## The Causes of the U.S. Trade Deficit

Statement of

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#### **Executive Summary**

- There is *a long-term worsening trend* in the U.S. trade balance since the 1960s, which is due to *persistent trade barriers* abroad and *declining competitiveness* of U.S. producers. This long-term deterioration in U.S. trade performance requires either a continuous depreciation of the dollar, or else slower growth in the U.S. compared with our trading partners, in order to avoid rising trade deficits.
- There has also been *a short-term surge in the U.S. trade deficit* in the last few years, which is due to two main factors: *a rise in the value of the dollar* and *slow growth in our trading partners*. This situation has been exacerbated by macroeconomic and financial policies of the U.S. government, the International Monetary Fund, and the governments of our major trading partners, including (but not limited to) the policy responses to the recent financial crisis in the emerging market countries.
- With the hindsight of the 1990s, we can see that *the trade deficit is not a "twin" of the budget deficit*, as it appeared to be briefly in the early 1980s. More broadly, we should be suspicious of arguments that always blame trade deficits on low national savings, based on the "identity" between the trade balance and the saving-investment gap. This identity does *not* prove *causality*, and is consistent with other causal stories about the trade deficit including those advocated here.
- The U.S. current account deficit is in danger of falling into a "vicious circle," as the borrowing required to finance this deficit makes our international debt grow, and *the interest payments required to service our growing foreign debt are becoming a significant negative factor in the current account balance*. Net interest outflows are projected to be as large by 2005 as the trade deficit for goods and services was in 1998, if present trends continue.
- On the whole, the combination of liberalized financial markets, high real interest rates in the U.S., and financial volatility abroad has attracted *massive inflows of financial capital* into the U.S., which in turn have pushed up the value of the dollar and made U.S. products less price-competitive than they would be otherwise. This *tilt in economic policies toward the interests of the financial sector* has thus disadvantaged producers of tradeable manufactures, services, and agricultural products in the United States.
- If the dollar begins to fall in the near future, we should not resist but rather welcome this trend as a necessary correction to the overvaluation of the dollar that has made the trade deficit soar. Nevertheless, *we need to take steps to ensure that the dollar's decline is gradual and orderly*, and we need to press for economic expansion and market opening in our major trading partners as well as enhance our domestic competitiveness in order to lessen the need for dollar depreciation (or sacrifices of domestic living standards) in the long run.

#### Introduction

In the past few years, the U.S. trade deficit has soared to unprecedented heights, surpassing the levels reached in the late 1980s. In 1998, the merchandise deficit reached \$246.9 billion, the goods and services deficit was \$164.3 billion, and the current account deficit hit \$220.6 billion, all of which were all-time records. Moreover, these deficits have been running at even higher rates in preliminary data for the first several months of 1999. With the trade deficit rising to these historically high levels, there has been growing public concern over its causes and consequences, as well as about the scope for policies that could potentially reduce it. In keeping with the theme of this first panel of the Trade Deficit Review Commission's hearings, I will restrict my remarks in this statement primarily to the causes of the growing trade deficit. Needless to say, however, one's analysis of the causes inevitably colors one's view of appropriate policy responses, and therefore I will briefly outline the policy implications of my causal analysis at the end.

In analyzing the causes of the rising U.S. trade deficit, it is important to distinguish longterm and short-term factors. The United States has had a long-term tendency toward greater trade deficits since the 1960s, as illustrated in **Figure 1**.<sup>1</sup> The trade balance for the first half of 1999 reached an all-time low of -3.5% of GDP, surpassing the previous peak deficit of -3.4% in 1987. Figure 1 also shows that the trade balance has fluctuated widely around its generally downward trend. These fluctuations reflect a variety of short-term factors, including oil price shocks in the 1970s (which raised the price of imported petroleum) as well as changes in the exchange value of the dollar and business cycles at home and abroad. And, underlying the exchange rates and business cycles are the macroeconomic and monetary policies of the United States and its trading partners.

In what follows, I will address the causes of the long-term trend deterioration in the U.S. trade balance first and then discuss the causes of the short-term fluctuations, including the recent surge in the late 1990s. In between these two parts, I will comment on the famous macroeconomic identity that links the trade balance to the gap between a nation's saving and investment. I will also briefly comment on the sustainability of the U.S. trade deficit in regard to the worsening U.S. net international debt and the policy perspective implied by my analysis.

#### **Long-Term Causes**

The falling long-term trend in the U.S. trade balance over the four decades shown in Figure 1 is not a mere coincidence. It reflects deep, underlying asymmetries in U.S. trade relations with our major trading partners, which have caused our purchases of imports to grow faster than other countries' purchases of our exports on average for 40 years, in spite of all the ups and downs of exchange rates, oil prices, and macroeconomic policies that have caused temporary fluctuations of the trade balance around this trend. The bottom line is that the U.S.

<sup>&</sup>lt;sup>1</sup> This figure shows the trend in the merchandise trade deficit (i.e., for goods only). The trends for goods and services and for the current account are also generally downward, although the exact levels differ. See Figure 3 for the current account deficit since 1970.

market has consistently and effectively been much more open to imports than foreign markets, in spite of many rounds of trade negotiations and mutual reductions in legal trade barriers—and in spite of the fact that, on paper, the reductions in foreign trade barriers often appear to be greater than the reductions in U.S. trade barriers.

Economic research has long recognized the existence of this unfavorable difference between the responsiveness of U.S. demand for imports and foreign demand for U.S. exports. In technical terms, economists have found that the "income elasticity of U.S. import demand" is significantly higher than the "income elasticity of U.S. export demand," which means that for an equal (say, 1%) rise in national income, the U.S. increases its purchases of imports proportionately more than other countries increase their purchases of U.S. exports (holding relative prices of U.S. and foreign goods constant). This result was first obtained by Hendrik Houthakker and Stephen Magee in a famous 1969 article and has been corroborated by numerous researchers many times since.<sup>2</sup>

This discrepancy between our demand for imports and foreign demand for our exports implies that we will face a continuously declining trend in our trade balance, *unless* one of two types of adjustment takes place.<sup>3</sup> First, there could be a *price adjustment*, if we make our goods relatively cheaper compared with foreign products. This would require that we continuously depreciate the dollar in real (inflation-adjusted) terms, thus reducing our purchasing power over foreign goods and services, but making our goods more price-competitive in order to offset the otherwise faster growth of our imports compared with our exports. Second, there could be an *income adjustment*, if we constrain our economy to grow more slowly than our trading partners' economies. Slower growth at home would reduce the rate at which our imports increase, and thus keep them from rising faster than our exports, even if relative prices stay constant. The fact that the United States faces this unfavorable trade-off between depreciating its currency, slowing its growth, and accepting rising trade deficits is *a sign of declining competitiveness of the U.S. economy* vis-à-vis its major trading partners.

In years when these adjustments have occurred—such as the late 1980s for dollar depreciation and the early 1990s when we were in a recession—the trade deficit has indeed fallen. However, neither of these types of adjustment is desirable, which is why it essential to find long-term policy solutions that can enable us to escape the dilemma of having to either depreciate our

<sup>&</sup>lt;sup>2</sup> "Income and Price Elasticities in World Trade," *Review of Economics and Statistics*, vol. 51 (May 1969), pp. 111-25. See also William R. Cline, *United States External Adjustment and the World Economy* (Washington: Institute for International Economics, 1989); Robert Z. Lawrence, "U.S. Current Account Adjustment: An Appraisal," *Brookings Papers on Economic Activity, 2:1990*, pp. 343-89; and Robert A. Blecker, *Beyond the Twin Deficits: A Trade Strategy for the 1990s* (Armonk, NY: M.E. Sharpe, 1992) and "The Trade Deficit and U.S. Competitiveness," in *U.S. Trade Policy and Global Growth: New Directions in the International Economy*, ed. Robert A. Blecker (Armonk, NY: M.E. Sharpe, 1996).

<sup>&</sup>lt;sup>3</sup> The following discussion is based on the analysis in Robert A. Blecker, "International Competitiveness, Relative Wages, and the Balance-of-Payments Constraint," *Journal of Post Keynesian Economics*, vol. 20, no. 4 (Summer 1998), pp. 495-526.

currency or slow our income growth.<sup>4</sup> Indeed, over the long term, we have not made these types of adjustments, and we have not had to because the rest of the world has (up to the present) been willing to lend us the funds required to cover the increasing gap between our import spending and our export earnings. I will comment below on the sustainability of this international borrowing and its feedback effects on the interest payments component of the current account balance. But it is clear that the dollar has not fallen enough to prevent the trade balance from tending to worsen over the past few decades, and as a result we have been able to keep up our growth rate only by increasing our net international debt.

To illustrate this point, **Figure 2** shows the long-term trends in the real (inflationadjusted) value of the U.S. dollar since 1973 (consistent indexes of the dollar's value are not available for earlier years, but the dollar fell in the early 1970s as a result of President Nixon's 1971 devaluation). As may readily be seen, the dollar had a falling trend in the 1973-80 period, during which the broadest measure of the trade balance (the current account, shown in **Figure 3**) remained balanced. In fact, the current account was in surplus during most years in the 1970s. *The fact that a falling dollar was correlated with a steady, balanced current account in the* 1970s supports the notion that structural trade problems force the U.S. to depreciate the dollar in order to maintain balanced trade without sacrificing domestic growth.

Now, suppose we extrapolate out the dollar's falling trend from the 1973-80 period up to the present (see Figure 2).<sup>5</sup> This extrapolated trend shows approximately how the dollar would have had to *continue* to fall in order to prevent a growing current account deficit since 1980. This 1973-80 trend declines at a rate of about 1.3% per year, which would require the dollar to be about 30% below its 1973 real value by this year (1999). In reality, the dollar has often drifted far away from this trend, and twice in recent history—in the early 1980s and again in the late 1990s—has shown a pronounced rising tendency. Today, the dollar remains significantly above the extrapolated trend.

The dollar appreciation of the early 1980s contributed significantly to the then-record U.S. trade deficits at the time. That appreciation not only resulted in a flood of artificially cheap imports that injured domestic industries in the U.S., but also made it difficult for efficient U.S. export firms and productive U.S. farmers to market their goods abroad. Under Treasury Secretary James Baker in 1985, the U.S. began a concerted push to lower the dollar in collaboration with our G-5 (and later G-7) trading partners, an effort which succeeded in bringing down the trade deficit significantly with about a two-year lag (compare Figures 1 and 3 with Figure 2, which together show that the trade balance improved during 1987-91 following the fall in the dollar from 1985-89).

<sup>&</sup>lt;sup>4</sup> Of course, one policy that can relieve these constraints is faster growth abroad—something that every successive U.S. administration since the 1970s has pushed on our major trading partners, often to no avail.

<sup>&</sup>lt;sup>5</sup> Note that this is calculated as an exponential trend, which shows a constant proportional rate of decline in the dollar's value (and hence smaller absolute declines, as the dollar's value falls). This is more appropriate than a linear trend, which would show constant absolute declines and which would have the implausible implication of the dollar index eventually reaching zero.

But the fall in the dollar in the late 1980s never reached the previous trend from the 1973-80 period, and by 1995 the dollar was once again going in the wrong direction from the stand-point of preventing a growing trade imbalance. After rising in the 1995-99 period, the dollar now stands roughly 30% higher than it would need to be to return to the 1973-80 trendline—a gap which suggests that a significant downward "correction" in the dollar is due sometime in the near future, if we are forced to get our trade deficit under control. The recent fall in the dollar in early August 1999 could be a harbinger of such a correction occurring, although it is too soon to tell whether this is the beginning of a major correction or merely a temporary fluctuation.

It must be emphasized that the need for the dollar to depreciate in this manner is a function of the asymmetries in U.S. trading relationships, not an inevitable fact of nature. *If foreign markets become more open to U.S. products, if U.S.-based producers become more competitive, or if other countries expand their economies, the amount by which the dollar would have to fall* (or our growth would have to be constrained) in order to restore balanced trade would be reduced.<sup>6</sup>

What factors underlie the structural asymmetries in U.S. trade relations, which create this dilemma of having to either cut our growth or depreciate our currency in order to prevent rising trade deficits? One fundamental factor that explains this asymmetry is a difference in *market openness*. If foreign countries have greater effective trade barriers (and these need only be *de facto*, and not *de jure* barriers) than the U.S., then as those countries grow their purchases of U.S. exports will grow relatively slowly, compared with how we increase our purchases of their exports as our economy grows. In prior decades, the greater trade barriers abroad often included explicit trade policies such as tariffs, quotas, and other formal trade restrictions. But as these official trade barriers have been reduced in trade agreements, other types of barriers remain and have grown in relative importance.

In this regard, it is important to note that about half of the U.S. trade deficit today is with only two countries, Japan and China, and three-quarters is with the Asian countries as a group (see **Table 1**). These are countries that are notorious for their overt and covert trade barriers, such as corporate practices that favor domestic suppliers, government direction of industrial development, offsets and performance requirements on foreign investment, procurement policies biased toward domestic firms, and so on.<sup>7</sup>

It is often argued that foreign trade barriers cannot explain the worsening trend in the U.S. trade deficit, because those barriers have not increased over time. But this argument misses

<sup>&</sup>lt;sup>6</sup> This point has long been recognized by many scholars of trade, although some have chosen not to emphasize the point recently. See, for example, George N. Hatsopoulos, Paul R. Krugman, and Lawrence H. Summers, "U.S. Competitiveness: Beyond the Trade Deficit," *Science*, vol. 241 (July 15, 1988), pp. 299-307; Rudiger Dornbusch, Paul Krugman, and Yung Chul Park, *Meeting World Challenges: U.S. Manufacturing in the 1990s* (Rochester: Eastman Kodak Co., 1989); C. Fred Bergsten and Marcus Noland, *Reconcilable Differences: United States-Japan Economic Conflict* (Washington: Institute for International Economics, 1993).

<sup>&</sup>lt;sup>7</sup> For a discussion of foreign trade barriers that continue to inhibit U.S. exports see Peter Morici (with Andrew Harig), *Setting U.S. Goals for WTO Negotiations* (Washington: Economic Strategy Institute, June 1999).

the point. Foreign trade barriers do *not* have to increase in order to account for (at least some of) the deterioration in the U.S. trade balance. *All that is necessary is that other countries have policies in place that restrain the growth rate of their imports, and keep it below the growth rate of their exports. As long as their imports grow more slowly than their exports, their trade surpluses with us will tend to rise—*even if they do not actually increase their trade barriers and potentially even if they reduce those barriers to some extent (e.g., by lowering tariffs, while keeping non-tariff barriers and structural impediments in place).

A second factor that accounts for the asymmetrical nature of U.S. trade is a *loss of competitive advantages* by U.S. producers relative to our trading partners. From the 1960s through the 1980s, this loss of competitive advantages was spearheaded by the technological catch-up of western Europe and Japan, which generally converged toward U.S. levels of productivity. While this type of technological catch-up by other industrialized countries has slowed down in recent years (as a result of sluggish growth in Europe and Japan, a revival of productivity growth in the U.S., and a renewed U.S. lead in high technology products), the loss of U.S. competitiveness continues on another front: the rise of the newly industrializing countries (NICs) such as Korea, China, and Mexico. These countries, while not at the frontiers of advanced technology, have become increasingly capable of producing a wide range of sophisticated manufactured products with considerably lower unit labor costs (i.e., wages adjusted for productivity) than the United States. Essentially, their productivity in sectors such as textiles and apparel, automobiles and parts, and computers and electronic products is rising to industrialized-country levels, while their wages remain far below industrialized-country rates.<sup>8</sup>

Some economists have spent much effort arguing that "low-wage competition" is a myth, because low wages alone do not make a country's products very competitive if the low wages merely reflect low productivity of the country's labor or poor quality of their products. This is a valid point, and it explains why many of the world's poorest, least developed countries (which have the lowest wages in the world) are not competitive exporters. Nevertheless, *the combination of relatively low wages with relatively high productivity gives the NICs a growing competitive advantage in many manufacturing activities*. Low-wage competition *per se* may be a myth, but low-unit-labor-cost competition—i.e., low wages *combined* with high productivity—is not.

What accounts for the ability of countries like Mexico, China, and the East Asian NICs to achieve and maintain this competitive edge? First, they import technology (often embodied in capital equipment) from advanced countries like the United States, Japan, or the European nations. Often this technology is brought in by multinational corporations (MNCs) seeking

<sup>&</sup>lt;sup>8</sup> According to the U.S. Bureau of Labor Statistics, "International Comparisons of Hourly Compensation Costs for Production Workers in Manufacturing, 1997" (News Release of September 16, 1998), hourly wages and benefits were 10% of the U.S. level in Mexico and 36% of the U.S. level in the East Asian NICs for which data were available (Hong Kong, Korea, Singapore, and Taiwan) in 1997. This is far below the wages and benefits in the industrialized countries, which ranged from 60% of the U.S. level in New Zealand to 155% in Germany (the EU average is 111% of the U.S.). Wages and benefits are undoubtedly even lower in poorer countries for which comparable data is not available, such as China, Malaysia, and the Dominican Republic. The fact that wages and benefits were only 3% of the U.S. level in Sri Lanka in 1996 (same source) is probably indicative of the compensation levels in other South Asian economies, such as India and Bangladesh.

cheaper locations for production of labor-intensive parts and components or for labor-intensive assembly operations—which may be carried out either in MNC affiliates or via outsourcing. For the technology to be "absorbed" in the local economy, there has to be an adequate base of educated workers, transportation infrastructure, and communications facilities. Second, domestic wages in these countries are held down by a variety of factors, including the backwardness of the rest of the local economy (especially domestic agriculture and services, which can be sources of "surplus labor" that holds wages down),<sup>9</sup> a lack of effective labor rights and standards (and, in some cases, outright repression of labor organizing efforts), the use of young women workers who have less bargaining power than male heads of households, and exchange-rate manipulation that undervalues the local currency (and hence makes unit labor costs artificially low in dollar terms).

Of course, the extent of these competitive advantages in labor costs varies from country to country and over time. For example, before the recent financial crisis, Korean wages had risen so much that Korea was losing export competitiveness to poorer southeast Asian countries with lower wages. Mexico was much more competitive after it joined NAFTA and devalued the peso devaluation in 1994-95 than it was before. Many of the Asian countries whose currencies have depreciated (and whose wages have fallen) since 1997 have regained some export competitiveness, to the point where possible competitive devaluations by other countries (especially China) now loom on the horizon. But while the location of the greatest competitive advantages may shift over time, on the whole enough of these countries have been able to maintain them that the NICs account for a very large share of the U.S. trade deficit. As can be seen from the data in Table 2, the Asian NICs (i.e., Asia excluding Japan) and Mexico combined accounted for fully 56% of the U.S. trade deficit in 1998—and the most *lopsided* bilateral imbalance of all is the one with China, which exports *five times* as much to the U.S. as it imports from us.

#### The Macroeconomic Identity and the Disappearing "Twin Deficits"

Some economists have argued that trade barriers and competitiveness problems cannot possibly account for trade deficits, because the trade balance has to be equal to the gap between a nation's saving and investment:

(1)	Exports - Imports	=	National Saving – Domestic Investment
· · ·			

which is implied by the logic of the national income accounts. In this view, trade deficits are always blamed on a shortfall of national saving relative to domestic investment. National saving in turn consists of three parts:

<sup>&</sup>lt;sup>9</sup> Indeed, it is likely that the low wages in these countries reflect low *average* productivity of labor in their domestic economies; the point, however, is that the productivity *in their export sectors* can be an order of magnitude higher in a world with "footloose capital" and mobile technology.

(2)	National Saving	=	Government Saving (budget surplus [+] or deficit [-])
	-		+ Corporate Saving (retained corporate earnings)
			+ Personal Saving (household and unincorporated business
			savings)

This has led to certain claims about the causes of the trade deficit, such as the myth of the "twin deficits" (budget and trade) that was promulgated in the 1980s, and the current fixation of some commentators on the low personal saving rate (both of which arguments tend to forget that corporate savings account for the lion's share of national saving, and have been quite robust).

Starting with the twin deficit view, Figure 3 shows very clearly that *the two deficits never were "twins."* They did move in the same direction in the early 1980s, with the budget deficit worsening just a few years before the trade (current account) deficit, which gave rise to the notion of the former causing the latter to increase. There were some special circumstances at the time under which the rising budget deficit helped to worsen the trade deficit, although it was not the only cause of the latter. With the Federal Reserve maintaining a tight monetary policy in the early 1980s, increasing government borrowing to cover the rising federal budget deficit contributed to higher interest rates, which attracted foreign capital into the U.S. This inflow of foreign capital in turn contributed to the rise in the value of the dollar, shown in Figure 2, which made American products uncompetitive and thus helped to cause the rise in the trade deficit (although only part of the dollar's rise in 1980-85 can be explained by these factors<sup>10</sup>).

But this chain of causality cannot explain more than half of the rise in the trade deficit at the time (the 1980-85 period), according to the most reliable research on the subject.<sup>11</sup> Moreover, this appears to have been a unique confluence of events, since the two deficits do not show a positive correlation at most other times during the period shown in Figure 3, and in recent years have tended to move sharply in opposite directions. The budget deficit reached its nadir in 1992, just one year after the current account balance reached its highest level in a decade—and since then, the current account deficit has generally worsened while the budget balance has turned strongly positive. Today, those who peddled the twin-deficit story in the 1980s—and who claimed that the trade deficit would vanish, if only we balanced the budget—are strangely silent about the disappearance of the so-called "twins" relationship as the trade deficit sets new records while the budget surplus continues to grow.

Of course, if one wants to apply the identity (1), one should really look at total national saving (as defined in (2)) rather than just the budget balance or any other individual component.

<sup>&</sup>lt;sup>10</sup> See, for example, Paul R. Krugman, *Exchange-Rate Instability* (Cambridge: MIT Press, 1989), who argues that there was a speculative bubble in the dollar exchange rate near its peak in 1985. There was also a "safe haven effect" as capital fled Latin American countries during the debt crisis.

<sup>&</sup>lt;sup>11</sup> See, for example, William L. Helkie and Peter Hooper, "An Empirical Analysis of the External Deficit," in Ralph C. Bryant et al., eds. *External Deficits and the Dollar* (Washington: Brookings Institution, 1988). Other factors that contributed to rising U.S. trade deficits in the 1980-87 period included: autonomous dollar appreciation (a speculative bubble—see previous note), the Latin American debt crisis, slow growth in Europe, and the long-term trend decline in U.S. competitiveness (discussed earlier).

Indeed, as **Table 2** shows, overall national saving has been relatively low since the late 1980s, although this is now (as of 1998) accounted for by a boom in personal consumption spending and a low private saving rate<sup>12</sup> rather than by a government budget deficit. But equation (1) is merely an accounting identity—a tautology that has to hold true—and *an identity does not prove any-thing about the direction of causality*. All of the "saving shortfall" arguments (including the twin deficits view of the 1980s) falsely presume that causality has to flow from the saving variable on the right-hand side of the identity to the trade balance on the left. But evidently, there are numerous other possibilities.

For example, domestic investment could be the driving force, rather than saving. An investment boom could lead to a deterioration in the trade balance, if it leads to greater demand for imports (e.g., of machinery and equipment or intermediate goods), and if national saving does not increase. However, contrary to some current arguments, it is not true that the U.S. investment rate has been unusually high in recent years, taking the state of the business cycle into account. As Table 2 shows, investment as a share of GDP was only slightly higher in 1998 than in the last business cycle peak of 1989, and is still lower than it was in 1973, 1979, or 1981 (previous cyclical peaks).<sup>13</sup> High domestic investment is *not* the cause of the current large trade deficit.

Also, autonomous changes on the trade side (e.g., due to a change in foreign demand for U.S. products) can affect national saving. If, say, a foreign country were to open its market more to U.S. exports, this would boost the incomes of export suppliers in the U.S., thereby generating more national saving (by increasing government tax revenue, and thus increasing the budget surplus, as well as by increasing corporate and personal saving). There could also be "common factors" causing both sides of the equation to rise or fall together. If, for example, U.S. industries become more productive, they will sell more exports and compete better with imports; at the same time, they will earn more profits which will generate more corporate saving, and will also pay more taxes to the government and higher salaries to employees (part of which is likely to be saved). Thus, foreign trade barriers and domestic firms' competitiveness can affect the trade balance, precisely because they can also influence national saving.

<sup>&</sup>lt;sup>12</sup> The private saving rate in the table includes corporate saving along with personal saving, and is measured relative to GDP rather than to personal disposable income. Nevertheless, the decline in this rate since 1981 is accounted for by the fall in the personal saving rate.

<sup>&</sup>lt;sup>13</sup> Those who claim that investment has been unusually high in recent years generally cite data on "real" investment at chained 1992 prices, rather than the current price data used in Table 2 (see, e.g., *Economic Report of the President*, February 1999, pp. 69-73). The "real" data do show higher investment rates: in real terms, the share of gross private domestic investment in GDP rose to 17.6% in 1998, up from 14.2% in 1989 and 15.2% in 1973. But this appearance of an increased "real" investment rate is due entirely to the fact that prices of investment goods have been rising more slowly than prices of consumer goods (and some investment goods—especially computers and other electronic products—have fallen in price). While this increase shows that business firms spending on productive investment are getting relatively more bang for their bucks, compared with consumers, it does not gainsay the fact that such investment spending has not increased as a share of total domestic expenditures when measured at current prices. *Since saving rates are always measured at current prices, consistency requires that investment rates should also measured at current prices* in implementing the identity (1).

Finally, there is another aspect of this relationship which has often been ignored in the past, but which is essential for understanding recent trends especially in the 1990s. The trade balance is not only equal to the saving-investment gap, but also to net foreign investment or net capital outflows (i.e., the net increase in U.S. ownership of foreign assets minus the net increase in foreign ownership of U.S. assets):

(3)	Exports – Imports	=	National Saving – Domestic Investment
		=	Net Foreign Investment
			(net capital outflows [+] or inflows [-])

Looking at the relationship this way opens up another possibility, which is that net foreign investment (i.e., international capital flows) could be the dominant causal factor, forcing accommodating changes in both external trade flows and the internal saving-investment gap. In the mid-1990s, this occurred largely through official intervention by foreign central banks, which bought U.S. Treasury securities in an effort to keep the dollar up and their own currencies down in value.<sup>14</sup> In the late 1990s, this occurred primarily through a massive inflow of private capital, which then made the dollar appreciate further. The precise timing and impact of these net capital inflows will be discussed further in the section on short-term causes, below.

How do capital inflows cause both sides of the trade balance equation to worsen? In a country (like the United States) with a floating exchange rate, net capital inflows generally lead to appreciation of the currency, which depresses exports and encourages imports. In addition, net capital inflows can finance higher levels of domestic investment than can be financed by national saving alone; this worsens the right-hand side of the identity, while also boosting import demand on the left as discussed earlier. Finally, foreign capital inflows can also help to finance a consumer spending boom, and thus to depress personal saving, as appears to have occurred in the U.S. in recent years. One channel through which this has occurred is the stock market boom (which many analysts regard as a bubble), which has been fueled in part by inflows of foreign investment, and which has in turn been a contributing factor to the current consumption boom and low personal saving rate.

Once we recognize the power of international financial flows to drive the trade balance, we are forced to consider the implication that our own macroeconomic and financial policies may have contributed significantly to the recent surge in the trade deficit. In the past two decades, the United States has altered its macroeconomic, monetary, and regulatory policies to the benefit of financial interests, especially by prioritizing inflation control over other objectives of monetary policy, as well as by promoting financial market deregulation and liberalization of capital flows at home and abroad.<sup>15</sup> These policy changes have had the effect of raising real interest rates in

<sup>&</sup>lt;sup>14</sup> See Peter Morici, *The Trade Deficit: Where Does It Come From and What Does It Do?* (Washington: Economic Strategy Institute, 1997).

<sup>&</sup>lt;sup>15</sup> For a broader argument that U.S. economic policies have shifted in favor of financial interests at the expense of labor and industrial interests see Thomas I. Palley, *Plenty of Nothing: The Downsizing of the American Dream and the Case for Structural Keynesianism.* (Princeton: Princeton University Press, 1998). On the costs and benefits of capital market liberalization policies see Robert A. Blecker, *Taming Global Finance: A Better Architec-*

the U.S., while destabilizing foreign financial markets. The result is to make U.S. financial markets a magnet for attracting funds from other countries, thus keeping the dollar high and undermining the interests of domestic producers of internationally traded goods and services. In other words, at the same time as we have promoted trade agreements to throw our market open to increased international competition, we have stacked the deck against our own manufacturing and agricultural producers with a set of macroeconomic and financial policies that systematically overvalue their products and make it hard for them to compete both at home and abroad. The next section will discuss how these forces have played out in the last few years.

#### **Short-Run Factors**

Although structural trade problems account for the long-term declining tendency in the U.S. trade balance, the sharp worsening in the U.S. trade deficit over the past few years is the consequence of very specific events and policies that have adversely affected U.S. producers. Simply put, *the recent surge in the trade deficit has resulted from two principal causes: the rising value of the dollar and slow growth in most of our major trading partners*. Both of these causes were exacerbated by, but did not originate with, the Asian financial crisis of 1997-98. And both of these causes are the products of deliberate policy decisions that have been made here in the United States, in our major trading partners, and at international institutions such as the International Monetary Fund (IMF). There is no way to understand the worsening of the U.S. trade position in the late 1990s without recognizing the extent to which *the interests of American producers of tradable goods and services have been sacrificed to protect the interests of the financial sector*—and this is nowhere more apparent than in the U.S.-*cum*-IMF response to the global financial crisis.

*The real (inflation-adjusted) appreciation in the value of the dollar* explains why U.S. products have suddenly become so uncompetitive in price terms both at home and abroad. **Figure 4** shows that, after trending downward from 1990 to mid-1995, the dollar began to rise in value between mid-1995 and mid-1997 and then accelerated its ascent following the Asian crisis in mid-1997.<sup>16</sup> Although the dollar has since stabilized, it has not fallen back to the levels of the early 1990s at which U.S.-produced goods and services were more price-competitive.

More detailed indexes for two separate groups of countries (**Figure 5**) show that the timing of this dollar appreciation has varied between our major industrialized country trading partners (Euro-11, United Kingdom, Canada, Japan, and a few others) and our other important trading partners (i.e., the developing countries and NICs). The dollar began to rise against the major industrialized countries' currencies back in mid-1995, largely as a result of concerted intervention by several of their governments, and rose steadily and sharply against them through early 1998. Since that time, the dollar's value against the major currencies has fluctuated but has remained at a high, uncompetitive level (especially since the fall in the euro earlier this year, which has been only partially reversed thus far in August 1999). With regard to our other trading

ture for Growth and Equity (Washington, DC: Economic Policy Institute, 1999).

<sup>&</sup>lt;sup>16</sup> Figure 4 shows the same real dollar index as Figure 2, but with a close-up view of the 1990s.

partners, the dollar was falling gradually through mid-1997 (except for an upward blip in early 1995 following the Mexican devaluation of December 1994), but then shot upward sharply in the second half of 1997 following the Thai baht crisis and the subsequent collapses of other currencies throughout Asia and other developing regions. The dollar has also stabilized against these currencies since early 1998, but still remains significantly above its pre-crisis level as of mid-1999.

The upshot of all this is that U.S. producers of tradable goods find it very hard to compete, no matter how advanced their technology or how productive their labor, when the dollar's rise has made their products about 20% more expensive relative to other countries' products over the past four years. Therefore, *there cannot be any solution to the trade deficit that does not begin with a significant effort to bring down the value of the dollar to a more competitive level*.

The next two figures show the correlation between capital inflows (foreign investment in the United States) and the appreciation of the dollar shown in Figures 4-5. The rising *annual increases* in foreign ownership of U.S. assets (i.e., net purchases) in the 1990s are shown in **Figure 6** and the resulting cumulative increases in the *level* of foreign ownership of U.S. financial assets (i.e., U.S. liquid liabilities) are shown in **Figure 7**. Annual capital inflows (foreign purchases of U.S. assets) soared from under \$200 billion per year in 1990-92 to about \$300 per year in 1993-94 and then climbed to the \$500-800 billion range annually from 1995-98 (Figure 6). More detailed statistics, not shown in these figures, reveal that foreign official purchases of U.S. Treasury securities (i.e., foreign central bank intervention to artificially depress foreign currency values) were a major part of these foreign purchases in the 1993-96 period, while private purchases (especially of stocks and bonds) dominated in 1997-98.<sup>17</sup> These inflows of foreign capital in turn led the value of foreign financial assets in the U.S. to jump from under \$3 trillion in 1994 to over \$5 trillion in 1998 (Figure 7). *These enormous capital inflows were largely responsible for pushing up the value of the dollar and causing rising current account deficits between 1995 and 1998*.

The second factor in causing the recent rise in the U.S. trade deficit is *the slowdown in other countries' growth rates* combined with continued robust expansion in the United States. **Figure 8** shows that the U.S. grew faster than *almost all* of its major trading partners in 1998, especially those that constitute major markets for U.S. exports.<sup>18</sup> The forecasts for 1999 from the same source (the IMF's *World Economic Outlook*, April 1999) show some variation, especially insofar as the Asian NICs are projected to recover somewhat while Latin America is projected to have a recession. But overall, the situation remains that most major U.S. export markets are growing sluggishly at best or else are in actual recessions (i.e., with falling output), both among

<sup>&</sup>lt;sup>17</sup> See Douglas B. Weinberg, "U.S. International Transactions, First Quarter 1999," *Survey of Current Business* (July 1999), Table 1, pp. 84-85.

<sup>&</sup>lt;sup>18</sup> China is an exception, which grew at a 7.8% annual rate in 1998—although the accuracy of China's growth claims are the subject of some dispute. But contrary to the mythology of its "vast export market," China hardly buys any U.S. exports—a mere \$14 billion of U.S. exports in 1998, compared with \$71 billion of U.S. imports from China (see Table 1). Thus, China is an exception that proves the rule.

the developing nations and the industrialized countries. (Of course, this slow foreign growth is also related to the rise in the value of the dollar, since investors have fled depressed areas and have bought assets in the booming U.S. economy—thus pushing up the value of the dollar.)

This situation has resulted from a combination of our own macroeconomic and financial policies as well as those of our trading partners and the international institutions we support, such as the IMF. By keeping interest rates higher here than in other industrialized countries, the Fed has encouraged financial capital to move here, thus keeping the dollar high. By pushing unnecessarily harsh austerity policies on developing countries that had currency crises (such as Korea and Brazil), the U.S. Treasury and the IMF have contributed to the shrinkage of our export markets. And by sacrificing their domestic growth on the alter of fiscal rectitude (as well as failing to make necessary structural reforms), both the Europeans and the Japanese have failed to stimulate their own economies and thus have contributed to the massive imbalances in global trade (as well as to the depressed conditions in Latin America, Asia, and other developing regions). Finally, slow growth in most of the world (except the United States) has led to depressed prices for primary commodities, which benefit U.S. consumers today but are hurting our own farmers and miners as well as agricultural and mineral producers around the world—including in crisis countries like Brazil and Russia, as well as numerous poor countries in regions such as Central America and sub-Saharan Africa.

*There is no way to turn around the U.S. trade situation in the short run without a recovery of growth in these other countries,* which constitute both major markets for our exports and important sources of our imports<sup>19</sup>—and such a recovery will require a reversal of many policies currently in place, such as the fiscal contraction we have pushed on Brazil.<sup>20</sup>

The significance of depressed conditions in U.S. export markets can also be seen from **Figure 9**, which shows "real" export and import volumes on a quarterly basis starting in 1993:I. As this figure shows, what is striking about the last two years is not that import growth has been unusually rapid, but rather that export growth has been unusually slow. In fact, real exports have been virtually stagnant since the second half of 1997, while imports have continued to grow as strongly as before. Of course, in some individual sectors there have been notable import surges, such as in the steel industry—where the capital intensive nature of production requires running factories at full capacity, and thus gives foreign firms incentives to try to dump unsold products in the U.S. market when domestic demand in their countries is depressed. Other sectors with rapid import growth in the last few years include computers and automobiles (including parts and components in both cases). But on the whole, the rise in the trade deficit in the past two years has been driven more by sluggish export performance than by accelerated imports, suggesting that slow growth and recessions abroad are taking their toll on America's most efficient and competitive industries (such as aircraft and agriculture).

<sup>&</sup>lt;sup>19</sup> Depressed economic conditions along with depreciated currencies in other countries have contributed to strong surges in exports to the U.S. in certain sectors, especially the hard-hit steel industry.

<sup>&</sup>lt;sup>20</sup> See Jeffrey D. Sachs, "Brazil Fever: First, Do No Harm," *Milken Institute Review* (Second Quarter 1999), pp. 16-25, on the flaws in the U.S. Treasury-IMF policy approach for the Brazilian economy.

#### **Increasing Foreign Debt and Interest Outflows**

There is one more cause of worsening current account deficits that has received too little attention in most discussions thus far, and that is the net outflow of interest payments required to service the growing U.S. international debt. International flows of interest payments are included in the current account balance, even though they are not counted as trade in goods or services. Since a current account deficit has to be financed by international borrowing, which leads to an increase in the net foreign debt, which in turn requires a greater net outflow of interest payments that further reduces the current account balance, the dynamics of international debt accumulation imply a vicious circle of self-perpetuating worsening current account deficits. This has not been a major problem quantitatively so far, but *the U.S. international debt has now risen to a point where the net outflow of interest payments is likely to become a significant (and rapidly growing) negative component of the current account for the foreseeable future.* 

The U.S. net international debt reached a record \$1.2 trillion at the end of 1998.<sup>21</sup> According to my projections,<sup>22</sup> if the U.S. continues to run trade deficits at the present rate, this net international debt will reach about \$3.8 trillion by 2005 (see **Figure 10**). Moreover, if we exclude certain items that should not be counted in calculating the U.S. net external *financial* debt, namely direct foreign investment and gold reserves, we find that the U.S. net *financial* debt was already \$1.6 trillion at the end of last year and is projected to hit \$4.1 trillion by 2005—which will be about 35% of GDP at that time (up from 18% in 1998).

This growing external financial debt of the United States in turn has a negative "feedback effect" on the current account of the balance of payments via increased net outflows of interest and dividend payments to foreigners (**Figure 11**). The net outflow of financial investment income (interest and dividends, but referred to simply as "interest" in Figure 11 for brevity) was already \$66 billion in 1998 and is projected to reach \$166 billion by 2005, if present trends continue (and assuming no change in interest rates)—an amount that would exceed the 1998 trade deficit in goods and services (which was \$164 billion). Thus, unless we take measures to reduce our trade deficit and contain the increase in our foreign debt over the next six years, net interest outflows roughly equal in magnitude to the current level of the trade deficit in goods and services will put additional downward pressure on the current account deficit, creating a vicious circle of worsening deficits and growing debts.

This kind of debt accumulation and interest outflow is sustainable only as long as international investors are willing to continue lending us the funds required to finance our current

<sup>&</sup>lt;sup>21</sup>See Russell B. Scholl, "The International Investment Position of the United States at Yearend 1998," *Survey of Current Business* (July 1999), pp. 36-47.

<sup>&</sup>lt;sup>22</sup> The following discussion draws upon Robert A. Blecker, "The Ticking Debt Bomb: Why the U.S. International Financial Position is Not Sustainable" (Washington: Economic Policy Institute, Briefing Paper, June 1999), which explains the methodology used in making the projections shown in Figures 10-11, but the forecasts have been updated here using recently released revised data from the Department of Commerce as reported in Russell B. Scholl (op. cit.). The projections assume that the underlying trade deficit in goods and services is 3% of GDP from 2000-2005. See "The Ticking Debt Bomb" for more details.

account deficit and are also willing to continue to hold onto and roll over their existing portfolios of U.S. assets (stocks, Treasury securities, other bonds, bank deposits, etc.). If we keep accumulating foreign debts at this rapid pace, it is inconceivable that foreigners will continue to want to pour hundreds of billions of dollars a year into U.S. assets and to hold ever-larger portfolios of U.S. assets indefinitely, without at some point beginning to entertain fears about the value of those assets declining—either because the assets themselves become perceived as overvalued (e.g., the stock market bubble), or because there is a fear of an inevitable dollar depreciation to reduce the trade deficit as indicated earlier. At whatever point in the future such fears develop, recent history teaches us that confidence can decline rapidly and unexpectedly, creating selffulfilling prophecies as speculators sell off their positions in a panic and precipitate the very outcome (i.e., collapse in stock prices and currency depreciation) that they fear.

When this happens—as it inevitably must, if we don't get our trade deficit under control sooner—it will put U.S. policy makers in a difficult bind. They will either have to raise interest rates to try to restore investor confidence and rescue the dollar, thus precipitating a severe recession, or else abandon the high dollar strategy and let the exchange rate depreciate. Either way, the dollar and the U.S. economy could have a "hard landing," although I would argue (based on the preceding analysis of the causes of the trade deficit) that it would be better to let the dollar fall than to try to rescue it with high interest rates. Recall Figure 2 above, which suggests that the dollar is inevitably due for a downward correction sometime in the future, in order to bring it back to a trend more consistent with balanced trade—and the farther the dollar drifts away from that trend, the harder will be the crash when it falls.

It must be emphasized that it would *not* take a very large initial shift in investors' behavior to force painful adjustments on the U.S. economy in order to balance our trade.<sup>23</sup> Consider that, by the end of 1998, the total stock of foreign financial assets in the U.S. (gross U.S. liquid liabilities) had reached \$5.2 trillion (see Figure 7). If foreign investors decided to sell off only about 5¾% of their portfolios of U.S. assets, this would amount to a net capital outflow of about \$300 billion, roughly equal to the projected U.S. current account deficit for 1999. If we can no longer borrow this amount from abroad, we would be forced to balance our trade overnight through very painful adjustments at home—some combination of a steep dollar decline and a sharp fall in national income (i.e., a recession). Some simple calculations reveal that the fall in GDP required to eliminate even half of a \$300 billion trade deficit via income adjustment (assuming the other half was eliminated by dollar depreciation) would easily exceed 5%—and a 5% fall in GDP would be the worst recession in modern U.S. history (but not unlike what countries like Mexico, Thailand, and Korea have experienced in recent years—countries which also allowed their currencies to become significantly overvalued and failed to adjust them in time).

#### **The Policy Perspective**

The type of "hard landing" scenario outlined above does not have to come to pass, but if

<sup>&</sup>lt;sup>23</sup> This point was made by John Eatwell and Lance Taylor, "Capital Flows and the International Financial Architecture," paper presented at the Council on Foreign Relations, New York, July 1999.

we want to reduce the risk of such a crisis occurring in the future we need to take measures now to bring down the trade deficit and stem the growth of the U.S. foreign debt in a more gradual, orderly fashion. While a detailed set of policy prescriptions would be beyond the scope of this statement, the above analysis implies there are three priority areas for policies to reduce the trade deficit and relieve the burden of the U.S. international debt:

- 7. First, we need to engineer a gradual but significant reduction in the value of the dollar. This will require us to reduce interest rates, in order to make U.S. financial assets less attractive to foreigners—not to raise interest rates further, as the Fed is currently contemplating. In order to keep the dollar decline orderly and prevent a panic, clear targets should be announced in advance, consistent policies (i.e., interest rate reductions) should be implemented, and massive intervention should be promised to defend the target ranges. For the longer term, explicit "target zones" or "crawling bands" may be helpful for managing exchange rates among the major currencies (dollar, euro, yen, and sterling). If the dollar begins to depreciate on its own (and there are signs of this at the present time, in early August 1999), we should not resist that decline but rather welcome it as a necessary adjustment and endeavor to make it smooth and gradual rather than an abrupt collapse.
- 8. Secondly, and equally importantly, we need to encourage a reorientation of macroeconomic policies in our major trading partners to stimulate more growth abroad, along with structural reforms to make their markets more open to imports of U.S. manufactures and agricultural products. It is time for Europe to abandon the straightjacket of Maastricht policies and for Japan to pull itself out of its prolonged slump and to open its market to manufactured imports. Moreover, it is time to reverse the austerity policies that have been adopted in most of the developing countries that underwent financial crises in the past five years, under pressure from the U.S. Treasury and the IMF, so that these economies can once again grow and provide for the needs of their own citizens as well as provide more prosperous markets for U.S. exports. And finally, it is time to abandon the premature drive to liberalize capital flows that has proved so disastrous in many developing countries, whose "emerging" financial markets were unprepared for the resulting inflows of volatile "hot money," and to accept the need for reasonable capital controls to stabilize some of their economies (as many diverse countries, including Chile, India, and Malaysia, have done, in various ways).
- 9. In the long term it is not desirable to have to have either a falling currency or relatively slow growth in the U.S. in order to avoid rising trade deficits. In order to escape this dilemma, it is vital to make long-term structural reforms, such as opening up foreign markets more to U.S. exports and insisting on improved labor standards and environmental regulations as conditions of access to the U.S. market in trade negotiations. Overall, a trade policy that would place more emphasis on the interests of U.S.-based producers (both firms and workers) rather than the interests of U.S.-owned companies operating abroad would do much to help address the long-term U.S. trade imbalance. Market access should be reciprocal and enforced, and granted on the basis of continuing efforts to create a true "level playing field" in terms of social standards as well as

property rights. More investment in civilian R&D, better education, and improved domestic infrastructure at home are also essential ingredients in a long-term competitive strategy. With a more balanced set of trading relations with our trading partners, we should be able to avoid the necessity of having to either depreciate the dollar or slow our growth in order to keep our trade balance in equilibrium.

# Table 1U.S. Merchandise Trade By Country and Region, 1998

(International Transactions Basis, in Billions of U.S. Dollars)

			Percentage		
Country or Region	Exports	Imports	Balance	of Total Deficit(c)	
Western Europe	159.1	194.0	-34.9	14.1	
European Union	145.9	176.1	-30.2	12.2	
Germany	26.4	49.7	-23.3	9.4	
United Kingdom	37.9	34.4	3.5	-1.4	
Canada	156.8	175.8	-19.0	7.7	
Mexico	78.4	95.5	-17.1	6.9	
Total NAFTA	235.2	271.3	-36.1	14.6	
Other Western Hemisphere(a)	63.2	50.2	13.0	-5.3	
Japan	56.6	121.9	-65.3	26.4	
China	14.0	71.2	-57.2	23.2	
Taiwan	17.2	33.1	-15.9	6.4	
Hong Kong	12.8	10.5	2.3	-0.9	
Korea	15.8	23.9	-8.1	3.3	
Singapore	15.6	18.4	-2.8	1.1	
Other Asia	66.2	90.2	-24.0	9.7	
Total Asia, excluding Japan	126.0	247.3	-121.3	49.1	
Total Asia, including Japan	182.6	369.2	-186.6	75.6	
Total World(b)	670.2	917.2	-246.9	100.0	

Source: U.S. Department of Commerce, BEA, and author's calculations. Notes:

(a) Excluding Canada and Mexico.

(b) Includes other countries and regions not shown separately.

(c) Negative numbers in this column indicate surpluses.

## Table 2Consumption, Investment, and Government Spending, the Budget and Trade Balances, and Saving Ratesas Percentages of GDP, in Business Cycle Peak Years Since 1973 Compared with 1998

	1973	1979	1981	1989	1998
Expenditures on:					
Personal consumption	61.6	62.3	62.3	66.1	68.2
Private domestic investment(a)	17.6	18.8	17.9	15.2	16.1
Government consumption and investment(b)	20.8	19.8	20.3	20.1	17.5
Government budget balance(b) as measured by:					
Surplus or deficit on current expenditures(c)	1.6	1.3	-0.1	-0.3	2.6
Government net lending or borrowing(d)	0.5	0.2	-1.1	-1.7	1.7
Trade balance as measured by:					
Net exports of goods and services	0.0	-0.9	-0.5	-1.5	-1.8
Net foreign investment	0.6	0.1	0.2	-1.7	-2.5
Saving rates:					
Private Saving(a)	17.5	17.5	18.7	15.0	12.8
National Saving(e)	17.9	17.8	17.6	13.3	14.5
Memorandum:					
Public Investment(b)	3.5	3.3	3.3	3.4	2.8

Source: Author's calculations based on data from the U.S. Department of Commerce, Bureau of Economic Analysis, as published in the *Economic Report of the President*, February 1999, and updated from the *Survey of Current Business*, various issues.

Notes: All variables are measured on a national income and product account basis in current dollars and expressed

as percentages of gross domestic product (GDP).

(a) Investment and saving are measured on a gross basis, i.e., including depreciation ("consumption of fixed capital"). Private investment includes business fixed investment, residential investment, and inventory accumulation. Private saving includes personal saving of households plus gross corporate saving.

(b) Includes federal, state, and local governments.

(c) Current government revenues minus government consumption expenditures.

(d) Equals the surplus or deficit on current expenditures plus government depreciation ("consumption of fixed capital") less government investment.

(e) Equals the sum of private saving and the government budget surplus (net lending).











Sources: Board of Governors of the Federal Reserve System and author's calculations.





Source: Department of Commerce, BEA, and author's calculations. Note: The current account balance is measured by net foreign investment and the government budget balance is measured by net government saving.













Source: U.S. Department of Commerce, BEA.





Source: U.S. Department of Commerce, BEA, and author's calculations. Note: This series excludes direct investment.

Figure 8 Growth Rates of Real GDP in the United States and Trading Partner Economies, 1998



Source: International Monetary Fund, World Economic Outlook, April 1999.

# Figure 9 Real U.S. Exports and Imports of Goods, Quarterly 1993:I - 1999:II



Source: U.S. Department of Commerce, BEA. Note: Data for 1999:II are preliminary.





Source: U.S. Department of Commerce, BEA, and author's calculations.





Source: U.S. Department of Commerce, BEA, and author's calculations.