.S. exporting firms and their industrial country competitors to establish production facilities in China and other developing economies where labor costs were lower than at home; the move, at least in part, simply represented a shift of domestic production-related operations to low-cost developing countries. In the case of the U.S., the loss of

competitiveness stemming from the strength of the dollar in the 1980s and the perceived uncertainty surrounding the long-term value of the dollar in an environment of continuing external deficits acted as an important additional incentive to seek out places with lower production costs and favorable investment climate. As shown in Table 12, U.S. direct investment flows abroad, on a replacement cost basis, were significantly greater over 1983-88 and 1988-93 than over the earlier period. In the long run, increased U.S. direct investment abroad, including the transfer of technology to foreign affiliates of U.S. firms, will probably reduce U.S. exports by displacing exports of U.S. parents or other U.S. exports. Increased production by foreign competitors in low cost countries may also have adverse consequences for U.S. exports.

Offsetting these potential adverse effects on U.S. exports are the possible favorable effects of increased foreign direct investment flows into the U.S. since the early 1980s. Foreign direct investment flows into the U.S., as shown in Table 12, were considerably greater in the post-1983 period than in the earlier period. Over the long term, increased foreign direct investment in the U.S., through increased production, may expand U.S. exports by displacing imports and, more generally, through the "supply-side" effects resulting from the transfer of competitive advantages from foreign parents to their U.S. affiliates. Orr (1991) suggests that foreign direct investment in U.S. manufacturing during the 1980s may have significant favorable effects on the trade balance over the long run. But given that the cumulative flow of U.S. direct investment abroad has been substantially greater than the corresponding

foreign direct investment in the U.S. since the mid-1980s, the net effect of direct investment flows on U.S. trade balances is likely to be negative over the coming years.

Trade Liberalization and Internationalization. In recent years, a number of factors have led to major advances in international trade liberalization and increasingly greater integration of U.S. markets for goods and services with markets for goods and services in foreign countries. Among these factors, one would surely include the following: international bilateral and multilateral trade agreements including the North American Free Trade Agreement (NAFTA) and the Uruguay Round of the General Agreement on Tariffs and Trade (GATT); a general shift towards market-oriented approach to economic management and growth in developing economies, China and the former Soviet block economies; technological developments, especially their effects on reducing transportation and communication costs; and significant reductions in barriers to direct investment and financial flows.

Since 1980, several international trade agreements have contributed significantly to liberalizing U.S. and world trade.¹⁷ The Tokyo Round of the GATT, completed in 1979 and implemented over the next several years, widened the scope of countries and activities covered by trade liberalization. The Uruguay Round, completed in 1993, went much further than earlier rounds in at least two respects: it included a much wider range of countries; and it covered services and intellectual

¹⁷ See Hickok (1993) for recent trade liberalization trends in developing countries.

property, hitherto untouched by the process, and also dealt with a broader range of goods than before. NAFTA is designed to induce deeper trade and economic relations among the three participating countries. U.S. bilateral trade initiatives with China, Japan, European Union and others have also been aimed at expanding trade between the U.S. and other countries.

Trade liberalization trends in combination with technological and economic developments, noted above, have been the main sources of rapidly increasing internationalization of markets for goods and services. In particular, U.S. markets for goods and services have become increasingly more integrated with foreign, especially developing country, markets for goods and services. Not surprisingly, overall world trade and output have expanded considerably in recent years. The U.S. has, of course, shared the gains from the expansion of world trade and output but, so far, its trade balance has suffered because of the large comparative cost advantage of developing countries.

One important effect of trade liberalization trends and increasing integration of U.S. and foreign markets for goods and services has been to increase trade competition between the U.S. and low-wage (labor cost), outward-oriented foreign economies.¹⁸ As noted earlier, the share of U.S. trade in capital goods claimed by Asian NIEs and China increased substantially between 1980 and 1993, with the rise in U.S. imports from those countries greatly outstripping the rise in U.S. exports to them.

¹⁸ See Sachs and Shatz (1994) for a recent analysis and for references to other recent work on this subject.

China, Mexico and several other low-wage countries have also gained significantly higher shares of U.S. imports of consumer goods. Needless to say, these developments have played a significant role in maintaining higher U.S. trade deficits than otherwise would have been the case.

Over time, trade competition between the U.S. and developing countries has intensified and broadened as more and more developing countries have moved toward greater trade liberalization and internationalization of their markets. The weight of trade competition, driven by the mobility of capital and technology, and the availability of a pool of cheap and increasingly more educated labor force in developing countries, is likely to increase further in the coming years. Consequently, U.S. imports may shift further toward low-wage countries, especially in goods requiring relatively low-skilled labor for production, with potential adverse effects on U.S. trade balances, ceteris paribus. As economic development in the low-wage countries proceeds, however, the competitive pressures on U.S. trade may ease because some of the previously low-wage countries will move up on the wage scale and, more generally, because higher incomes in developing economies will generate greater demand for U.S. goods and services.

Greater integration of U.S. markets for services with markets for services in both developing and other developed countries might also help ease the competitive pressures on U.S. trade. This factor is likely to have contributed to the rise in the share of services in U.S. international transactions in recent years, given the U.S. comparative advantage in producing many financial and other business services. If

the U.S. comparative advantage persists, increasing integration of international markets for services should help push up its surplus on trade in services further in the coming years, with exports of services experiencing further gains in their share of U.S. international transactions.

V-D. Causes of the Persistence of External Deficits: Summary

By far the most important fundamental macroeconomic causes of the persistence of U.S. external deficits are the continuing large Federal budget deficits and low private saving. The effects of domestic macroeconomic factors have been reinforced and exacerbated by shifts in foreign macroeconomic policies, especially efforts to consolidate fiscal positions in Japan and European countries.

Macroeconomic forces, however, explain the bulk but not all of the persistence of external deficits since the mid-1980s. In particular, changes in macroeconomic fundamentals do not seem to account fully for the actual outcome for U.S. external deficits in the late 1980s and early 1990s.

To seek a more complete explanation for the persistence of U.S. external deficits, one must go beyond macroeconomic fundamentals. Several microeconomic considerations and ongoing broad international trends have had important effects on U.S. trade flows and their composition. Microeconomic considerations suggest some price/supply effects on trade flows and their composition that may not be captured in the macroeconomic approach. The macroeconomic approach also does not do full justice to major changes in the international trade and economic environment that

have occurred over the last 10-15 years; the international trade/financial structure and technology are generally assumed as given in macroeconomic models.

On the microeconomic side, at least four developments are likely to have contributed to the persistence of external deficits:

- In response to the dollar depreciation after 1985, many foreign exporting firms reduced profit margins on their U.S. operations in order to maintain market share gains of the earlier period. This pricing behavior lowered the pass-through of exchange rate changes to U.S. import prices, reducing the beneficial effects of the dollar depreciation on U.S. external balances.
- Since U.S. exporting firms were unwilling to reduce profit margins in response to the dollar appreciation in the first half of the 1980s, their competitiveness declined significantly and resulted in major losses of foreign market share. After the dollar depreciation, U.S. firms' attempts to recover the earlier losses in foreign market share appear not to have been fully successful in part because fixed cost considerations and new competitors made it difficult to re-enter foreign markets.
- The large dollar appreciation in the first half of the 1980s may have induced lower capital stock in the U.S. relative to foreign countries with adverse effects on long-run supply conditions and U.S. external balances.
- The increased use of non-tariff barriers both here and abroad may have reduced the favorable effects of the dollar depreciation on the U.S. trade balance.

For a variety of reasons, some of the above price/supply effects may not be captured by existing aggregate import and export price indexes; the available evidence seems to confirm this impression. As a result, the macroeconomic approach does not adequately represent these price/supply effects.

Broad international trends have contributed to the persistence of U.S. external deficits in at least two major respects. First, trade liberalization trends and greater integration of U.S. and foreign markets for goods and services has increased trade competition between the U.S. and low-wage, outward-oriented foreign economies. This has resulted in a large shift in U.S. imports of capital and consumer goods toward low-wage countries with major adverse consequences for U.S. trade balances. The competitive pressures on U.S. trade from this source are almost certain to continue in the coming years.

A more general effect of international trends for U.S. external deficits stems from the greatly increased international capital mobility. Specifically, increased integration of U.S. financial markets with foreign financial markets has enabled the U.S. to finance large external deficits with private saving from abroad on an ongoing basis, reducing some of the pressures for external adjustment and contributing to the persistence of external deficits. In the absence of increased private financing from abroad, large external deficits could not have been sustained on a long-term basis because U.S. interest rates and the dollar would have experienced persistent upward pressures, with attendant adverse consequences for domestic investment and other interest-sensitive expenditures.

VI. Medium-Term Prospects of U.S. External Deficits

For 1994, the current account and the merchandise trade deficits are widely expected to average in the range of 2 1/4 - 2 1/2 percent of GDP. On present expectations, both measures of the external deficit will likely stabilize around their current levels, adjusted for small cyclical effects, over the next year or two. Taking this near-term outlook for granted, I now turn to the much more difficult issue of medium-term prospects for U.S. external deficits.

Numerous economic cross-currents and shocks will affect the outcome for external deficits over the next 5-10 years. Some of these events are unforeseeable by definition, while others can be viewed only as broad ranges of possibilities. It is, therefore, not possible to predict with any confidence developments in external deficits over the medium run. Recent experience teaches us that medium-term and long-term expectations, even at a fairly general level, can be very wrong. Remember, no one foresaw that optimism of the early 1970s about long-term economic prospects would be so thoroughly destroyed by the energy and debt crises, the productivity slowdown and other major difficulties of the 1970s and 1980s.

With these considerations in mind, I do not offer traditional forecasts in this section. Instead, I deal with only general possibilities for U.S. external deficits over the medium term. Specifically, using the present levels of external deficits as the point of departure, I review briefly possible major economic forces, both positive and negative, that could substantially alter the outcome for external deficits. Within this

context, I provide a general sense of the most likely or "middle range" scenario for U.S. external deficits.

VI-A. Possible Influences on External Deficits

Among the factors that will influence developments in external deficits, the following five may prove to be particularly important: changes in productivity, trade with low-wage, outward-oriented foreign economies, trade in services, changes in macroeconomic policies here and abroad, and sustainability of private foreign financing for U.S. external deficits.

Productivity. U.S. business output per worker rose at an average annual rate of about 3 percent in the 1950s and 1960s. In the 1970s and 1980s, however, its growth slumped to only about 1.2 percent. Data for the last four years, 1990Q4 to 1994Q3, indicate an acceleration in the growth of business output per worker to around 2.3 percent per year. Although part of the recent acceleration in productivity is likely to have been a cyclical phenomenon, trend productivity growth seems to have picked up considerably. Are we in the midst of a productivity revival?

The case for a revival of productivity in the 1990s is easy enough to make. As noted earlier, communications, data processing and related fields have experienced rapid technological advances over the last fifteen years or so. Other areas such as biotechnology also seem to be undergoing significant advances. On top of new technologies, managerial changes caused by the rapid pace of mergers/takeovers and buyouts over the last decade, and still in process, may have contributed to an acceleration in productivity growth. But so far technological and managerial advances

seem not to have shown up in productivity growth to any significant extent. Since the absorption of new technologies frequently takes a relatively long time, however, it may be that productivity effects are beginning to be felt only recently. Even so, the optimistic case for a revival of productivity growth is not conclusive: our social problems, especially the growth of the underclass and the poor quality of education and achievement, may continue to overwhelm any potential positive forces (see Krugman (1994) for a somewhat more detailed analysis along these lines)).

If trend productivity does experience a boom in the 1990s and beyond--to say around 2 1/2 percent per year, up from an average of 1.2 percent in the last two decades--it could effectively defuse the external deficit problem. Faster economic growth would yield greater tax revenues and even with somewhat higher public expenditures for infrastructure and social needs, the budget deficit could fade away. As a result, national saving would rise relative to GDP, substantially reducing or perhaps even eliminating the saving-investment gap and, by implication, the external deficit.

Faster growth would also help in minimizing adverse consequences of the external deficit. Even while the external deficit is still continuing, it would shrink rapidly relative to GDP, increasingly becoming a smaller drain on resources. Stronger economic performance and smaller trade deficits would tend to defuse trade policy conflicts with Japan and other countries.

A more likely scenario for trend productivity in the 1990s is that it may turn out to be only modestly faster than before, perhaps no more than 0.3 percentage points

above the 1.2 percent rate of the last two decades; most available medium-term forecasts of the economy generally assume less than 1 1/2 percent productivity growth over the next five or six years. This may help a little, but not much, in dealing with the external deficit problem. In fact, some acceleration in trend productivity is needed just to maintain the recent overall growth performance for demographic reasons: labor force participation rate is expected to be slower in the coming years than in the last decade.

Trade with Low-Wage Economies. As discussed earlier, trade competition between the U.S. and low-wage, outward-oriented foreign economies has increased greatly over the last 10-15 years. And it is expected to intensify and broaden much further over the coming years as on-going trade liberalization trends and increasing integration of U.S. and foreign markets enable outward-oriented developing economies to take advantage of international mobility of capital and technology, and their own pool of cheap and increasingly more educated labor force.

Trade competition with low-wage countries generates two opposing influences on U.S. external balances. On the one hand, U.S. imports from low-wage countries expand rapidly causing deterioration in the trade balance. On the other hand, as wages and incomes in low-wage countries rise in the long run, demand for U.S. exports increases with beneficial results for the trade balance. The adverse effects on the trade balance will dominate as long as trade competition broadens to include more and more low-wage countries and/or wages and incomes in those countries don't rise sufficiently.

Although some of the previously low-wage countries, such as Asian newly industrialized economies, are now significant importers of U.S. produced goods, the adverse effects of trade competition continue to dominate U.S. external balances. This situation is unlikely to change over the medium run, given that U.S. trade competition with low-wage economies is expected to broaden over time. U.S. imports will tilt considerably further toward low-wage economies, with China, India, Mexico, Brazil, Malaysia, Thailand and many other countries making significant contributions to a broad range of U.S. imports of capital and consumer goods. The increase in import competition will be heavily concentrated toward low-skilled goods but it will also include significant amounts of middle-skilled goods. In addition, past experience suggests that wages and incomes in developing economies rise rather gradually so that benefits for U.S. exports are unlikely to provide a sufficient offset to the adverse effects on imports, at least over the next several years.

Trade in Services. Since the mid-1980s, the surplus on trade in services has grown considerably, helping to narrow overall U.S. external deficits. As discussed elsewhere in this paper, over time, exports of services have experienced major gains in their share of total international transactions. Assuming that the U.S. comparative advantage in services persists, increasing integration of U.S. and foreign markets together with protection of intellectual property rights should lead to significant further increases in U.S. surplus on trade in services over the next several years.

The increase in surplus on services, however, is unlikely to prove large enough to defuse the external deficit problem. The mobility of technology and capital will shift,

over time, many knowledge-based business and financial services to foreign economies, reducing or eliminating the U.S. comparative advantage. This process is already underway; many sophisticated computer software and other services are now being offered by other countries, including some developing countries. Moreover, with easy transfer of technology and capital, some U.S. exports of services may shift to foreign subsidiaries of U.S. multinational parents as increasingly more educated cheap labor force is becoming available abroad.

Macroeconomic Policies. If the commitment to price stability or low inflation shown by major central banks over the last decade is a good guide for the future, it is safe to assume that, in the medium run, monetary policies here and abroad will generally remain aimed at price stability and noninflationary growth. In this setting, the implications of short-run changes in monetary policies for external balances will be roughly neutral over the next 5-10 years time frame. It is possible, of course, that an unanticipated shock will cause substantial and persistent deviations in foreign or domestic monetary policies from the assumed medium-term course that could potentially alter the outcome for U.S. external balances by affecting exchange rates (relative prices) and demand conditions, but such deviations appear unlikely at this time.

The likely future course of U.S. fiscal policy is much less clear and will have far more important consequences for U.S. external balances. Assuming 2.4 average potential growth and somewhat above 3 percent average inflation, the Congressional Budget Office (CBO, August 1994) projects that the Federal deficit, on a current

services basis (no changes in current law and policies affecting tax revenues and mandatory spending), will remain roughly stable in the range of 2.3 - 2.5 percent of GDP over the next four years, but will begin to rise once again after 1998. Since economic and technical assumptions underlying CBO projections are quite uncertain, a more favorable outcome for the deficit is possible. But even the most optimistic outlook for the Federal deficit, on a current services basis, implies a substantial decline in national saving which would induce, ceteris paribus, a corresponding decline in the saving-investment balance, widening overall U.S. external deficits. The deterioration in U.S. external deficits could be reinforced and aggravated if fiscal policies abroad were to tighten over the next several years.

In the medium run, Congress and the Administration will surely attempt to contain, at a minimum, the possible rising trend of the Federal deficit. The deficit in the late 1990s and beyond, therefore, may turn out to be smaller relative to current expectations. But given that overall demands on the public purse will remain strong, as will the public's aversion to tax increases, the Federal deficit will continue to be a large drain on national saving--perhaps at or somewhat above 2 percent of GDP --and a major fundamental source of our external deficits.

Sustainability of Foreign Financing. Over the last 10 years or so, increased integration of U.S. and foreign financial markets has enabled the U.S. to finance massive external deficits with private saving inflows from abroad. Can this go on indefinitely?

Well, perhaps not indefinitely! But it is certainly not unreasonable to assume that the U.S. could continue to finance its large current account deficits with private foreign saving for another 10 years or maybe even 20 years.¹⁹ The main reason for this belief is that a huge and growing U.S. economy can take on a massive debt load without becoming unduly overburdened. Specifically, large current account deficits in absolute dollar terms may not be overly burdensome for the economy if they claim a stable or declining share of GDP. For example, with nominal GNP growing around recent rates of about 6 percent, current account deficits at the 1994 level of about \$160 billion per year for the next ten years imply that the U.S. net external debt (net foreign investment position) in 2005 would still be less than 20 percent of GNP. Net investment income of foreigners on this amount is well within our ability to pay.

The willingness of foreign private investors may also be affected by the size and growth of dollar holdings abroad. But here too a large U.S. current account deficit may not be a problem because the share of claims on the U.S. in international portfolios will remain modest as long as the size of the deficit is relatively stable. In these circumstances, dollar holdings in world portfolios are unlikely to be a major cause for concern for foreign private investors.

Thus, there is a good chance that foreign private financing of U.S. external deficits will be sustained in the medium run. The risk to foreign investor confidence is a real possibility, however. The continued large U.S. borrowings and the increasingly

¹⁹ See Krugman (1994) for a more detailed discussion of this view. On the more general issue of long-run sustainability of U.S. current account deficits, see Howard (1989), Pigott (1989) and Stein (1987).

greater U.S. external debt could, at some point in the next 10 years, undermine the confidence of foreign private investors. But the loss of confidence is not just a matter of pure economics. With growing foreign ownership of U.S. assets, economic nationalism in this country is likely to increase over time and popular sentiments may turn negative toward foreign ownership. This could make foreign investors nervous about the security of their investments, causing them to be reluctant to hold more U.S. assets or perhaps even encouraging capital flight. Even without a cutoff of foreign financing, the U.S. could experience considerable pressures on exchange and interest rates: to induce private foreigners to hold and accumulate huge claims on the U.S., the expected dollar return needs to remain sufficiently attractive relative to foreign assets and this may require downward pressures on the dollar or increases in domestic interest rates.

VI-B. A Middle Range Scenario

Possible developments in various factors, discussed above, offer no unique or even a narrow range implication for the outcome of U.S. external deficits. Based on our best guess about developments in the key factors, a middle range scenario for the current account deficit is that it would average 1 1/2 - 2 percent of GDP over the next ten years, almost one-half percentage point below the 1994 level. With surplus on trade in services not quite large enough to offset unilateral transfers and the deficit on investment income, the merchandise trade deficit could be somewhat greater than the corresponding current account deficit.

This scenario assumes that foreign private saving inflows would continue to finance the current account deficit without any serious disruptions, and that some fiscal policy initiatives would be undertaken to keep the Federal deficit relatively stable around 2 percent of GDP. The real effective dollar is assumed to be somewhat lower, on average, over the medium term than its recent value. The scenario is also consistent with our best guess for possible future developments in the other three factors--trade competition is expected to generate significant upward pressures on U.S. trade deficits but those pressures would be ameliorated, at least to some extent, by greater surplus on trade in services together with a modest acceleration in productivity growth. Note that many other combinations of possible negative effects of trade competition and favorable effects of surplus on services and productivity growth may also be consistent with our middle range scenario.

The recent medium-term projections by the International Monetary Fund Staff (IMF) appear to be somewhat less optimistic than the middle range scenario presented here. Assuming a constant real dollar and roughly unchanged fiscal policy, the IMF (1994) projects that the U.S. current account deficit would continue to be around 2 1/2 percent of GDP over the next 5-8 years. In an alternative which assumes considerably greater fiscal consolidation, the IMF forecasts somewhat smaller U.S. current account deficits over the medium run, approaching the upper end of our middle range scenario.²⁰

²⁰ Assuming significant further fiscal consolidation in the coming years, Richardson et al (1994) also offer a similar projection for the U.S. current account deficit over the next 5-6 years.

The possibility of a significantly better outcome for the U.S. current account balance cannot be ruled out. It could happen, for example, if productivity growth were to be faster than assumed here or fiscal policy tighter, yielding lower Federal deficits relative to expectations. On the whole, however, the risk is much greater that U.S. external deficits in the medium run would turn out to be substantially larger than the middle range scenario. A major rationale for this pessimism is that our best guess for productivity growth, macroeconomic policies and possible effects of trade competition with low-wage economies could easily prove to be quite optimistic. Moreover, with rapidly increasing U.S. external debt, a serious disruption in foreign private financing of external deficits remains a real possibility at some point during the next ten years.

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Table 1

U.S. External Balances*
(Annual Average)

	<u>Balance on Current Account</u>		<u>Balance on Goods and Services</u>	<u>Real Net Exports of Goods and Services</u>	
	<u>Billion \$</u>	<u>Percent of GDP</u>	<u>Percent of GDP</u>	<u>Billion 1987 \$</u>	<u>Percent of GDP</u>
1960-82	-1.1	-0.2	-0.3	-14.6	-0.5
1983-94	-107.5	-2.2	-2.0	-90.7	-2.0
1983-88	-119.4	-2.8	-2.8	-120.9	-2.8
1989-94 ^a	-95.5	-1.6	-1.2	-60.4	-1.2
1982	-11.4	-0.4	-0.8	-7.4	-0.2
1983	-44.5	-1.3	-1.7	-56.1	-1.4
1984	-99.8	-2.6	-2.9	-122.0	-2.9
1985	-125.4	-3.1	-3.0	-145.3	-3.4
1986	-151.2	-3.5	-3.3	-155.1	-3.5
1987	-167.1	-3.7	-3.3	-143.1	-3.1
1988	-128.2	-2.6	-2.3	-104.0	-2.2
1989	-102.8	-2.0	-1.7	-73.7	-1.5
1990	-108.9 ^a	-2.0 ^a	-1.4	-54.7	-1.1
1991	-50.8 ^a	-0.9 ^a	-0.5	-19.5	-0.4
1992	-69.3 ^a	-1.2 ^a	-0.7	-32.3	-0.6
1993	-103.9	-1.6	-1.2	-73.9	-1.4
1994 ^b	-138.5	-2.1	-1.5	-108.7	-2.1

* Balances on current account, and goods and services are reported on a balance of payments (BOP) basis, while real net exports are reported on a national income and product accounts (NIPA) basis. The coverage of BOP balance on goods and services differs slightly from NIPA net exports of goods and services due largely to differences in the treatment of trade with U.S. territories and Puerto Rico, gold trade and transactions under military grant programs.

^a Excluding cash contributions by foreign governments to help pay costs of the Persian Gulf War; inclusive of cash contributions, current account deficits were \$91.7 billion in 1990, \$7 billion in 1991 and \$67.9 billion in 1992.

^b Annualized data for the first half of 1994.

Table 2

Components of U.S. Current Account Balance
(Billion \$, Annual Average)

<u>Item</u>	<u>1977-82</u>	<u>1983-88</u>	<u>1989-94^a</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994^a</u>
<u>Balance on current account</u>	<u>-5.6</u>	<u>-119.4</u>	<u>-95.5^b</u>	<u>-50.8^b</u>	<u>-69.3^b</u>	<u>-103.9</u>	<u>-138.5</u>
<u>Balance on goods/services</u>	<u>-23.6</u>	<u>-115.7</u>	<u>-69.4</u>	<u>-28.5</u>	<u>-40.4</u>	<u>-75.7</u>	<u>-102.5</u>
Merchandise trade balance	-30.4	-122.1	-114.1	-74.1	-96.1	-132.6	-157.5
Balance on services	6.8	6.4	44.7	45.6	55.7	56.9	55.0
<u>Balance on investment income</u>	<u>27.0</u>	<u>18.7</u>	<u>8.5</u>	<u>14.8</u>	<u>4.5</u>	<u>3.9</u>	<u>-6.5</u>
Direct investment income, net	24.3	26.6	50.8	55.4	47.7	52.4	44.5
Portfolio investment income, net	2.7	-7.9	-42.3	-40.6	-43.2	-48.4	-51.0
<u>Unilateral transfers, net</u>	<u>-9.1</u>	<u>-22.3</u>	<u>-34.7</u>	<u>-35.8^b</u>	<u>-33.3^b</u>	<u>-32.1</u>	<u>-30.0</u>

^a Annualized data for the first half of 1994.

^b Excludes cash contributions during 1990-92 by foreign governments to help pay costs of the Persian Gulf War.

Table 3

Merchandise Trade Balance, by Region and Country
(Billion \$, Annual Average)

<u>Region/Country</u>	<u>1980-82</u>	<u>1985-87</u>	<u>1988-90</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994^a</u>
Total, All Countries	-30.0	-142.3	-117.1	-74.1	-96.1	-132.6	-157.5
Canada	-4.3	-13.2	-9.6	-7.1	-9.5	-12.1	-16.0
Japan	-14.4	-51.6	-48.3	-45.0	-50.5	-60.5	-65.0
Western Europe	-13.4	-25.9	-6.0	14.8	3.1	-9.7	-13.0
Germany ^b	-1.3	-13.4	-10.0	-5.3	-8.4	-10.1	-11.0
Asian NIEs ^c	-5.7	-28.1	-25.3	-14.9	-15.5	-14.5	-13.0
China	1.7	-1.5	-6.7	-12.7	-18.3	-22.8	-22.0
Latin America/Other Western Hemisphere	-0.1	-13.0	-8.8	0.3	6.2	3.0	0.4
Mexico	1.1	-5.6	-2.5	1.6	1.6	4.9	1.1

^a Annualized data for the first half of 1994.

^b Includes the former German Democratic Republic (East Germany) beginning in the fourth quarter of 1990.

^c Includes Hong Kong, Singapore, South Korea and Taiwan.

Table 4

Changes in Major Factors Behind U.S. External Deficits, 1980-86

<u>Proximate Causes</u>	<u>Change^a</u>
1. U.S. real GNP	14.2
2. Foreign real GNP ^b	12.5
3. Ten major industrial countries	10.8
4. U.S. capacity utilization	0.7
5. Foreign capacity utilization	-2.2
6. Relative price of nonoil imports	-30.3
7. Nonoil import price	-1.3
8. U.S. price (GNP deflator)	28.9
9. Exchange rate ^c	50.8
10. Relative price of nonagricultural exports	-4.0
11. Nonagricultural export price	3.2
12. Foreign price (consumer price index) ^d	56.8
13. Exchange rate ^d	49.5
 <u>Fundamental Causes</u>	
14. U.S. fiscal policy (1980-85)	-2.3 ^e
15. Federal government (1980-85)	-3.7 ^e
16. Foreign fiscal policy (1980-85) ^f	2.8 ^e
17. Central government (1980-85) ^f	1.2 ^e
18. U.S. real long-term interest rates (average level) ^g	5.7
19. Foreign real long-term interest rates (average level) ^g	4.1
20. U.S./foreign real interest differential (1980-85)	2.0 ^h
 <u>Memo: change in current account as percent of GDP</u>	 -3.6

Source: Helkie-Hooper (1988), tables 2-10 and 2-15, and Figure 2-12.

^a The logarithmic percentage change ($100\Delta\log x$), except as noted otherwise.

^b Includes real GNP of OECD and developing countries, weighted by bilateral U.S. nonagricultural export shares. ^c Includes ten industrial countries and eight major developing countries, weighted by bilateral U.S. nonoil import shares.

^d Includes ten industrial countries and eight major developing countries, weighted by multilateral trade shares. ^e IMF estimates of cumulative exogenous changes in budget balances as percent of GNP; a positive number indicates a fiscal contraction. ^f Average of changes for Canada, France, Germany, Italy, Japan and the United Kingdom. ^g Bond yields, adjusted for inflation expectations measured by consumer prices; foreign countries include ten industrial countries, weighted by share in world trade. ^h Percentage point difference in average levels.

Table 5

Major Determinants of External Balances, 1982-85 and 1985-90

<u>Proximate Macroeconomic Factors</u>	<u>Change over</u>	
	<u>1982-85</u>	<u>1985-90</u>
1. U.S. real GNP ^a	4.4	2.7
2. Foreign real GNP ^{a,b}	2.9	3.6
3. Japan ^a	4.0	4.5
4. Germany ^a	2.2	3.4
5. Nominal exchange rate ^c	38.1 ^d	-43.1
6. Real exchange rate ^c	35.1 ^d	-47.0
 <u>Fundamental Macroeconomic Factors</u>		
7. U.S. fiscal policy ^e	-2.0	0.8
8. Federal government ^e	-1.9	1.8
9. Federal structural deficit ^f	-2.8	1.6
10. Foreign fiscal policy ^e	-0.6	1.6
11. U.S. real long-term interest rates ^g	7.6	4.1
12. Foreign real long-term interest rates ^g	5.1	4.6
 <u>Memo: change in current account as percent of GDP^h</u>	 -3.1	 1.5

^a Average annual growth rate calculated from annual rates reported in OECD Economic Outlook, June 1994.

^b OECD excluding the U.S.

^c The logarithmic percentage change ($100\Delta\log x$) in IMF indexes.

^d Change from 1980 to 1985.

^e Cumulative exogenous change estimated by IMF, World Economic Outlook, May 1991; foreign countries include six major industrial countries.

^f Cumulative change in standardized employment deficit as percent of potential GDP over fiscal years, estimated by CBO, The Economic and Budget Outlook, January 1994.

^g Average levels of bond yields adjusted for inflation expectations measured by consumer prices (Federal Reserve Bond staff estimates).

^h Change over 1982-86 in the first column and over 1986-90 in the second column.

Table 6

General Government Structural Balances*
(As Percent of Trend GDP, Annual Average)

	<u>1978-82</u>	<u>1983-92</u>	<u>1993</u>	<u>1994</u>
United States ^a	-1.2	-3.1	-3.3	-2.9
Japan ^b	-4.8	0.6	1.9	0.8
Germany ^c	-3.7	-1.8	-3.1	-2.3
France	-2.1	-1.6	-2.9	-2.5
United Kingdom	-4.0	-2.8	-5.3	-4.3
Italy	-10.7	-10.4	-6.9	-6.6
Canada	-3.1	-4.6	-3.4	-2.6

* OECD estimates (surplus +, deficit -) of the structural component of public sector financial balances (OECD Economic Outlook, June 1994).

^a Excludes deposit insurance outlays, and 1991 receipts relating to Operation Desert Storm.

^b Excludes 1991 expenditures relating to Operation Desert Storm.

Table 7

Changing Commodity Composition of U.S. TradePercent Share of Non-agricultural Exports

	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1993</u>	<u>Percentage Point Change in Share, 1980-1993</u>
Capital goods ^a	41.9	42.6	43.9	44.1	2.2
Computers ^b	6.0	10.3	11.2	11.7	5.7
Consumer goods ^a	9.8	7.8	12.3	13.2	3.4
Automotive exports	9.5	13.4	10.5	12.7	3.2
Finished goods ^c	61.2	63.8	66.7	70.0	8.8
Industrial supplies ^d	30.6	23.1	23.6	22.3	-8.3

Memo: Share of agricultural products in total exports	18.8	13.7	10.3	9.6	-9.2

Percent Share of Non-petroleum Imports

Capital goods ^a	18.6	21.4	26.6	28.3	9.7
Computers ^b	2.8	4.8	8.1	10.7	7.9
Consumer goods ^a	20.2	23.1	24.2	24.9	4.7
Automotive imports	16.6	22.6	20.3	19.0	2.4
Finished goods ^c	55.4	67.1	71.1	72.2	16.8
Industrial supplies ^d	26.6	19.0	17.1	16.8	-9.8

Memo: Share of petroleum imports in total imports	31.9	15.2	12.5	8.7	-23.2

^a Excludes automotive vehicles, engines and parts.

^b Includes computers, peripherals and parts, and semi-conductors.

^c Sum of capital goods, consumer goods and automotive goods.

^d Excludes energy and agricultural products.

Table 8

Changing Regional Composition of U.S. Trade in Capital Goods

	<u>Exports</u>			<u>Imports</u>		
	<u>1993 Share</u> (percent)	<u>Change in Share over 1980-93</u> (percentage point)	<u>Share of \$ Change over 1980-93</u> (percent)	<u>1993 Share</u> (percent)	<u>Change in Share over 1980-93</u> (percentage point)	<u>Share of \$ Change over 1980-93</u> (percent)
Canada	16.4	2.6	18.3	9.5	-4.4	8.4
Japan	8.0	2.5	9.7	29.4	6.6	31.1
Western Europe ^a	23.9	-3.8	21.2	22.4	-11.5	19.4
Germany	5.2	-0.6	4.8	5.8	-5.6	5.8
Asian NIES ^b	13.6	5.7	17.7	18.5	8.4	20.7
China	3.0	2.4	4.7	2.2	2.2	2.8
Mexico	7.5	0.5	7.8	5.1	-0.5	5.0
Latin America ^c	4.3	-2.3	2.7	0.6	-0.2	0.6
<hr/>						
Memo: Total for all countries, Billion \$	182.2	--	105.9	152.4	--	120.8

^a Includes Belgium, France, Germany, Italy, Netherlands, Spain, Switzerland, and the United Kingdom.

^b Asian newly industrialized economies include Hong Kong, Singapore, South Korea and Taiwan.

^c Includes Brazil, Argentina, Chile and Venezuela.

Table 9

Changing Regional Composition of U.S. Trade in Computers

	<u>Exports</u>			<u>Imports</u>		
	<u>1993 Share</u> (percent)	<u>Change in Share over 1980-93</u> (percentage point)	<u>Share of \$ Change over 1980-93</u> (percent)	<u>1993 Share</u> (percent)	<u>Change in Share over 1980-93</u> (percentage point)	<u>Share of \$ Change over 1980-93</u> (percent)
Canada	21.3	12.3	26.4	6.3	-3.7	6.0
Japan	13.3	6.3	16.0	32.4	18.7	34.1
Western Europe ^a	35.4	-6.2	32.9	6.0	-6.9	5.3
Germany	8.5	-3.3	7.1	1.4	-2.1	1.2
Asian NIES ^b	24.9	14.6	30.9	36.0	8.6	36.8
<hr/>						
Memo: Total for all countries, Billion \$	37.5	--	26.5	57.5	--	52.7

^a Includes Belgium, France, Germany, Italy, Netherlands, Spain, Switzerland, and the United Kingdom.

^b Asian newly industrialized economies include Hong Kong, Singapore, South Korea and Taiwan.

Table 10

Changing Regional Composition of U.S. Trade in Consumer Goods

	<u>Exports</u>			<u>Imports</u>		
	<u>1993 Share</u> (percent)	<u>Change in Share over 1980-93</u> (percentage point)	<u>Share of \$ Change over 1980-93</u> (percent)	<u>1993 Share</u> (percent)	<u>Change in Share over 1980-93</u> (percentage point)	<u>Share of \$ Change over 1980-93</u> (percent)
Canada	20.1	8.0	36.9	4.2	0.0	4.2
Japan	11.6	5.0	12.4	10.0	-7.2	7.5
Western Europe ^a	24.7	-9.0	20.5	14.8	-5.2	13.0
Germany	4.4	-2.8	3.1	2.0	-0.9	1.7
Asian NIES ^b	7.7	2.0	8.7	19.0	-15.1	13.9
China	0.4	0.4	0.5	18.2	16.7	23.9
Mexico	8.9	3.2	10.4	5.6	2.8	6.5
Latin America ^c	3.5	-2.9	2.2	1.8	0.5	2.0
<hr/>						
Memo: Total for all countries, Billion \$	54.7	--	36.9	134.0	--	99.7

^a Includes Belgium, France, Germany, Italy, Netherlands, Spain, Switzerland, and the United Kingdom.

^b Asian newly industrialized economies include Hong Kong, Singapore, South Korea and Taiwan.

^c Includes Brazil, Argentina, Chile and Venezuela.

Table 11

Changing Composition of U.S. International Transactions

	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1993</u>	<u>Percent of Total \$ Change, 1980-93</u>
<u>Percent Share of Total Exports of Goods, Services and Income</u>					
<u>Merchandise Exports^a</u>	<u>65.1</u>	<u>56.6</u>	<u>55.9</u>	<u>60.5</u>	<u>56.6</u>
Nonagricultural Goods	52.9	48.8	50.1	54.7	56.2
<u>Services^a</u>	<u>11.2</u>	<u>16.8</u>	<u>19.7</u>	<u>23.0</u>	<u>32.8</u>
Travel ^b	3.8	5.8	8.4	9.8	14.8
Other Transportation	3.4	3.9	3.1	3.1	2.8
Private Services ^c	3.9	6.9	8.1	10.0	15.1
<u>Income Receipts on U.S.</u>					
<u>Assets Abroad</u>	<u>21.2</u>	<u>24.3</u>	<u>23.0</u>	<u>15.1</u>	<u>10.0</u>
Direct Investment Receipts	10.8	7.7	8.4	7.6	5.0
Other Private	9.6	15.1	13.1	6.8	4.5
Government	0.8	1.5	1.5	0.7	0.5
<hr style="border-top: 1px dashed black;"/>					
Memo: Exports, Total/Change, (Billion \$) ^d	344.4	381.6	696.8	755.5	411.1
<hr style="border-top: 1px dashed black;"/>					
<u>Percent Share of Total Imports of Goods, Services and Income</u>					
<u>Merchandise Imports^a</u>	<u>77.8</u>	<u>69.9</u>	<u>66.0</u>	<u>71.3</u>	<u>68.8</u>
Nonoil Goods	51.0	59.2	57.8	65.0	74.5
<u>Services^a</u>	<u>9.2</u>	<u>12.3</u>	<u>13.2</u>	<u>14.0</u>	<u>17.3</u>
Travel ^b	4.2	6.4	6.3	6.3	7.7
Other Transportation	3.5	3.2	3.1	2.9	2.6
Private Services ^c	1.1	2.3	3.5	4.5	6.8
<u>Income Payments on Foreign</u>					
<u>Assets in the U.S.</u>	<u>12.7</u>	<u>15.1</u>	<u>18.5</u>	<u>13.3</u>	<u>13.7</u>
Direct Investment Payments	2.5	1.5	0.4	0.6	-0.7
Other Private	6.4	8.8	12.7	7.6	8.5
Government	3.8	4.8	5.4	5.1	5.9
<hr style="border-top: 1px dashed black;"/>					
Memo: Imports, Total/Change, (Billion \$) ^d	333.8	484.0	754.9	827.3	493.5

^a Excludes U.S. military transactions.

^b Travel and passenger fares.

^c Includes royalties, license fees and other private services.

^d Includes U.S. military transactions.

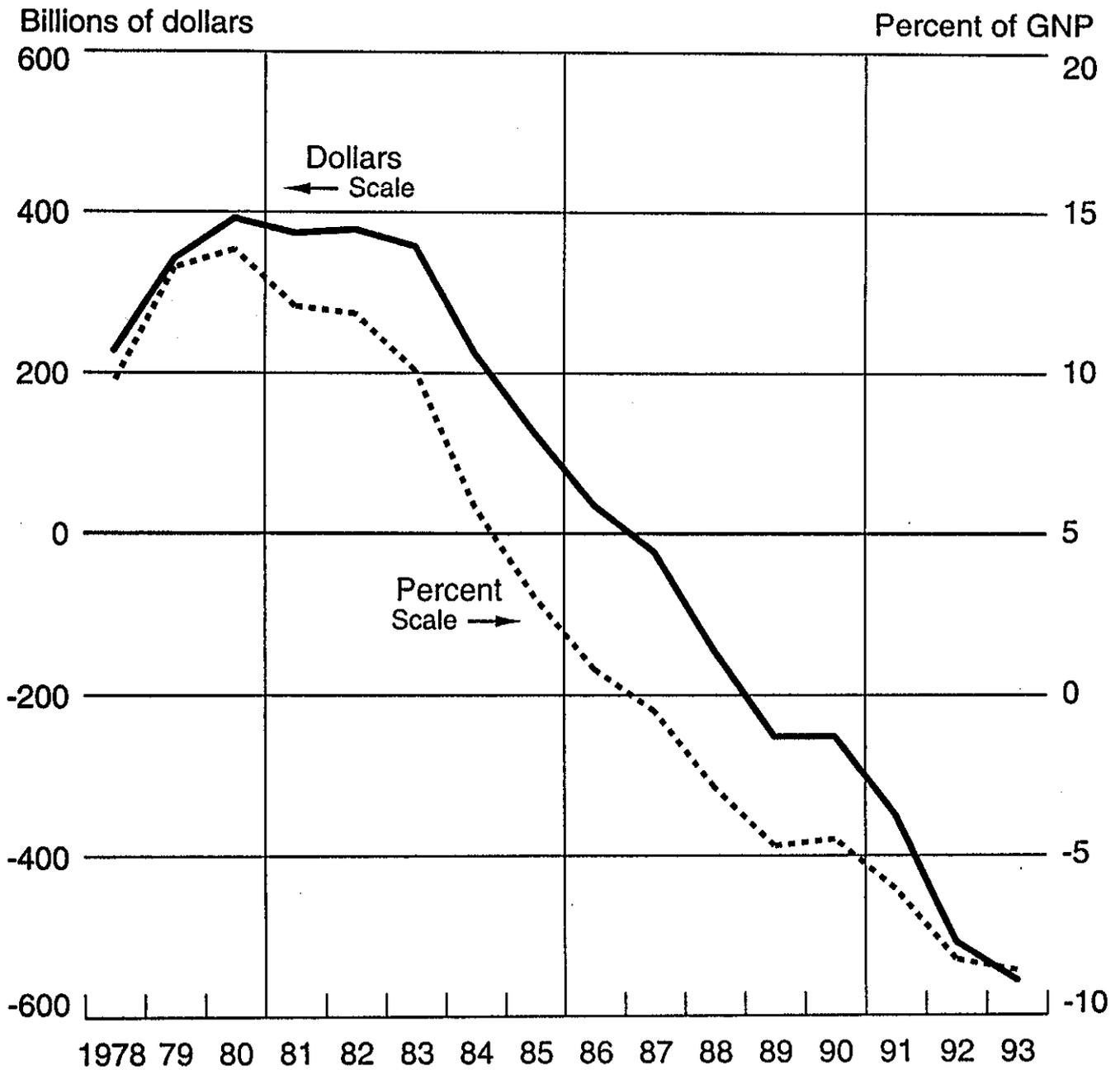
Table 12

Cumulative Foreign Direct Investment Flows
(Billions of Dollars)*

	<u>U.S. Direct Investment Abroad</u>	<u>Foreign Direct Investment in the U.S.</u>
1978-83	80.6	114.8
1983-88	144.0	190.0
1988-93	200.5	142.4

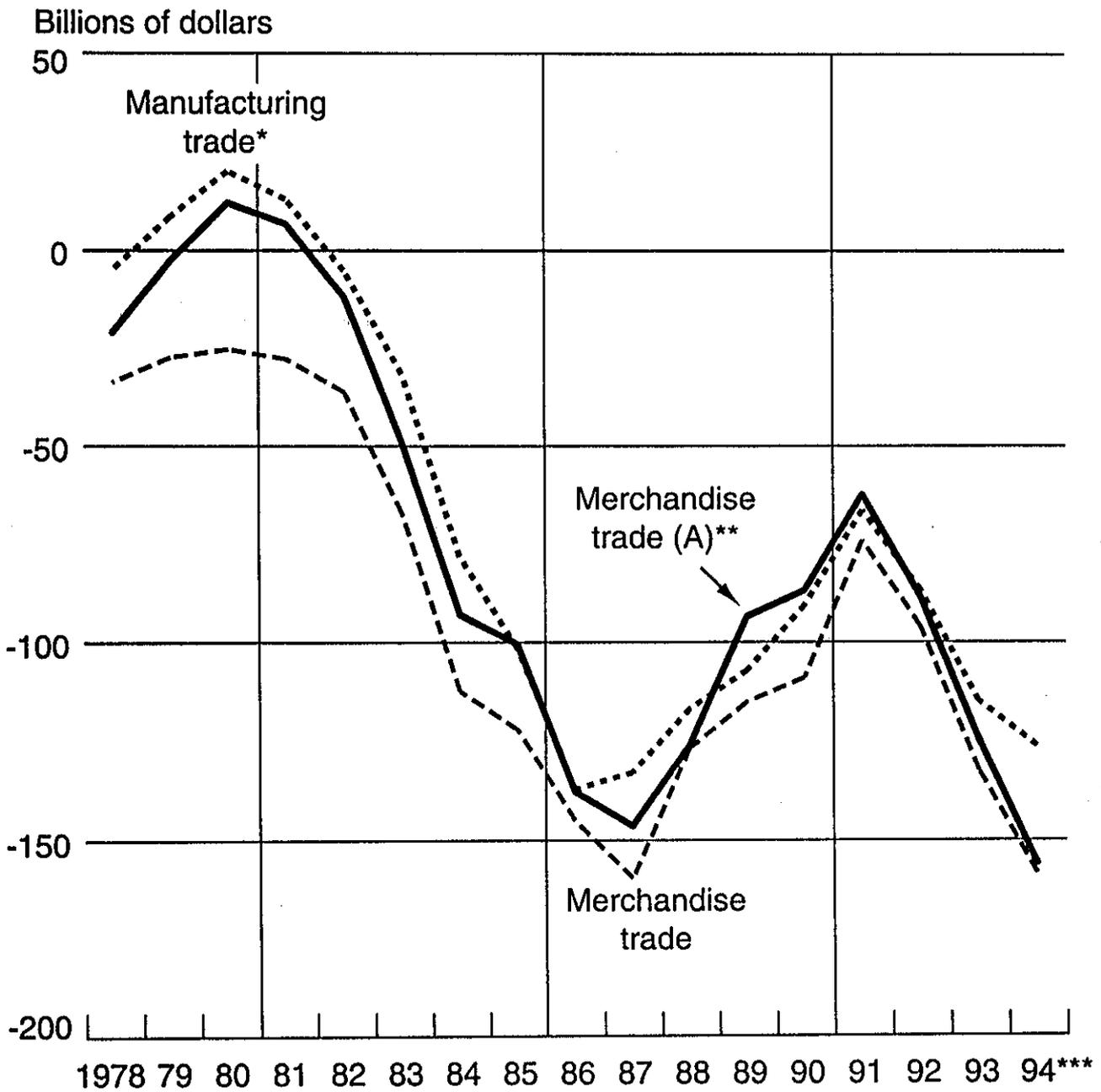
* Changes in the stocks of direct investment valued at the current cost of replacing plant, equipment and other tangible assets.

Chart 1
U.S. Net External Indebtedness*



*U.S. net international investment position with direct investment at current cost; year-end data.

Chart 2
Merchandise and Manufacturing Trade Deficits



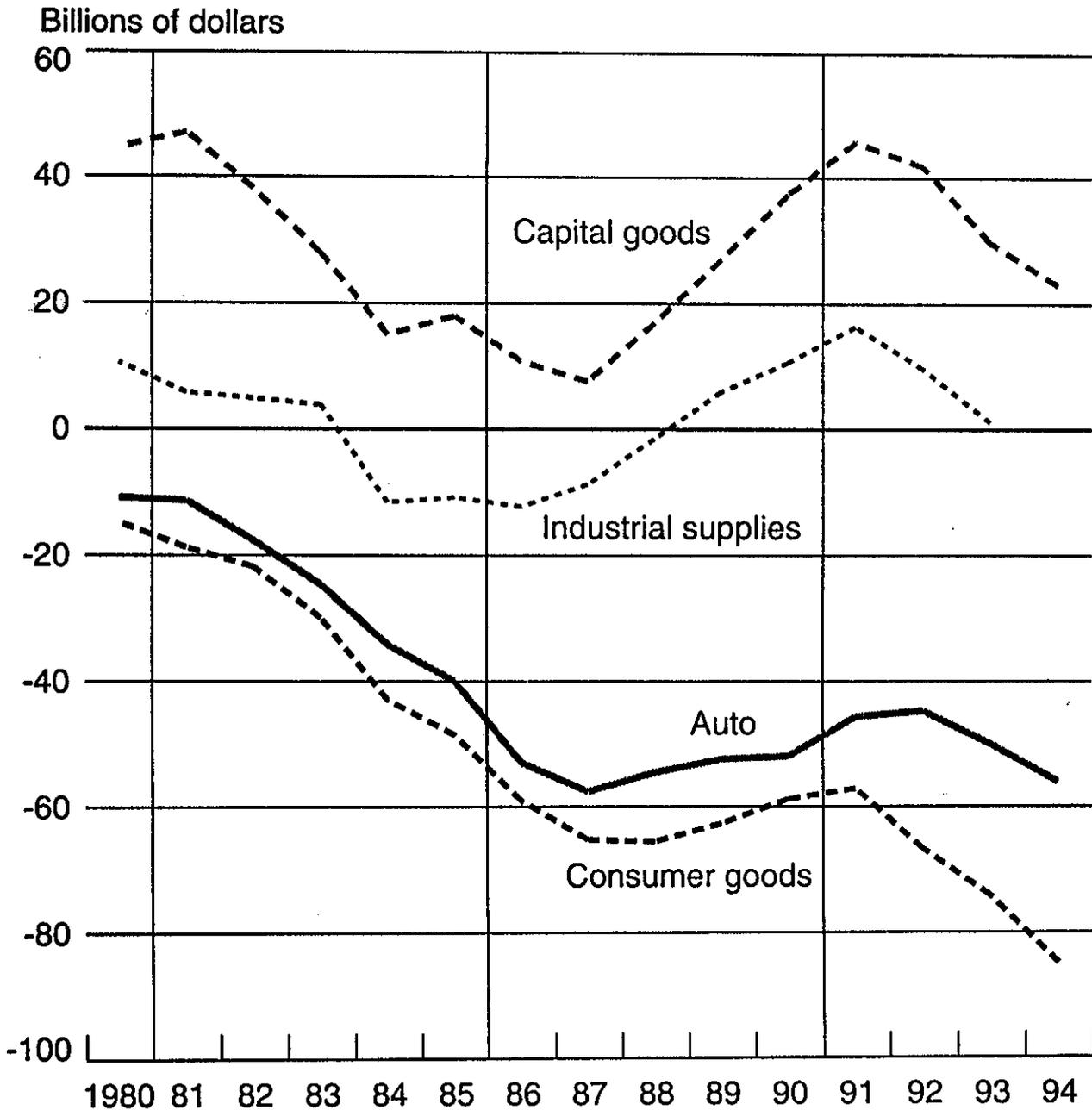
* Estimated data before 1988.

** Deficits on nonagricultural exports and nonpetroleum imports.

*** Annualized data for first half of 1994.

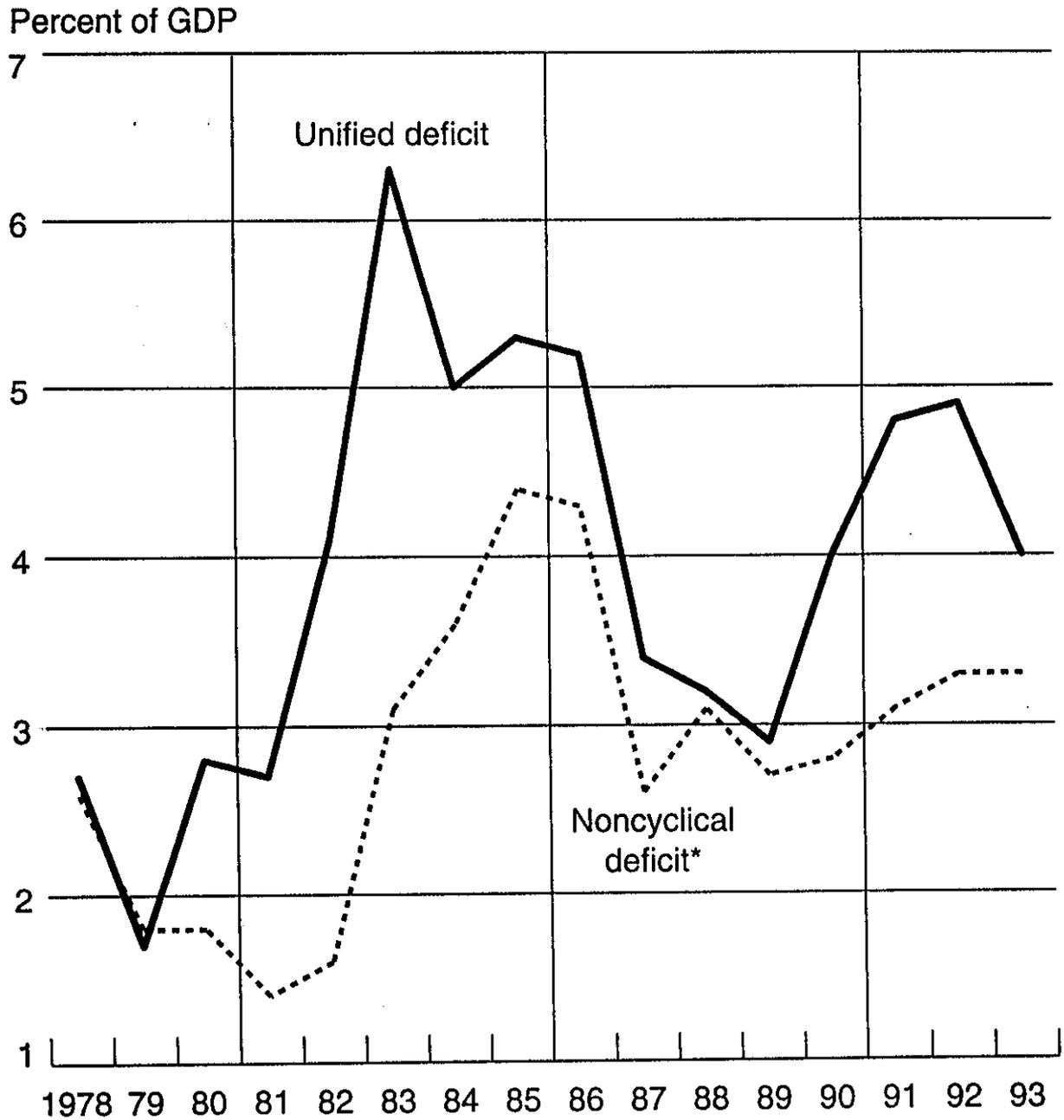
Chart 3

Commodity Composition of Manufacturing Deficits



Notes: Capital and consumer goods exclude autos; industrial supplies exclude petroleum and related products, and agricultural products. Data for the first half of 1994 is annualized.

Chart 4
U.S. Federal Budget Deficits, Fiscal Years 1978-93

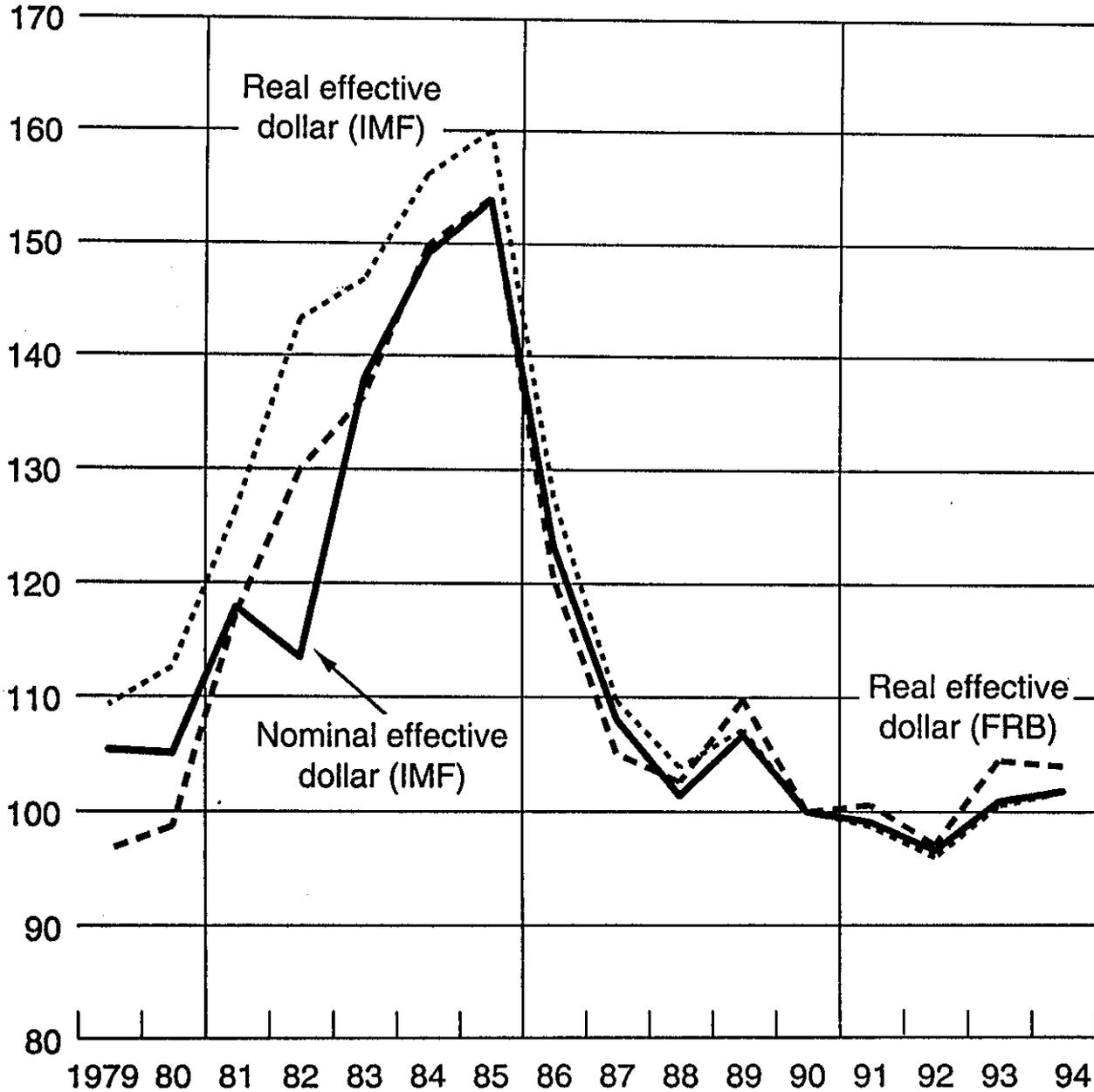


Source: Congressional Budget Office, *The Economic and Budget Outlook*, January 1994.

* Standardized employment deficit, as percent of potential GDP.

Chart 5
The Dollar Exchange Rate

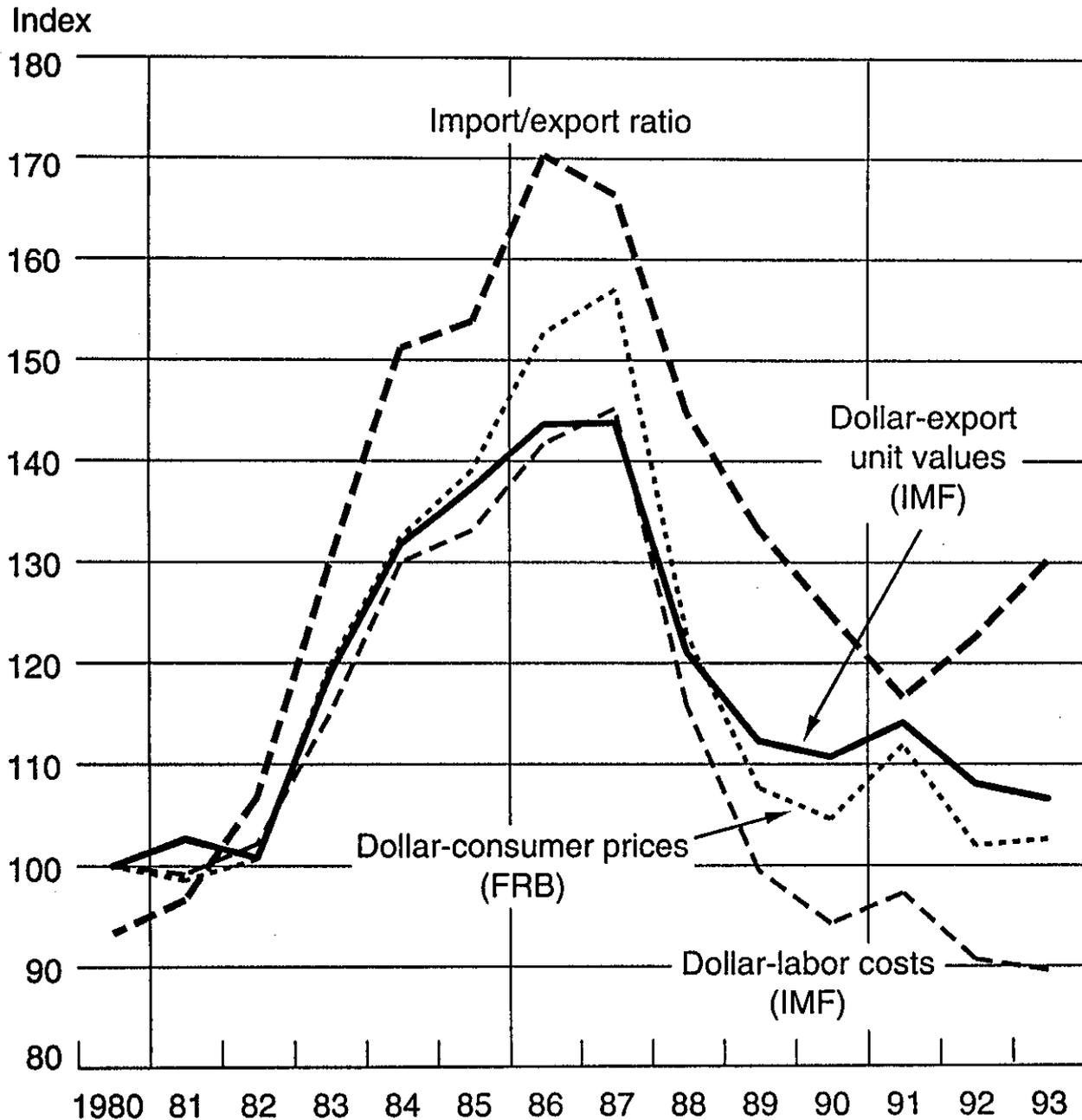
Index: 1990 = 100



* Average of the first two quarters for the two IMF indexes and average of the first three quarters for the FRB index.

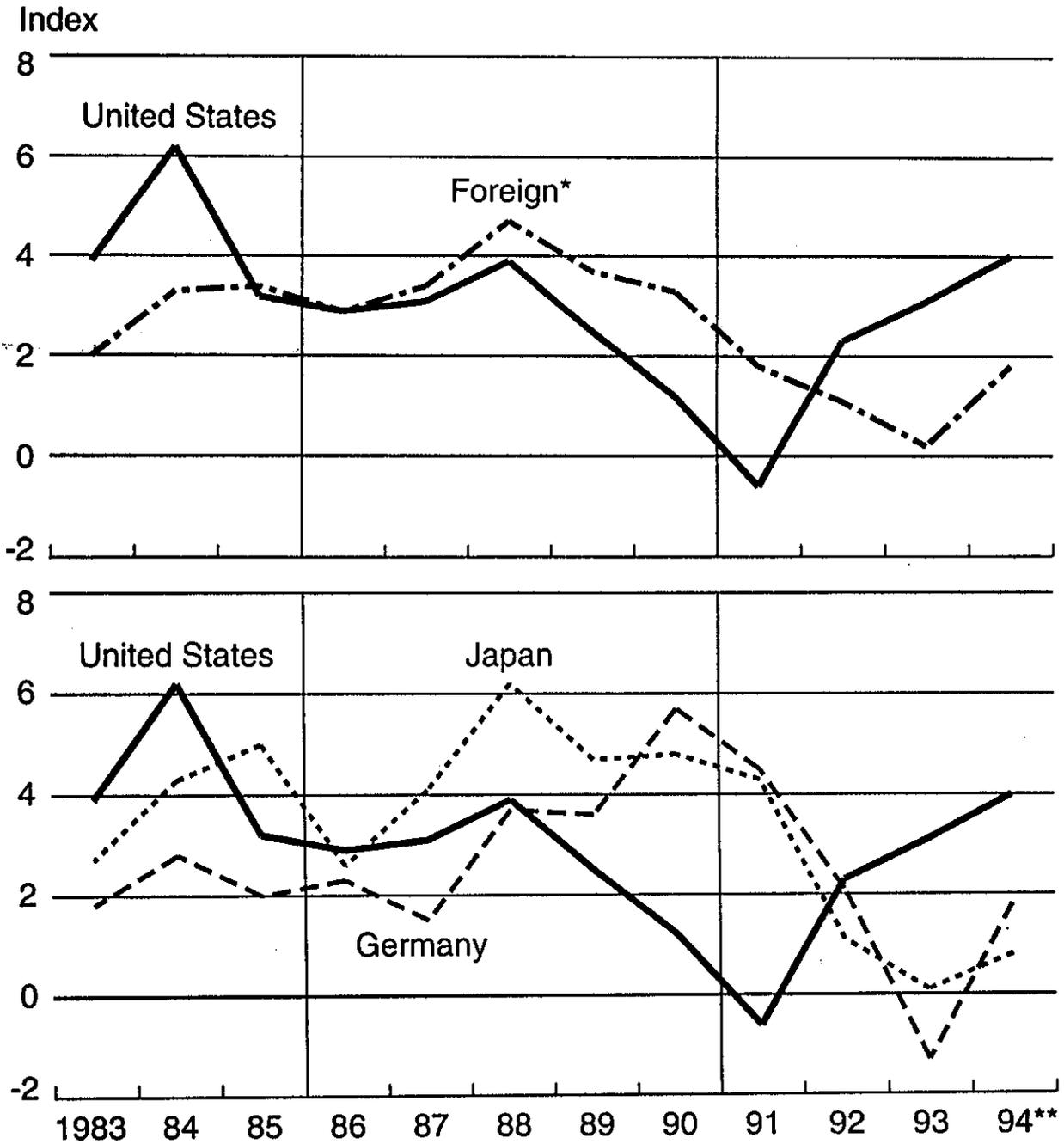
Chart 6

Real Dollar Exchange Rates and Ratio of Nonoil Imports to Nonagricultural Exports*



* The dollar exchange rates are plotted with a two-year lead (1978=100), and the import/export ratio is expressed as percentages.

Chart 7
U.S. and Foreign GDP Growth

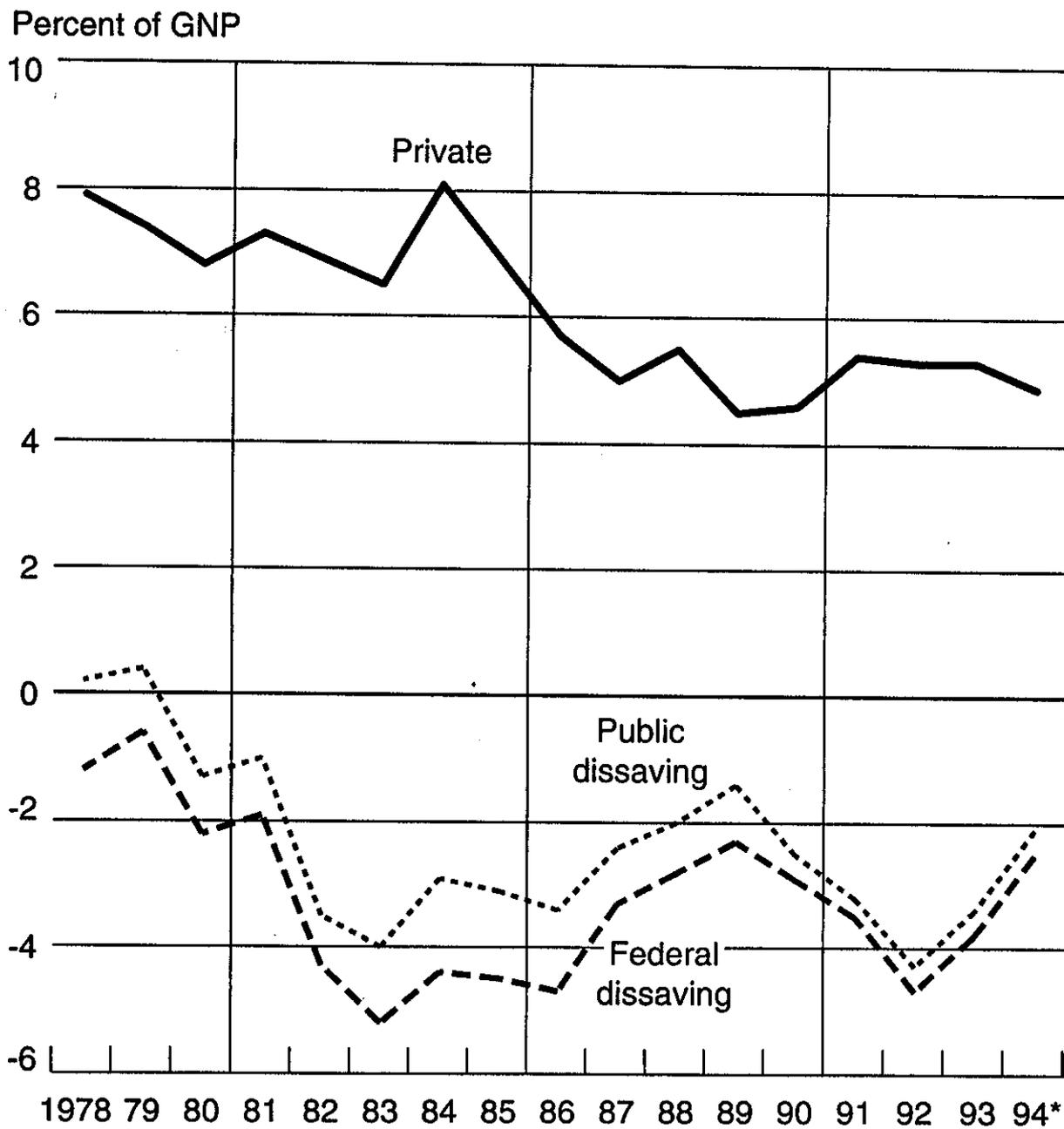


Source: OECD Economic Outlook, June 1994.

* OECD excluding the U.S.

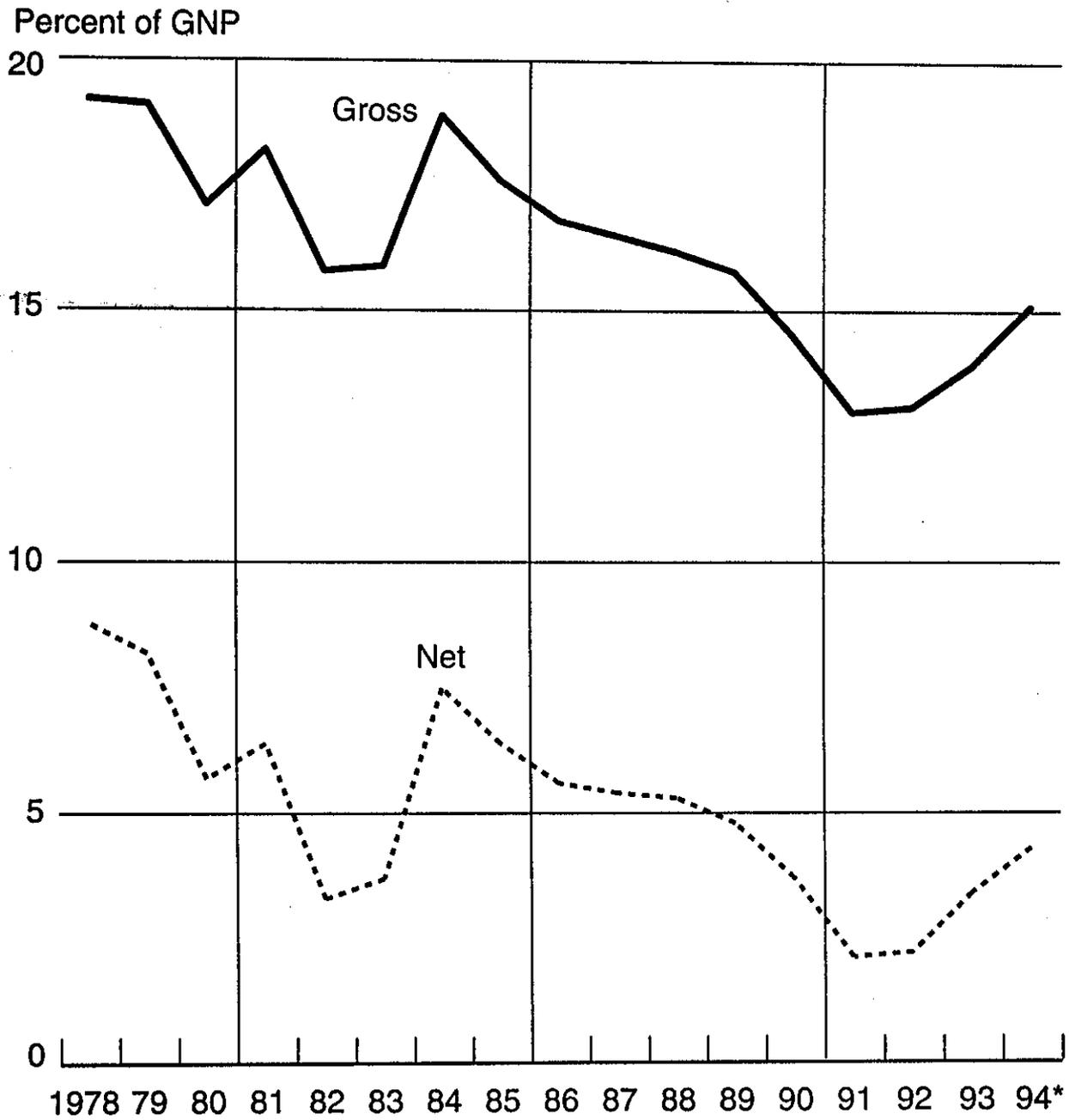
** OECD forecasts.

Chart 8
Private and Public Net Saving



* Average of the first two quarters of 1994.

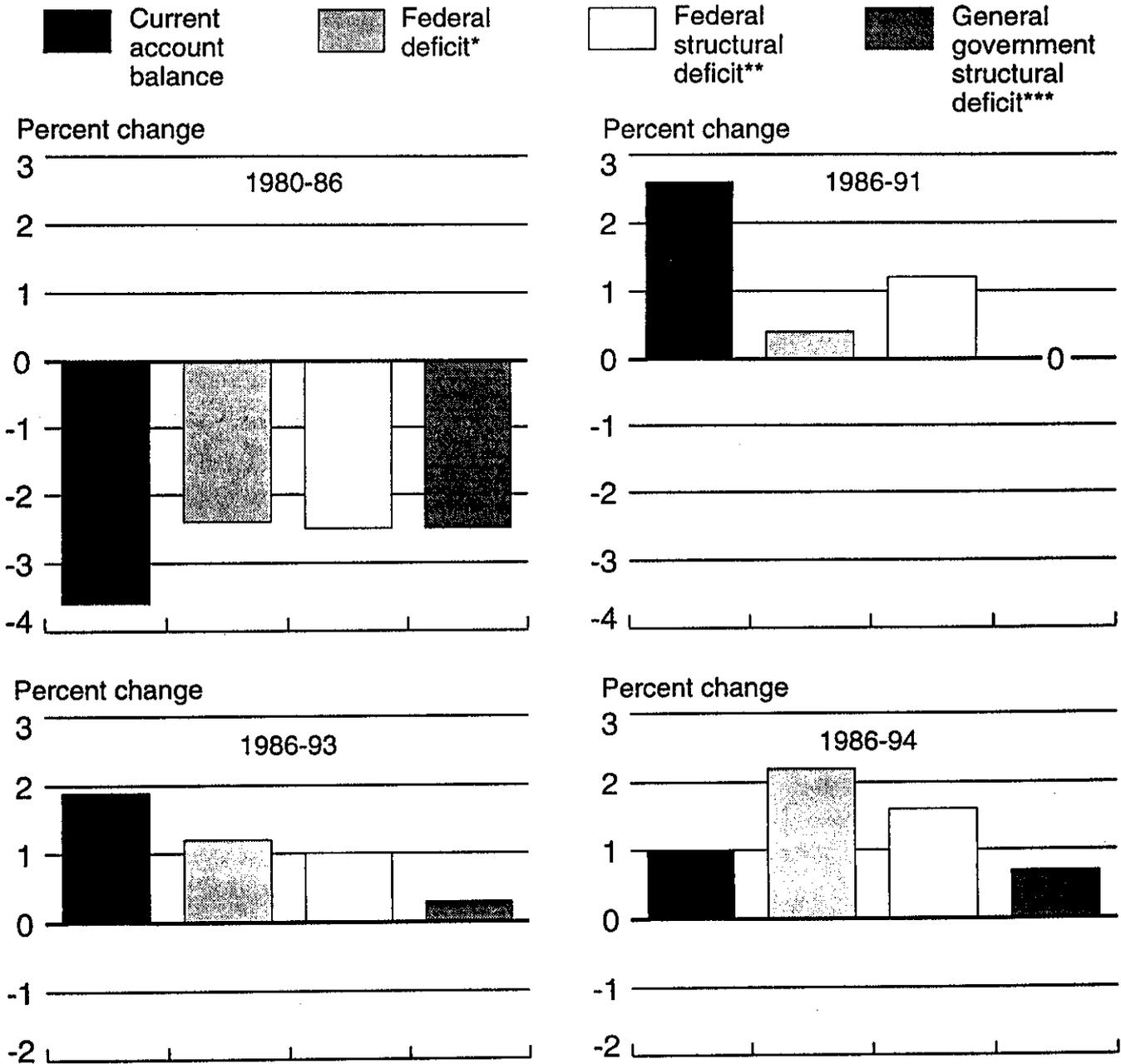
Chart 9
Gross and Net Private Investment



* Average of the first two quarters of 1994.

Chart 10

U.S. Fiscal Policy and the Current Account Balance



* Cumulative change, over specific period, in the unified Federal deficit as a percent of GDP; fiscal year data (CBO, January and August 1994).

** Cumulative change, over specific period, in the standardized employment deficit as percent of potential GDP; fiscal year data (CBO, January and August 1994).

*** Cumulative change, over specific period, in the general government structural deficit as percent of trend GDP; calendar year data (OECD, June 1994).