

THE BENEFITS OF A LOWER DOLLAR

How the high dollar has hurt U.S. manufacturing producers and why the dollar still needs to fall further

by Robert A. Blecker

The current decline in the dollar will provide a much-needed stimulus to the U.S. economy. The falling dollar will bring especially welcome relief to the internationally competitive U.S. manufacturing sector, which has suffered disastrous consequences—lost jobs, reduced profits, and decreased investment—as a result of the dollar’s overvaluation for the past several years. However, although the dollar has come down significantly from its peak in February 2002, it has not yet fallen nearly enough to reverse the damage caused by its high value since the late 1990s.

In spite of its recent fall, the dollar has still not lost most of the value it has gained since 1995 compared to the euro and other major currencies. Moreover, the dollar has not fallen compared to the currencies of the developing nations that now account for more than half of the U.S. trade deficit. Some of these nations, especially China, maintain fixed exchange rates and intervene heavily to prevent the type of market-driven adjustment that is now occurring between the dollar and the euro. As a result, relying on financial markets to bring the dollar down is not enough. More active management of the dollar’s decline—including cooperation with major U.S. trading partners and action to end foreign manipulation of currency values—is vital to ensure that the dollar falls in a comprehensive and sustainable fashion.

The high value of the dollar since the late 1990s has acted like a massive tax on U.S. exports and a huge subsidy to U.S. imports. As a result, although U.S. manufacturing firms have made substantial investments in new technologies and U.S. manufacturing workers have vastly increased their productivity, these achievements have not paid off in the face of foreign products that have

been selling at deep, artificial discounts created by the overvalued dollar. Specifically, the overvalued dollar has resulted in:

- About 740,000 lost jobs in the manufacturing sector by 2002—more than one-quarter of the 2.6 million jobs lost in manufacturing since 1998.
- A decrease of nearly \$100 billion in the annual profits of U.S. manufacturing companies by 2002.
- A fall in investment in the domestic manufacturing sector by over \$40 billion annually as of 2002, representing a loss of 25% of U.S. manufacturing investment.

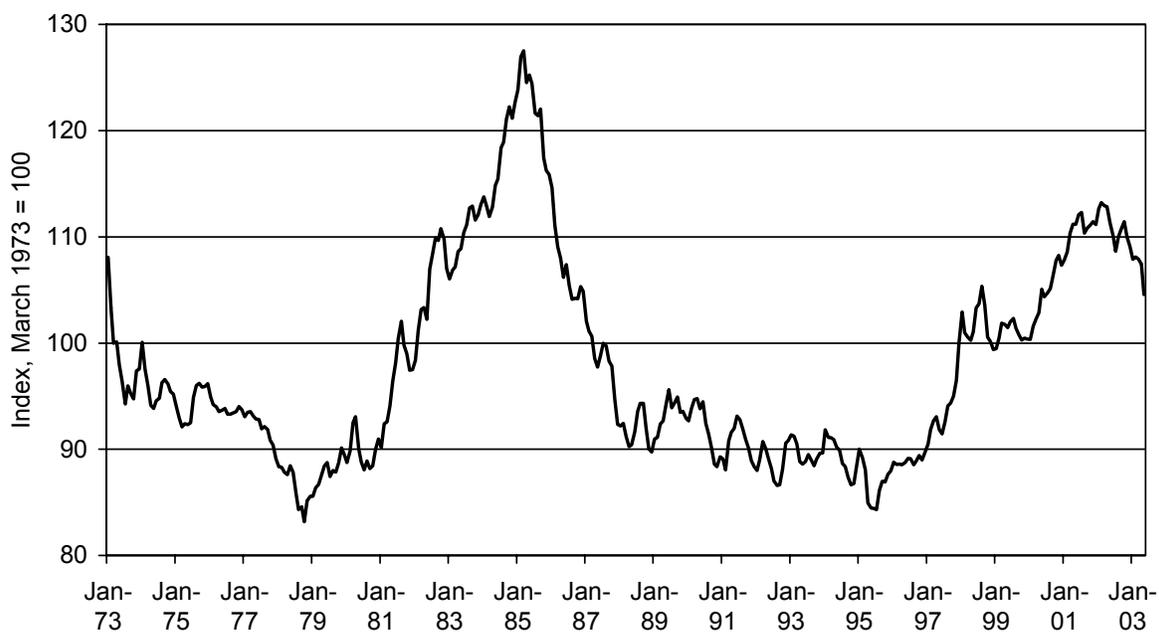
Thus far, the dollar has reversed only part of its 34% rise in overall value (in “real,” inflation-adjusted terms, compared with most global currencies) between mid-1995 and early 2002. As of May 2003, the dollar is still 24% higher overall than it was at its low point in July 1995.¹ Moreover, the dollar’s behavior in the last few years has varied significantly between two different groups of currencies:

- Compared with other “major” currencies (the Japanese yen, British pound, the euro and its predecessors, and a few others²), the dollar has fallen 16% since February 2002, after rising by 51% between April 1995 and February 2002; thus *the dollar has lost only about a third of the value it gained in the late 1990s relative to those currencies*.
- Other important U.S. trading partners, such as China and other developing nations, have fixed or managed exchange rates that do not respond to the market forces that have generated the recent decline in the dollar vis-à-vis the major currencies. *The dollar has continued to rise relative to these other currencies*, which belong to countries that now account for nearly half of total U.S. trade (and more than half of the trade deficit).

With the U.S. economy still struggling to recover nearly two years after the recession of 2001 officially ended, with the trade deficit still at record levels, and with global currency markets already forcing a downward adjustment in the U.S. exchange rate, the need to reconsider the U.S. Treasury’s “strong dollar policy” has never been more clear. Although some Bush Administration officials have recently signaled a greater openness to market-driven reductions in the value of the dollar, much more needs to be done by the U.S. government—both alone and in collaboration with U.S. trading partners—to ensure a stable adjustment of the dollar to a more realistic level while promoting a recovery of growth in the global economy.

Causes of the overvalued dollar

The U.S. dollar’s sharp rise from 1995 to 2002 and its partial fall in 2002-03 are only the latest episodes in the gyrations of the dollar’s value since the major industrialized nations switched to

FIGURE 1**Real value of the U.S. dollar, monthly broad index, January 1973 - May 2003**

Note: Data for May 2003 are preliminary.

Source: Federal Reserve Statistical Release H.10, downloaded from <http://www.federalreserve.gov/releases/h10/Summary/>.

floating exchange rates in 1973. As shown in **Figure 1**, the dollar fell for most of the 1973-79 period, but then rose to new heights in the early 1980s before falling precipitously in 1985-87. After that, the dollar had a more gradual declining trend through mid-1995. In mid-1995, there was another abrupt reversal, as the dollar began rising toward a new peak in early 2002, at which point its value returned to levels not seen since the mid-1980s.

Figure 1 shows that the decline in the dollar since early 2002 has reversed only part of the increase after 1995. By this “broad” measure, which includes most other global currencies, the dollar rose by 34% from July 1995 to February 2002, and has fallen by only 8% since that time. Although the dollar briefly had a higher value in the mid-1980s, it has been more persistently overvalued in the last several years than it was during that earlier episode. Moreover, Figure 1 makes it clear that the dollar’s fall thus far in 2003 has taken it only back to about where it was in 1999, not to its much lower level of the early and mid-1990s.

Although there are many reasons for the dollar’s rise after 1995,³ the most fundamental explanation is the strengthening of the U.S. economy during the “new economy” boom of the late 1990s, at a time when most of the rest of the world was relatively stagnant. The dollar’s strength was, to a large extent, the mirror image of severe economic weaknesses abroad that resulted in falling values of foreign currencies. Japan’s decade of stagnation, continental Europe’s slow

growth and high unemployment, the Asian financial crisis, and the subsequent financial turmoil in other countries from Russia to Argentina led to a massive flight of capital funds out of those countries and into the one “safe haven” in the global economy: the United States. Meanwhile, the U.S. economy had six consecutive years of relatively rapid growth with low inflation between 1995 and 2000. A robust business climate and a booming stock market helped to attract investment into U.S. financial markets, pushing up the value of the dollar.

In addition to the overall impact of U.S. economic strength relative to foreign economic weakness, several specific events provided more targeted stimuli to the appreciating dollar. In the mid-1990s, the governments of several countries, Japan in particular, intervened to halt the dollar’s previous decline and to prevent their own currencies from appreciating further (Morici 1997). These interventions, which were especially large in 1994-96, effectively started the dollar on its new upward course and contributed significantly to rising U.S. trade deficits at that time. As a prominent trade economist wrote,

In the 1990s, the Japanese, the Chinese, and other governments have dramatically increased their purchases of U.S. government securities, propping up the value of the dollar against other currencies. This has helped to sustain both their trade surpluses and U.S. deficits, even as the United States has put its fiscal house in order. In most cases, these purchases are not market-driven decisions, made in response to higher U.S. interest rates. Rather, they often reflect policy decisions to block exchange rate adjustments, and reduce internal pressures on national governments to revise protectionist trade policies and the reliance on export-led growth. (Morici 1997, p. v)

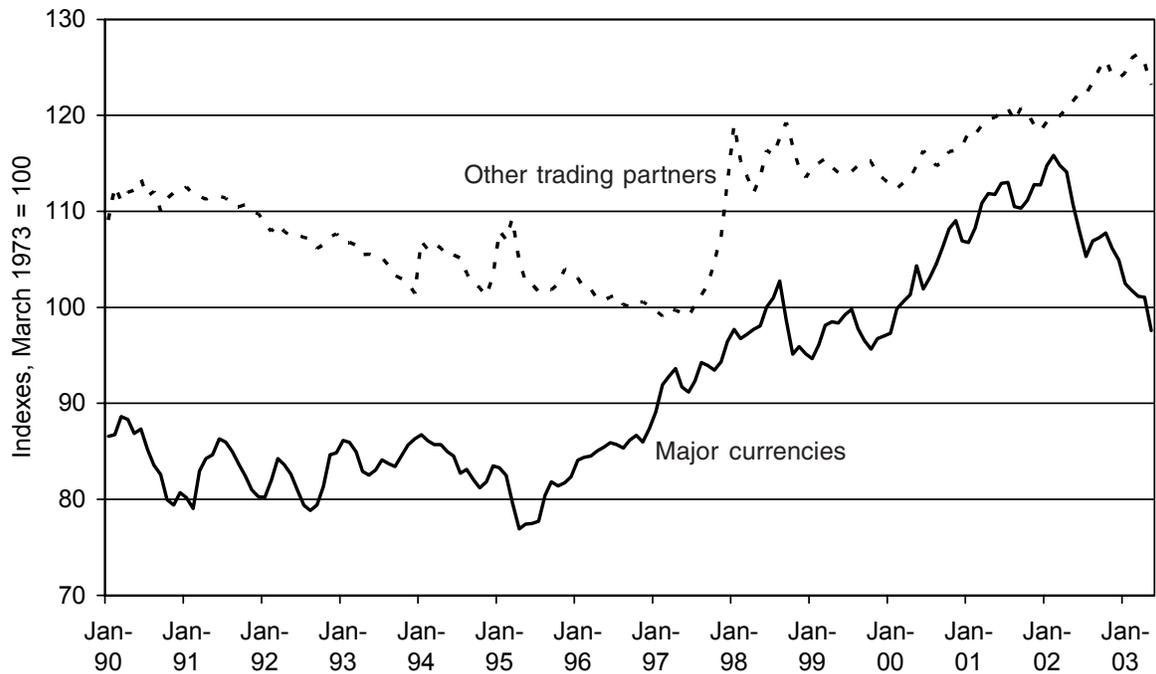
Figure 2, which focuses on the period since 1990, shows an important but oft-neglected fact about the dollar: how its exchange rate has varied between the “major currencies” of the other industrialized countries and what the Federal Reserve calls America’s “other important trading partners,” i.e., the developing nations and transition economies.⁴ Compared to the major currencies, the dollar started rising in mid-1995 and continued its upward trend until early 2002, when it began a partial reversal as described above. But compared to the other (non-major) currencies, the dollar did not rise until the Asian financial crisis of 1997-98, which led to the sudden collapse or devaluation of several important currencies in Asia and elsewhere (notably the Thai baht, Taiwanese dollar,⁵ Korean won, Indonesian rupiah, Malaysian ringgit, Philippine peso, and Russian ruble) in the second half of 1997 and 1998.

As a result of the Asian crisis, the dollar jumped in value relative to the other currencies in 1997-98. Most of the Asian currencies that initially collapsed began to stabilize by 1999, but subsequent currency crises in other developing countries (such as Brazil, Turkey, and Argentina) and smaller depreciations elsewhere (e.g., Mexico) have led the dollar to *rise even higher* relative to these other currencies in the early 2000s. As of May 2003, the dollar was 24% higher against these other (developing country) currencies, compared with its low point relative to the same currencies in 1997 (see Figure 2).

The other currencies account for roughly 45% of U.S. trade with the countries included in the Fed’s broad dollar index and nearly half of overall U.S. trade;⁶ hence, the dollar’s continued rise

FIGURE 2

Real value of the U.S. dollar, monthly indexes for major currencies and other trading partners, January 1990 - May 2003



Note: Data for May 2003 are preliminary.

Source: Federal Reserve Statistical Release H.10, downloaded from <http://www.federalreserve.gov/releases/h10/Summary/>.

relative to these currencies has thrust the overall value of the dollar upward and has had a notable impact in worsening the U.S. trade deficit. By 2002, the developing countries accounted for more than half of the U.S. trade deficit for goods.⁷ Thus, *the dollar is still rising and not falling compared to the currencies of the countries that account for most of the nation's trade deficit.*

One reason the dollar has stayed so high relative to these other currencies is that many of their governments either peg their exchange rates (fix them relative to the dollar or other major currencies) at artificially low values, or intervene heavily to keep their currencies undervalued relative to the U.S. dollar (the latter policy is also followed by Japan, which issues a "major" currency). Such manipulative exchange rate policies are usually pursued as part of an export-led growth strategy that fosters chronic trade surpluses with the United States and therefore effectively exports unemployment to this country's traded goods sectors (mostly manufacturing). The most egregious offenders in this regard are a number of prominent East Asian countries, especially Japan, China, and Taiwan, which (not coincidentally) account for disproportionately large shares of the U.S. trade deficit.

Countries keep their currencies undervalued (and the dollar overvalued) by buying up the excess supplies of dollars that enter their countries and holding them as foreign exchange reserves.

TABLE 1
Total international currency reserves (excluding gold), selected countries and years
(end-of-period, in billions of U.S. dollars^a)

	1990	1995	2002
Japan	\$78.5	\$183.2	\$461.3
P.R. China	29.6	75.4	291.2
Taiwan	72.5	90.3	161.7
Hong Kong	24.6	55.4	111.9
Singapore	27.8	68.7	82.1
Subtotal: Four Asian NICs ^b	154.4	289.7	646.9
Euro area ^c	290.8	299.1	246.6

Notes:

- a. Data were converted from special drawing rights (SDRs) using the end-of-period U.S. dollar-SDR exchange rate for each year.
- b. Newly industrializing countries, i.e., China, Taiwan, Hong Kong, and Singapore.
- c. Data for 1990 and 1995 are the sums for the countries that later joined the European Monetary Union (EMU) in 1999. Data for 2002 are EMU totals including reserves of the European Central Bank (ECB) not counted in the individual countries' statistics.

Source: International Monetary Fund, *International Financial Statistics*, online database.

As shown in **Table 1**, several leading Asian countries have had truly prodigious increases in their international currency reserves since 1995.⁸ Japan increased its foreign currency reserves by two and a half times between 1995 and 2002, reaching a world-leading \$461.3 billion at the end of 2002. To put this number in perspective, Japan's reserves at that time were nearly double those of the entire euro area (\$246.6 billion), even though the euro area is much larger by other economic criteria (e.g., gross domestic product) and the reserves of the future euro area countries exceeded those of Japan in 1995 and earlier.⁹

China's reserves nearly quadrupled between 1995 and 2002, and at \$291.2 billion were also larger than those of the euro area at the end of 2002. The reserves of Taiwan, Hong Kong, and Singapore are also enormous for relatively small countries, and grew substantially between 1995 and 2002. These four newly industrializing countries (NICs)—China, Taiwan, Hong Kong, and Singapore—together amassed \$646.9 billion of foreign reserves by 2002, more than double what they held in 1995, and more than double the level of the entire euro area. No other group of countries in the world comes close to the level of reserves accumulated by the East Asian countries shown in Table 1.

Of course, some growth of international reserves is important for sustaining global liquidity and facilitating trade, and the evidence from the financial crises of the late 1990s shows that countries with larger arsenals of reserves were more successful in avoiding speculative attacks on their currencies or contagion effects from other countries' crises.¹⁰ But the sheer magnitude of the reserves accumulated by these East Asian countries, and the rapidity with which these reserves have increased in recent years, is *prima facie* evidence of efforts to keep their currencies undervalued

TABLE 2
Average growth rates of U.S. real exports and imports of goods, 1990-95 and 1996-2002
(average annual percentage rates)

	Nonagricultural exports	Nonpetroleum imports
1990 to 1995	8.9	8.0
1996 to 2002	4.4	9.7

Note: The average annual growth rates shown are the simple averages of the quarterly growth rates (measured at annual rates) for the years indicated.

Source: Author's calculations based on data in U.S. Department of Commerce, Bureau of Economic Analysis, National Income and Product Accounts, Table 4.4, downloaded from <http://www.bea.gov>.

and prevent their currencies from appreciating to exchange rates that would be conducive to more balanced trade relations with the United States.¹¹ This is outright currency manipulation of a mercantilist nature, intended to maintain those countries' trade surpluses with the United States, which by 2002 accounted for about 40% of the overall U.S. trade deficit.¹²

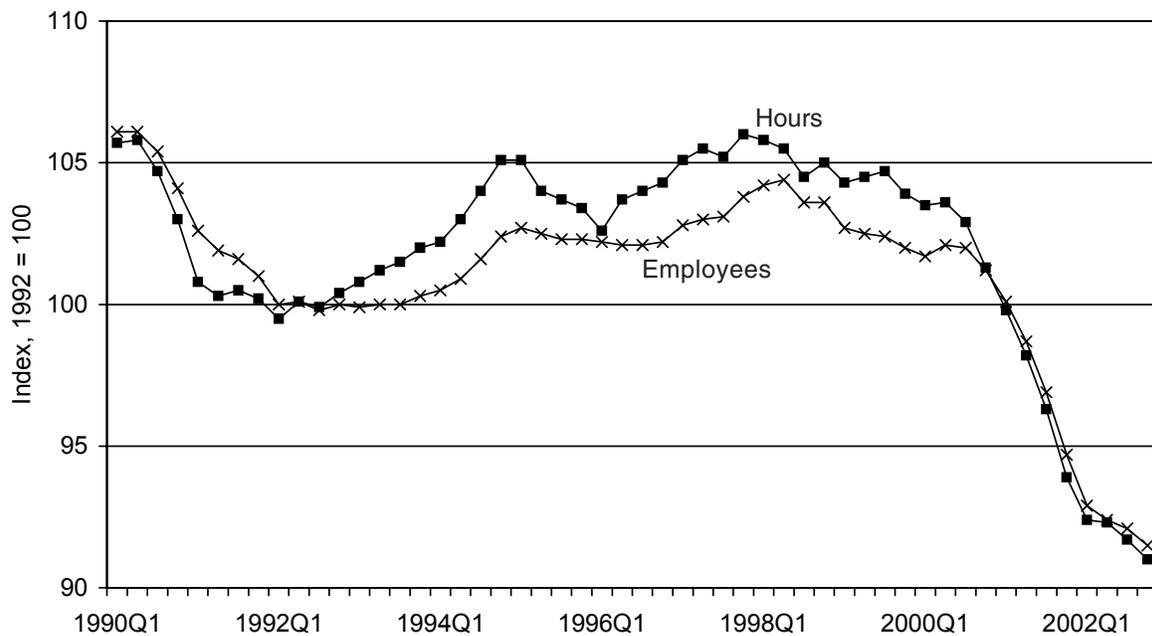
How the high dollar has hurt U.S. manufacturing

The rise of the dollar since 1995 has had a devastating effect on U.S. trade performance, especially in the manufacturing sector, which accounts for the vast majority of U.S. trade.¹³ A high dollar makes U.S.-produced goods less competitive compared with foreign-produced goods, putting U.S. exports at a disadvantage while encouraging imports into the U.S. market. As **Table 2** shows, the growth rate of nonagricultural exports (mostly manufactures) was *cut in half* across 1996-2002 (the period of a rising dollar) compared with 1990-95 (a period of a gradually falling dollar, as shown previously in Figure 1).¹⁴ The growth rate of nonpetroleum imports (also mostly manufactures) increased over the same time frame.

Job losses caused by dollar overvaluation

Slower export growth combined with accelerated import growth implied that foreign trade had a *negative* net effect on U.S. employment during the late 1990s and early 2000s. Most of these negative employment effects were felt in the manufacturing sector, which produces the vast majority of the traded goods and services in the U.S. economy.¹⁵ Indeed, although overall U.S. employment rose rapidly in the economic boom of the late 1990s, hours of manufacturing workers peaked in the fourth quarter of 1997, the number of manufacturing jobs peaked in the second quarter of 1998, and both trended downward thereafter (as shown in **Figure 3**), even though the recession did not begin until 2001.¹⁶

A large part of this falling trend in manufacturing employment since the late 1990s can be attributed to the rising trend in the dollar since 1995. According to estimates, for each 1.0% rise in

FIGURE 3**Manufacturing employment and hours, quarterly indexes, 1990Q1 to 2002Q4**

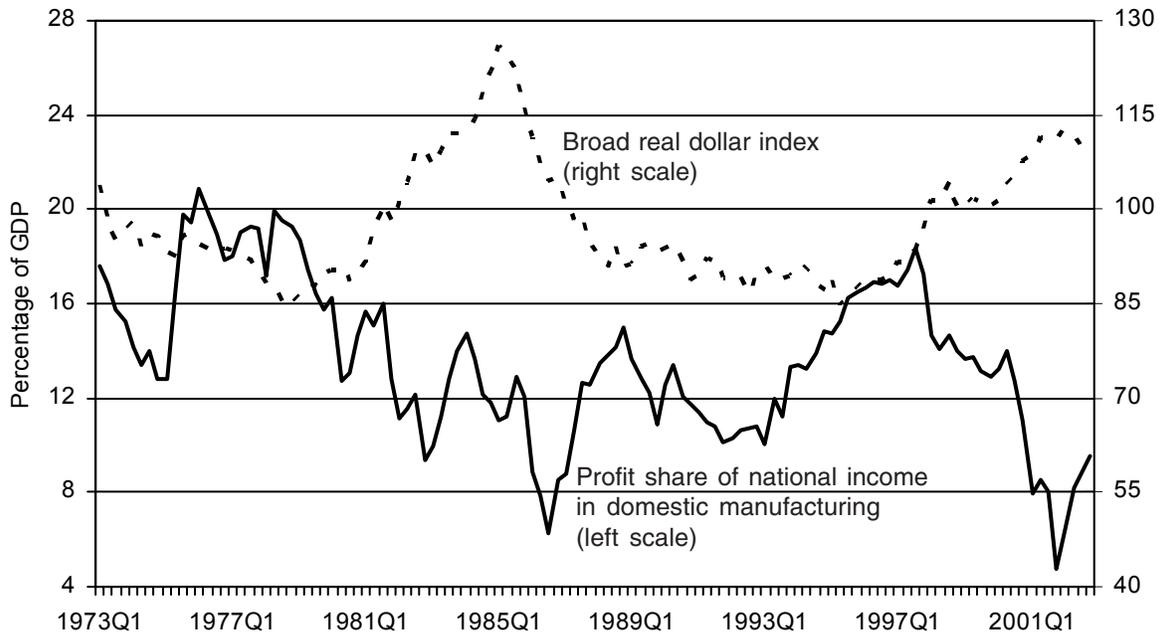
Source: U.S. Department of Labor, Bureau of Labor Statistics, Major Sector Productivity and Costs, downloaded from www.bls.gov/lpc/home.htm.

the real value of the dollar, the hours of labor employed in manufacturing fall by 0.13% and the number of workers employed falls by 0.12%.¹⁷ Since the dollar rose by 33.5% between the second quarter of 1995 (when the dollar was at its lowest level) and the first quarter of 2002 (when the dollar peaked), the increased value of the dollar caused U.S. manufacturing workers' hours to fall by 4.4% and the number of jobs to decrease by 4.0%. These losses in hours and jobs attributed to the value of the dollar are beyond any effects of productivity growth and the business cycle downturn, i.e., the recession and slow recovery.

In terms of the actual number of workers affected, since there were approximately 18.5 million employees in manufacturing when the dollar reached its nadir in the second quarter of 1995,¹⁸ a 4.0% reduction in employment would be equivalent to about 740,000 jobs lost¹⁹ as a result of dollar appreciation. These three-quarters of a million lost jobs represent more than a quarter of the 2.6 million total job losses in manufacturing between the peak of manufacturing employment in the second quarter of 1998 and the employment level in the second quarter of 2003. The remainder of the job losses in manufacturing can be attributed to the effects of the recession and sluggish recovery in the United States, slow growth of U.S. export markets abroad, and continued rapid productivity growth.

FIGURE 4

Inverse relation between manufacturing profit share and the real value of the dollar, quarterly, 1973Q1 to 2002Q4

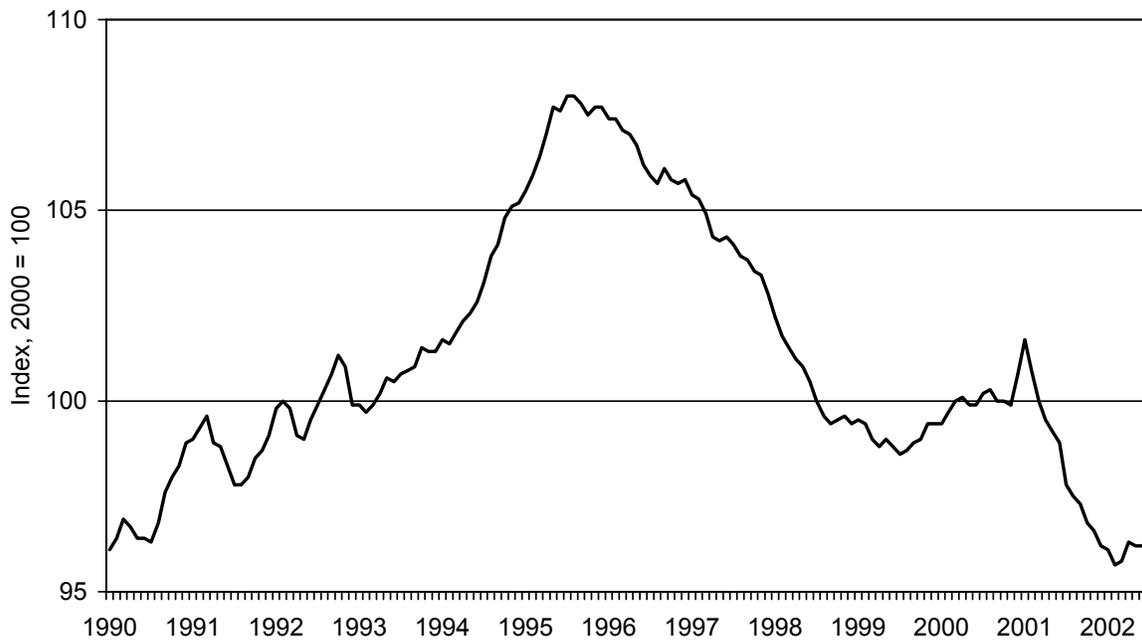


Sources : Federal Reserve Statistical Release H.10 (same as Figure 1); U.S. Department of Commerce, Bureau of Economic Analysis, National Income and Product Accounts, from <http://www.bea.gov>; author's calculations.

Manufacturing profits squeezed by the high dollar

By weakening U.S. manufacturing as a whole, the high dollar has had devastating consequences for business profits and manufacturing jobs. Starting in mid-1997, when the dollar's rise accelerated (see Figure 1), domestic manufacturers ceased to benefit from the economic boom that continued for three subsequent years in most of the U.S. economy. As **Figure 4** shows, manufacturing profits began to rebound during the economic recovery of the mid-1990s, but then peaked and tumbled in mid-1997—three years before overall economic growth slowed down in the second half of 2000 and four years before the recession of 2001.²⁰ This premature decline in manufacturing profits in the midst of an overall economic boom coincided with the dollar's accelerated rise during the outbreak of the Asian financial crisis. Figure 4 also shows that the cyclical fluctuations in manufacturing profits are virtually a mirror image of the value of the dollar, i.e., manufacturing profits and the real dollar index have generally moved in opposite directions throughout the past two decades.

The inverse relationship between the dollar and profits is no coincidence. On the one hand, a higher dollar brings down import prices and forces domestic firms that compete with imports to either cut price-cost margins or lose sales volume (or both). As **Figure 5** shows, import prices began to fall immediately after the dollar started to rise in 1995 and have trended downward ever since. On the other hand, a higher dollar also makes U.S. exports less competitive abroad and

FIGURE 5**Price index for all imports except petroleum, monthly, January 1990 to March 2003**

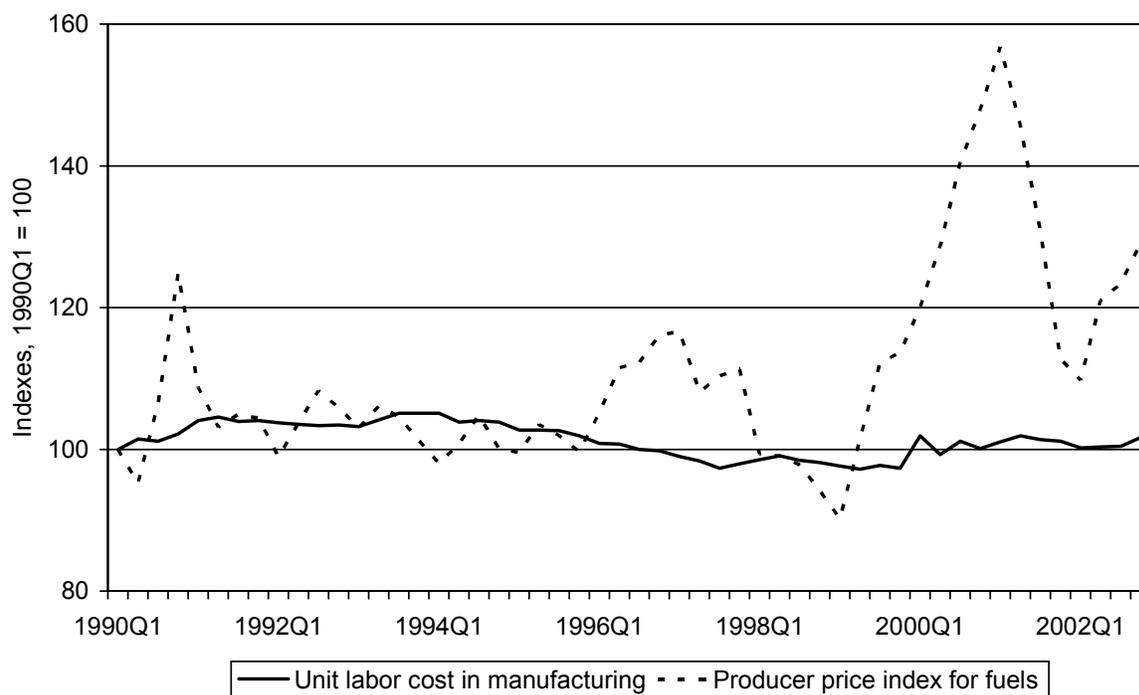
Source: U.S. Department of Labor, Bureau of Labor Statistics, downloaded from <http://www.bls.gov/mxp/home.htm>.

compels exporting firms to either lower their dollar prices or suffer reduced export volumes. Either way, exporting firms lose profits.²⁰ Thus, whether manufacturing firms compete with imports or sell in export markets, their profits are cut by an overvalued currency. Because firms that are not making profits cannot continue to employ U.S. workers, the drop in profits ultimately hurts everyone in industries that are open to foreign competition.

Of course, manufacturing profits are also affected by other factors, especially demand factors (the business cycle) and cost factors (labor, energy, and raw materials). However, none of these other factors can explain the timing of the decline in manufacturing profits starting in mid-1997. **Figure 6** shows the trends in labor and energy costs affecting the manufacturing sector since 1990. Unit labor costs in manufacturing were virtually flat throughout the 1990s and early 2000s, with only slight fluctuations, as productivity growth almost exactly matched nominal wage increases. Unit labor costs simply did not change enough to cause the wide swings in profits seen in Figure 4. Energy costs (measured by the producer price index for all fuels) have fluctuated more than unit labor costs, but the *timing* of their fluctuations does not match the trends in manufacturing profits. Fuel prices rose slightly in 1996 through early 1997, followed by a much larger increase in 1999-2000 and another increase in 2002, but these spikes in energy costs cannot explain why manufacturing profits started to decline in the second half of 1997. In fact, energy costs (i.e., fuel prices) were actually falling in late 1997 and early 1998 when the profit share began to fall (compare Figures 4 and 6).

FIGURE 6

Manufacturing unit labor costs and energy prices, quarterly indexes, 1990Q1 to 2002Q4



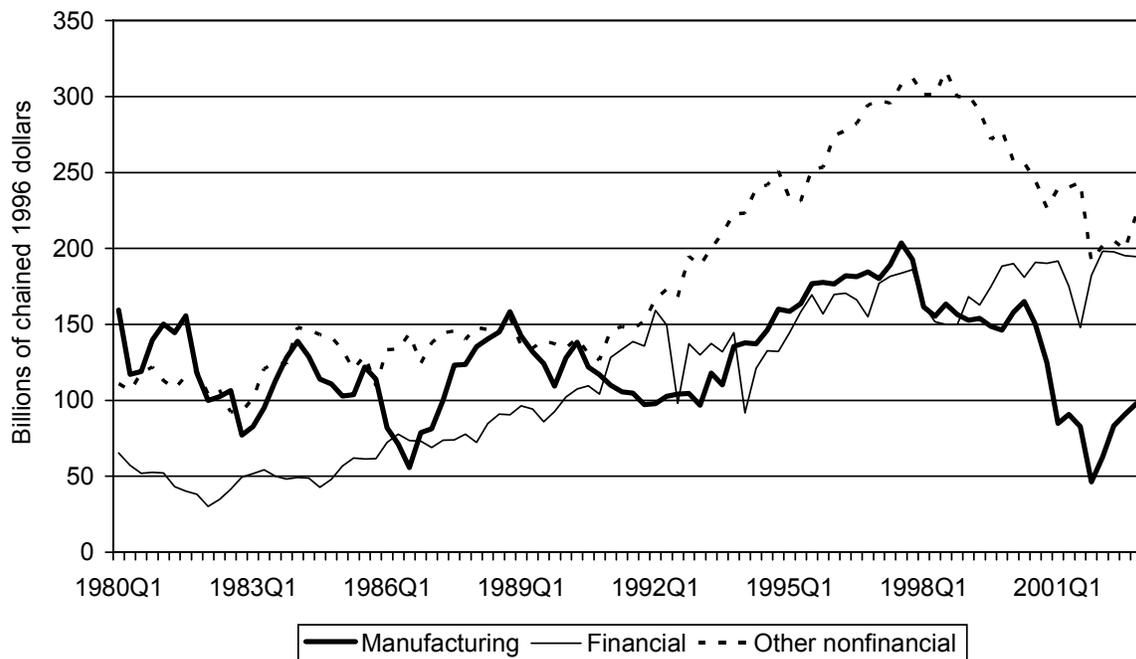
Note: All indexes were re-based to 1990Q1 = 100.

Sources: U.S. Department of Labor, Bureau of Labor Statistics, Major Sector Productivity and Costs and Producer Price Indexes, downloaded from <http://www.bls.gov>; author's calculations.

On the demand side, overall U.S. economic growth remained strong until the third quarter of 2000, three years after manufacturing profits peaked and fell. A recession occurred in the first three quarters of 2001, but this was nearly four years after manufacturing profits had begun to fall. Manufacturing profits did fall further in the last few years as a result of the growth slowdown and recession beginning in the second half of 2000, but those profits had already begun to decline while demand was still strong three years earlier. Thus, the only factor that can account for the downturn in manufacturing profits in the late 1990s was the rising dollar.

The rise in the dollar from its (quarterly) trough in the second quarter of 1995 to its peak in the first quarter of 2002 reduced manufacturing profits by \$96.2 billion annually.²¹ Since actual manufacturing profits were only \$66.7 billion (measured at an annual rate) in the first quarter of 2002, they would have been nearly one and a half times higher (144%, to be exact) if the dollar had not appreciated.

The enormous decline in manufacturing profits after 1997 was unique among the major sectors of the U.S. economy (with the possible exception of agriculture, for which comparable statistics are not available). As shown in **Figure 7**, real (inflation-adjusted) profits in manufacturing fell earlier and more precipitously than real profits in the financial sector and other nonfinan-

FIGURE 7**Real corporate profits by sector, quarterly, 1980Q1 to 2002Q4**

Note: Nominal profits were deflated by the chain-type price index for GDP.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, National Income and Product Accounts, downloaded from <http://www.bea.gov>; author's calculations.

cial sectors in the late 1990s and early 2000s. In fact, Figure 7 shows that financial sector profits were hardly affected by the recession and slow growth of the last few years. The financial sector benefits from the high dollar by continuing to attract financial inflows from foreign countries, while the goods- and services-producing sectors that have to compete with artificially cheapened foreign products are hurt. The profits of other (non-manufacturing) nonfinancial sectors also came down in the late 1990s and early 2000s—after booming more than the other sectors' profits in the mid-1990s—but did not fall nearly as fast or as far as manufacturing profits.

In spite of the losses experienced by workers and firms alike in U.S. manufacturing, it should be noted that the ultimate effects of the overvalued dollar on U.S. workers and corporations have been highly unequal. Multinational corporations (MNCs) are able to respond to the higher dollar by moving production offshore and outsourcing components abroad in order to stay competitive—eliminating jobs for U.S. manufacturing workers. Most large business firms can thus evade the negative effects of a high dollar that U.S. manufacturing workers (and smaller, national companies) cannot escape. As a result, although profits on domestic manufacturing operations fell, the profits of U.S. MNCs on their global operations were not necessarily hurt—and may even have been helped—by the strong dollar.

Investment by domestic manufacturing firms was also reduced by the high dollar

In addition to its negative impact on domestic employment and profitability, the overvalued dollar also hurt the domestic manufacturing sector by decreasing investment in new plants, equipment, and software (i.e., capital expenditures).²² Since decreased investment in real, productive assets threatens the long-term viability of U.S. manufacturers, and their ability to create jobs in the future, this negative effect of the high dollar is especially alarming.

The appreciation of the dollar diminishes investment in domestic manufacturing for two reasons. First, domestic firms that either produce for export or compete with imports are likely to perceive a reduced need for production facilities in the United States when they have to compete with foreign goods that have become cheaper in dollar terms; as a result, customers switch to foreign-produced goods. For this reason, a high dollar causes both exporting and import-competing firms to reduce their planned investment at U.S. plant locations. Second, there are indirect effects of dollar appreciation on investment through the reduced profits of domestic manufacturing firms (as discussed earlier). Business firms rely on the cash flow out of current profits to finance investment, either internally (through retained earnings) or by attracting outside funds (since bank and bondholder willingness to lend depends on firms' financial health). Thus, reduced profits curtail the ability of firms to finance their investment and can result in the cancellation or delay of already planned capital expenditures.²³

Investment in U.S. domestic manufacturing was reduced by \$42.7 billion in 2002 as a result of the post-1995 appreciation of the dollar, based on an estimate that combines the two effects discussed above.²⁴ To put this number in perspective, note that \$42.7 billion is equivalent to 24.5% of the actual level of investment in manufacturing of \$174.3 billion in 2001 at current prices (sectoral investment data for 2002 were not available as of this writing). With capital expenditures thus reduced by nearly one-quarter as a result of the rise in the dollar, domestic manufacturers will find it difficult to keep up with new technologies and to maintain the pace of productivity growth that they were able to achieve in the 1990s unless the overvaluation of the dollar is soon reversed. Such a reversal will require the dollar to fall further, and in relation to more currencies, than it has fallen to date.

Conclusions and policy recommendations

It is clear that the high value of the dollar has hurt employment, profits, and investment in the U.S. manufacturing sector. Although the value of the dollar has declined against some currencies, this partial decline has erased only a fraction of the overvaluation built up since 1995. The dollar still needs to fall further to allow the U.S. economy, and especially the manufacturing sector, to get back on their feet. This concluding section will discuss what the U.S. government can do, both by itself and in cooperation with U.S. trading partners, to encourage a further and more widespread decline of the dollar and to stabilize exchange rates at more sustainable levels.

Until recently, Bush Administration officials have generally maintained their support for a "strong dollar policy," in spite of occasional admissions (usually by either former Treasury Secre-

tary Paul O'Neill or current Treasury Secretary John Snow) that a decline in the dollar might be a welcome corrective.²⁵ Since the dollar's decline accelerated in April-May 2003, Snow and some other U.S. officials have begun to adjust their rhetoric, signaling that the United States will accept a market-driven realignment of the dollar's exchange rate, but indicating no desire to manage the process or to coordinate it with other countries.²⁶ What remains constant in the administration's dollar policy is a hands-off, laissez-faire attitude toward currency markets (Blustein 2003b).

Although the new attitude of accepting market-driven dollar decline is a welcome shift in Bush Administration policy, no one in this administration has yet accepted the need for more active management of the dollar's decline by the United States and its trading partners. There has also been no support for an extension of the dollar's fall to encompass more currencies, especially those with managed or manipulated exchange rates. A partial decline of the dollar relative to only some currencies (mostly European) that account for less than half of the U.S. trade deficit will not suffice for reversing the damage done to the domestic U.S. economy by the dollar's broad-based overvaluation in recent years. However, there is also a risk that a decline in the dollar vis-à-vis the euro and other floating-rate currencies could trigger a panic-driven rout if the dollar collapses so fast as to threaten global financial stability.

Although the dollar needs to fall significantly further relative to the major currencies such as the euro, its fall needs to be cushioned as its value begins to reach a more acceptable level (approximately the value the dollar had in 1995 before it began its ascent). Moreover, the dollar also needs to drop relative to those foreign currencies that have been deliberately undervalued through exchange rate manipulation by their governments (especially in East Asia), so that an excessive share of the adjustment burden is not placed on those countries (mainly in Europe) that let their currencies adjust to market-determined levels. This is especially important so that the depressing effects of the falling dollar on foreign economies are not exacerbated at a time when many countries, such as those in Europe, are already suffering from slow growth and high unemployment. With the entire global economy teetering on the verge of a worldwide slowdown, the way the current realignment of exchange rates is managed will be a crucial determinant of whether that realignment helps to revive the global economy, or to sink it further.

A more effective dollar policy, therefore, has to begin by recognizing the vital distinction between the major currencies with floating exchange rates, and the currencies of the developing nations that have pegged or managed rates. For the major, floating-rate currencies (such as the euro), U.S. economic officials, in cooperation with their foreign counterparts, should announce a desire for a further decline in the dollar, but set a target range for the dollar's level in order to encourage an orderly and limited depreciation. For those countries that keep their currencies artificially undervalued by buying up large amounts of dollar reserves (primarily China, but also Japan and the other Asian countries identified in Table 1), the United States should pressure them to abandon such intervention in currency markets and allow their exchange rates to appreciate. The rest of this section explores how these twin objectives can be achieved and sustained.

Influencing market psychology

Given the importance of market psychology in determining the value of any financial asset, including a currency such as the U.S. dollar, statements by prominent U.S. officials have profound effects on international currency markets. Administration rhetoric in support of a strong dollar helped to brake the dollar's decline until early 2003; the recent shift toward accepting a weaker dollar has contributed to accelerating that decline. It is vital for leading economic policy makers such as the Fed Chairman and Treasury Secretary to clearly and publicly accept the need for further dollar depreciation, instead of trying to prevent the necessary correction of an unsustainable, misaligned exchange rate.

At the same time, market expectations must be stabilized in order to prevent a panic-driven collapse of the dollar, such as occurred with the Mexican peso in 1994-95 and several Asian currencies in 1997-98. Therefore, U.S. officials should not only suggest that the dollar needs to fall more, but also state a target range for the necessary dollar depreciation and suggest a floor for the dollar's level relative to the other major currencies. Even implicit suggestions of this sort proved effective in the 1985-87 period (when no specific targets were mentioned); more specific targets for sustainable exchange rates could be very effective today. The data in Figure 2 suggest that another 15-20% further depreciation of the dollar relative to the major currencies (starting from the current level in May 2003) would bring the dollar back to about where it was in 1995 (roughly an index of 80 on the scale shown in Figure 2). All such announcements would be even more credible if they were backed by the United States' major trading partners, such as through a joint announcement at a meeting of leading finance ministers or a G-8 summit.

The Federal Reserve could help to support a decline in the dollar by modifying its monetary policies to take into account the dollar's value. For example, the Fed could announce that it will not raise interest rates to prevent further dollar depreciation until the dollar reaches the new (lower) target level. The Fed could also precommit to raising interest rates modestly after the dollar has fallen to the desired target level, which would help to foster a set of self-fulfilling expectations that would encourage a significant but controlled depreciation of the dollar.

Currency market intervention and policy coordination

Direct intervention in currency markets—i.e., central banks or treasuries buying and selling foreign exchange in order to influence exchange rates—can also be helpful. It is often argued that the volume of currencies traded in today's global financial markets dwarfs the relatively meager foreign exchange reserves of most central banks. Although this is true, it does not mean that currency market intervention cannot be successful. If such intervention is coordinated with policy announcements and undertaken in a concerted fashion by several leading central banks simultaneously, exchange market intervention could help to shift exchange rates in a desired direction.²⁷ Once the dollar starts to fall, efforts by foreign countries to intervene to prevent the decline should be strongly opposed until the dollar has reached its new, lower target value.

Given the importance of foreign countries' macroeconomic policies in determining the values of their currencies relative to the dollar, it is vital for the United States to negotiate with its trading

partners for the adoption of policies that would encourage a sustained appreciation of their currencies (and hence depreciation of the dollar). For the eurozone countries, Japan, and other economically depressed areas, this means above all convincing them to revive their economies through the use of *domestic* demand stimuli and structural reforms instead of relying on low currency values and export-led expansion. Such policies would also help to boost U.S. exports and prevent a global slump. In addition, foreign countries should be persuaded that allowing a realignment of currencies with a lower dollar could be helpful for resolving trade disputes with the United States, which have been exacerbated by the anticompetitive effects of the high dollar for U.S. producers (an example of this is the recent steel controversy).²⁸

Policies for currencies with managed exchange rates

The appropriateness of pushing for countries with pegged or managed exchange rates to revalue their currencies upward depends on their economic conditions. Those countries that have recently been through financial crises and have depressed domestic economies (e.g., Argentina and Brazil) should not be pressured to revalue their currencies, and would probably be unable to do so anyway. On the other hand, those countries that are accumulating large amounts of reserves in order to artificially undervalue their currencies, such as China and the other Asian countries shown in Table 1, should be pressured to abandon such policies and allow their currencies to appreciate to market equilibrium levels.

The United States can use its political leverage to pressure such countries to stop manipulating their exchange rates. Specifically, support for future trade liberalization efforts and access to the U.S. market should be linked to the establishment of exchange rates that allow for more balanced trade relationships. It was a mistake to negotiate so many trade liberalization agreements (such as NAFTA, the WTO, and China's accession thereto) without paying attention to the need for keeping exchange rates at levels that prevent excessive trade imbalances; it is not too late to make sure that this need is addressed in future trade negotiations. The U.S. Treasury Secretary should also use his authority under the 1988 Trade Act to investigate currency manipulation by foreign governments and to negotiate with countries that are found to practice such manipulation.

Stabilizing exchange rates at realistic levels

Supporters of the strong dollar have raised concerns about the risks of lowering its value, including the potential harm to U.S. trading partners of their currencies appreciating while their economies are weak; the possible jeopardy to financial markets of a sudden dollar collapse; the potentially inflationary consequences of currency depreciation; and the need to keep attracting large capital inflows to finance the U.S. trade deficit. Although these are legitimate concerns, they are not insurmountable, and some are merely excuses for inaction rather than reasons not to act; for example, there is no reason why the United States needs a large trade deficit requiring significant capital inflows to finance it, or why foreign countries cannot stimulate their domestic economies.

The most significant fear²⁹ is that the dollar will collapse too quickly, potentially causing disastrous declines in financial markets where complicated investment positions have been created

on the expectation that the dollar will remain about at its current level (see Blustein 2003a). Such fears can be mitigated, however, if the dollar's decline is managed in an orderly fashion, as advocated earlier. This problem will only get worse if U.S. officials continue to defend an indefensible "strong dollar policy" instead of encouraging investors to adjust to a new set of more realistic expectations about the dollar's future value. The question today is no longer whether the dollar needs to fall—the currency markets have already settled that question—but rather whether the U.S. government will seek to encourage and manage that fall as part of an internationally coordinated effort to promote a global economic recovery.

Looking to the future, it is important to consider systemic reforms that could prevent a recurrence of the exchange rate misalignment that the United States has experienced in the past eight years. There have been several useful proposals for stabilizing exchange rates.³⁰ Although it is beyond the scope of this paper to endorse any particular such plan, what is most important is to target exchange rates at levels that are consistent with more balanced trade and which allow all nations to grow at respectable rates with full employment. Countries should be prevented from undervaluing their nations' products in order to grow faster and employ more workers at the expense of their trading partners. A full and sustainable recovery of the global economy depends on all countries sharing in the growth of the world market.

— *May 2003*

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Appendix

This Appendix presents the econometric estimates of the effects of the increased value of the U.S. dollar on the performance of the domestic manufacturing sector. Equations were estimated for the effects of the real value of the dollar (measured by the Fed's broad, inflation-adjusted index) on employment, hours, profits, and investment in manufacturing. Other variables (such as the GDP growth rate) were included in the regression equations to control for other factors (such as the business cycle) that also affect the dependent variables in these equations. A complete, detailed list of the variable definitions and sources is given at the end of this Appendix.

Because all the data are time series, all the variables were tested for the presence of unit roots or non-stationarity. Generally, all the variables had unit roots (i.e., were non-stationary) when measured in levels (or levels of logarithms³¹), according to Augmented Dickey Fuller (ADF) tests,³² except the GDP growth rate which was stationary.³³ However, all the variables were stationary (did not have unit roots) when measured in first differences (i.e., period-to-period changes) or logarithmic differences (i.e., proportional changes). The variables used in each equation were also tested for cointegration (in levels). For those cases in which the series had unit roots and no evidence of cointegration was found, the regression equations were run with the data measured in first differences or log differences.

Although differencing the data helps to make time series stationary, it also loses information and can therefore result in less reliable estimates. In some of the equations this was not a problem, but in the equations for the profit share and the investment rate in manufacturing, differencing the data resulted in very poor statistical fits. As a result, other methods were used to estimate these two equations, while the other equations were estimated with the data in first differences or log differences. Both of the equations that didn't fit well in differences (i.e., for the profit share and investment rate) showed evidence of cointegration among the variables, although the cointegration tests were sensitive to the specification chosen. Hence, the results of cointegration analysis are reported for these equations along with more conventional estimates in levels.³⁴

Hours and employment

Variations in hours and employment in manufacturing are well explained by a simple specification with the variables measured in first differences of natural logarithms ("log differences," which approximate percentage changes). Log differences were used for these equations for three reasons: they were stationary (all the included variables had unit roots in logs but not in log differences); they yield good fits in the regressions; and the coefficients can be interpreted as elasticities. The variables in these equations were not cointegrated, according to standard cointegration tests, and hence it was preferred to use standard regression methods with the data series in a form that was stationary (i.e., log differences).

The model assumes that demand for workers in the manufacturing sector depends primarily on two factors: GDP growth, which determines the overall demand for manufactured goods; and the real value of the dollar, which determines how profitable it is to produce manufactured goods in the United States either for export markets or in competition with imports. GDP growth affects hours and employment contemporaneously, while the value of the dollar affects them with lags of up to four quarters due to the time it takes for imports and exports to adjust to changes in the exchange rate. This model explains a relatively high percentage of the changes in manufacturing hours and employment.

The equations for hours and employment implied by this model were estimated by ordinary least squares (OLS) using quarterly data for 1980Q2 to 2002Q1 with the following results:

$$\Delta \log \text{Hours}_t = -0.01 + 1.14 \Delta \log \text{Real GDP}_t - 0.13 \Delta \log \text{Real Dollar Index} + \varepsilon_t$$

(0.001) (0.11) (0.06)

(adjusted $R^2 = 0.571$)

$$\Delta \log \text{Employment}_t = -0.01 + 0.83 \Delta \log \text{Real GDP}_t - 0.12 \Delta \log \text{Real Dollar Index} + v_t$$

(0.001) (0.09) (0.05)

(adjusted $R^2 = 0.529$)

where the “t” subscript designates the current quarter; the numbers in parentheses are standard errors; and ϵ_t and v_t are random error terms. The coefficients on $\Delta \log$ Real Dollar Index are the sums for 1-4 quarterly lags and the standard errors are for the null hypothesis that the sum of these coefficients equals zero using a Wald F-test. The constants and $\Delta \log$ Real GDP (i.e., the GDP growth rate) are significant at the 1% level in both equations; $\Delta \log$ Real Dollar Index (i.e., the percentage increase in the value of the dollar) is significant at the 5% level in both equations. The adjusted R^2 's are relative high for equations estimated in log differences. Note that, with the variables measured in log differences, the constant terms are equivalent to time trends. In these equations, the time trends can be interpreted as the effects of labor productivity growth, and thus the results show that both hours and employment in manufacturing fell by about 1% per quarter (approximately 4% per year) as a result of trend productivity growth (holding other factors constant).

Both hours and employment have elasticities of close to 1 with respect to GDP growth ($\Delta \log$ Real GDP), but hours are slightly more elastic than employment because firms are more likely to adjust hours of existing workers than to either lay off or hire workers in responses to changes in demand for their products. Similarly, the (negative) elasticity of hours with respect to the real value of the dollar is slightly higher (in absolute value) than the corresponding elasticity of employment, for the same reason. However, the real value of the dollar clearly has a negative impact on both the hours and employment of manufacturing workers and this impact is statistically significant. The coefficients of -0.13 and -0.12 for hours and employment, respectively, were used to estimate the effects of the rise in the dollar between 1995 and 2002 reported in the text above.

The profit share

The most successful way of estimating the manufacturing profit share equation was with the data measured in levels and including a lagged dependent variable to represent a partial adjustment process. This eliminated autocorrelation of the residuals, which was a problem in all other specifications tried (including using lags of the independent variables), and produced much better fits than differencing the data. With a lagged dependent variable, the estimated coefficients are estimates of the short-run effects of the other variables, i.e., how much they affect the current value of the dependent variable *relative* to its one-period lag. The effects of lags of the other independent variables are all captured in the lagged dependent variable. Estimates of the long-run effects of those variables can be obtained using the formula

$$\hat{\beta}_i \left(\frac{1}{1 - \hat{\beta}_1} \right)$$

in which $\hat{\beta}_1$ is the estimated coefficient on the lagged dependent variable and $\hat{\beta}_i$ is the estimated coefficient on the i^{th} variable ($i \neq 1$). Several different specifications (in terms of which other variables were included) were tried as sensitivity tests, i.e., to make sure that the estimated effects of the dollar index are robust. In addition, since the variables in this equation showed evidence of cointegration, the cointegrating equation from the cointegration analysis is also used as a further sensitivity test.³⁵ The results of these various estimates are given in **Table A-1**.

In the equations reported in Table A-1, the GDP growth rate is included to control for business cycle effects, and is strongly positive and significant. The most basic version of the equation is (1), in which the implied long-run effect of the dollar index on the profit share is -0.33, i.e., for every sustained 1 point rise in the real dollar index, profits fall by 0.33 percentage points of national income generated in domestic manufacturing. Equations (2) and (3) test the sensitivity of this result and find that it is robust when a time trend (2) or unit labor cost (3) is included. Including these variables, each of which is statistically significant when included separately (but not together), reduces the estimated long-run effect of the dollar index only slightly. (The equation was also estimated with the PPI for fuels as an index of energy costs, but this variable was not statistically significant.) The cointegrating equation (4) yields remarkably similar (long-run) coefficients for the dollar index and the time trend, although it yields a somewhat higher estimate of the growth rate effect (perhaps because of the omission of the lagged dependent variable from the cointegration

TABLE A-1
Estimated equations for the profit share in domestic manufacturing (quarterly data)

Equation	(1)	(2)	(3)	(4)
Method	OLS	OLS	OLS	Cointegration ^a
Sample period	1973Q1 to 2002Q1	1973Q1 to 2002Q1	1980Q1 to 2002Q1	1973Q4 to 2002Q1
Constant	5.47** (1.39)	7.08** (1.45)	11.03** (3.18)	
Profit share (lagged 1 quarter)	0.86** (0.03)	0.82** (0.04)	0.82** (0.05)	
Real dollar index	-0.044** (0.012)	-0.049** (0.011)	-0.053** (0.013)	-0.34 (0.08)
GDP growth rate	0.20** (0.03)	0.21** (0.03)	0.21** (0.04)	2.09 (0.30)
Time trend		-0.009** (0.003)		-0.06 (0.02)
Unit labor cost			-0.046* (0.023)	
Adjusted R ²	0.903	0.910	0.868	
Implied long-run coefficients on:^b				
Real dollar index	-0.33	-0.27	-0.30	-0.34
GDP growth rate	1.48	1.17	1.19	2.09
Time trend		-0.05		-0.06
Unit labor cost			-0.26	

Notes: "OLS" refers to ordinary least squares. Numbers in parentheses are standard errors. Sample periods were determined by the longest time periods for which all data (including lags) were available. Significance levels for equations (1)-(3): * 5% level, ** 1% level.

- a. This is the cointegrating equation assuming an intercept and a linear deterministic trend. The Johansen trace test indicates 1 cointegrating equation at the 5% level and the maximum eigenvalue test indicates 1 cointegrating equation at both the 5% and 1% levels. Significance levels for individual coefficients are not reported.
- b. See text for explanation of long-run coefficients in equations (1)-(3). The cointegrating equation (4) does not distinguish short-run and long-run coefficients.

test). Based on these equations, I take the value of -0.30 for the long-run dollar effect from equation (3) as a mid-range estimate and use that to calculate the quantitative impact of the dollar's rise on manufacturing profits discussed in the text.

Investment

For the investment rate (i.e., capital expenditures as a percentage of the capital stock at the end of the previous period, both measured at current costs) in manufacturing, the best fits were obtained using the variables in levels and with certain lags. Lags are common in investment models because of the time it takes for changes in observed economic conditions to affect firms' desired investment plans, and then for firms to design and implement those plans (e.g., to order and install new equipment or to construct new facilities). The most robust variable for explaining investment is the growth rate, representing business cycle effects

TABLE A-2
Estimated equations for the manufacturing investment rate (annual data)

Equation	(1)	(2)	(3)	(4)
Method	OLS	OLS	2SLS ^a	Cointegration ^b
Sample period	1975-2000	1975-2000	1975-2000	1977-2000
Constant	5.15** (1.17)	11.42** (2.35)	11.00** (2.64)	
Profit share	0.30** (0.06)	0.19** (0.06)	0.20** (0.07)	0.08 (0.05)
GDP growth rate (lagged one and two years) ^c	0.24* (0.10)	0.30* (0.09)	0.30** (0.09)	0.71 ^d (0.13)
Real interest rate ^e	0.10 (0.07)			
Real dollar index (lagged one year)		-0.045* (0.019)	-0.042* (0.020)	-0.115 (0.016)
Adjusted R^2	0.517	0.587	0.586	

Notes: "OLS" means ordinary least squares; "2SLS" means two-stage least squares. Numbers in parentheses are standard errors. Sample periods were determined by the longest time periods for which all data (including lags) were available. Significance levels for equations (1)-(3): * 5% level, ** 1% level.

- a. The profit share was treated as endogenous; all other RHS variables were treated as exogenous or predetermined (i.e., lagged variables). The instruments used in the first stage regression were the GDP growth rate (0 to 2 lags), the real dollar index (0 to 1 lag), the profit share (1 lag), a time trend, and a constant.
- b. This is the cointegrating equation assuming an intercept and a linear deterministic trend (but no time trend in the cointegrating equation). The Johansen trace test indicates 1 cointegrating equation at the 1% level and 2 cointegrating equations at the 5% level; the maximum eigenvalue test indicates 2 cointegrating equations at the 5% and no cointegrating equations at the 1% level. Significance levels for individual coefficients are not reported.
- c. Coefficients are for the sum of the coefficients on the GDP growth rate lagged one and two years, except as indicated; standard errors are for the null hypothesis that the sum equals zero using a Wald F -test.
- d. One annual lag only.
- e. Prime rate charged by banks minus the inflation rate as measured by the percentage change in the GDP chain-type price index. See text and endnote 31 for discussion of alternative measures.

(known in the investment function literature as the "accelerator effect"). Many theories emphasize negative effects of (real) interest rates on investment, but empirical evidence on interest rate effects is mixed at best. Many empirical studies have found interest rate effects (or a broader measure known as the "cost of capital") to be small, statistically insignificant or to have the "wrong" sign (positive).³⁶

Also, much research has shown the prevalence of financial constraints on investment, which can prevent firms from making otherwise desired capital expenditures (the classic study is Fazzari, Hubbard, and Peterson 1988). Such financial constraints are usually represented in econometric tests by cash flow or other profit measures; in the present analysis, I use the profit share. Financial constraints often operate contemporaneously rather than with lags, since they can force firms to cut back on already planned investment projects. What is innovative in the present analysis is the inclusion of the Fed's real broad dollar index to test for direct (negative) exchange rate effects on investment. Only a few previous studies have tested for (and found) such effects (see Worthington 1991, Goldberg 1993, and Campa and Goldberg 1995), and none have estimated those effects for the period of dollar appreciation since 1995.

Table A-2 (above) reports the results of several different variants of an investment equation for the U.S. manufacturing sector. Annual data had to be used for the investment equation because the investment

and capital stock data series for manufacturing are only available on an annual basis. Given the use of annual data, the number of lags that can be included is necessarily limited. The sample ends in 2000 because the investment and capital stock data for manufacturing for 2001 were not yet available at the time when these regressions were run. As noted earlier, estimates of the investment equation in first differences yielded very poor fits and therefore the equation was estimated in levels.

Equation (1) in Table A-2 is a baseline investment equation without the dollar index included. The profit share and growth rate (accelerator) variables are positive and significant, as expected, but the real interest rate variable has the wrong sign (positive) and is insignificant (and this was also true using several alternative specifications of the real interest rate).³⁷ Hence, the real interest rate was omitted from the other equations. Equation (2) shows the effects of including the real dollar index (but omitting the real interest rate). The real dollar index is negative and significant at the 5% level, while the coefficients on the other variables change only slightly and are still significant at the 1% level. This is strong evidence that the dollar's value has a negative effect on manufacturing investment in the United States, after controlling for other factors.

Certain econometric issues lead to the estimation of alternative equations (3) and (4) as sensitivity tests. Because the profit share is an endogenous variable, and is a function of other right-hand side variables,³⁸ it could be argued that equation (2) suffers from an identification (simultaneity) problem. To remedy this, equation (2) is re-estimated with two-stage least squares (2SLS), treating the profit share as endogenous, and using as instruments all the exogenous variables in the investment function plus the exogenous variables in equation (2) from Table A-1 above. The resulting estimates (equation (3) in Table A-2) are remarkably similar to those in the OLS equation (2), and the real dollar index is still negative and significant at the 5% level, lending further support to the hypothesis of significant direct negative effects of the dollar's value on manufacturing investment.³⁹ Equation (3) is used to estimate the effects of the rise in the dollar on investment between 1995 and 2002 as reported in the text.

Finally, the fact that the variables in this equation have unit roots suggests the need for a cointegration test, which shows evidence of at least one significant cointegrating vector and possibly two such vectors (see notes to Table A-2 for details).⁴⁰ The cointegrating equation (assuming only one cointegrating vector) is presented as equation (4) in this table. The coefficients differ somewhat in magnitude from those in equations (2) and (3), but have the same signs, and if anything the direct negative effect of the dollar on manufacturing investment is estimated to be even greater in the cointegrating equation than in the OLS and 2SLS estimates.

Data definitions and sources

This section gives the exact definitions and sources for the data series used in the preceding statistical analysis.⁴¹ Abbreviations and web sites (home pages) for the major data sources are as follows:

U.S. Department of Commerce, Bureau of Economic Analysis (BEA); www.bea.gov.

U.S. Department of Labor, Bureau of Labor Statistics (BLS); www.bls.gov.

U.S. Board of Governors of the Federal Reserve System (Federal Reserve Board or FRB); www.federalreserve.gov.

Hours of labor in manufacturing: index (1992 = 100), BLS, quarterly data were downloaded from www.bls.gov/lpc/home.htm under Major Sector Productivity and Costs – Create customized tables.

Employment of labor in manufacturing: index (1992 = 100), BLS, quarterly data were downloaded from www.bls.gov/lpc/home.htm under Major Sector Productivity and Costs – Create customized tables.

Real GDP and growth rate of GDP: gross domestic product in chained 1996 prices, BEA, National Income and Product Accounts (NIPAs), Table 1.2. Growth rates (percentage changes) were calculated by the author. Annual and quarterly data were downloaded from www.bea.gov/nea/dn/nipaweb/index.asp (quarterly data are expressed at annual rates).

Profit share in manufacturing: profit income was calculated as a percentage of national income generated in the manufacturing sector; BEA, National Income and Product Accounts (NIPAs), Tables 6.1B and 6.1C for national income by sector, and Tables 6.16B and 6.16C for profits by sector. Annual and quarterly data were downloaded from www.bea.gov/nea/dn/nipaweb/index.asp.⁴²

Real dollar index: trade-weighted index of the real (inflation-adjusted) value of the U.S. dollar; “broad” index includes both “major” currencies and currencies of “other important trading partners, March 1973 = 100; FRB, Federal Reserve Statistical Release H.10, Foreign Exchange Rates, Summary Measures of the Foreign Exchange Value of the Dollar. Monthly data for the real broad index were downloaded from <http://www.federalreserve.gov/releases/h10/Summary/> and converted to quarterly or annual time series as needed by the author.

Unit labor costs in manufacturing: index (1992 = 100), BLS, quarterly data were downloaded from www.bls.gov/lpc/home.htm under Major Sector Productivity and Costs – Create customized tables.

Investment rate in manufacturing: annual investment as a percentage of the capital stock at the end of the previous year, calculated by the author based on data from BEA, Fixed Asset Tables: investment from Table 4.7, “Historical-Cost Investment in Nonresidential Fixed Assets by Industry Group and Legal Form of Organization”; yearend capital stocks from Table 4.1, “Current-Cost Net Stock of Nonresidential Fixed Assets by Industry Group and Legal Form of Organization.” Annual data were downloaded from www.bea.gov/bea/dn/faweb/AllFATables.asp.

Real interest rate: prime interest rate minus the inflation rate (measured by the annual percentage rate of change in the GDP chain-type price index). Prime interest rate from FRB, Federal Reserve Statistical Release H.15, Selected Interest Rates; monthly data for “bank prime loan rate” downloaded from <http://www.federalreserve.gov/releases/h15/data.htm> and converted to annual averages by the author. The GDP chain-type price index was calculated by the author by dividing nominal GDP (BEA, NIPAs, Table 1.1) by “real” GDP at chained 1996 prices (BEA, NIPAs, Table 1.2); annual data were downloaded from www.bea.gov/bea/dn/nipaweb/index.asp.

Endnotes

1. This and all other measures of the value of the dollar discussed in this paper are author's calculations based on the "real" (price-adjusted) data from Federal Reserve Statistical Release H.10, Foreign Exchange Rates, downloaded from www.federalreserve.gov/releases/h10/Summary/.
2. The other "major" currencies are the Canadian and Australian dollars, the Swiss franc, and the Swedish krona.
3. For earlier analyses by this author of the dollar's overvaluation in the late 1990s and its consequences, see Blecker (1999a, 1999c).
4. Note that the "broad" dollar index in Figure 1 is a trade-weighted average of the major currency and other currency indexes shown in Figure 2.
5. Unlike the other currencies listed here, the Taiwanese dollar was not subject to a speculative attack. However, Taiwan devalued its currency in late 1997 to offset the competitive losses caused by the collapse of the Thai baht, thereby possibly precipitating some of the other Asian currency depreciations such as Korea's. I am indebted to C. Fred Bergsten for calling my attention to this point.
6. According to U.S. Federal Reserve Statistical Release H.10, Foreign Exchange Rates, Currency Weights (available online at www.federalreserve.gov/releases/h10/Weights/), the major currency countries currently have a total weight of 54.6% in the broad dollar index while the "other important trading partners" account for the other 45.4%, based on the composition of total U.S. trade with the included countries for 2001. Including a number of additional, small developing countries that are excluded from the Fed's "other important trading partners" group, total "other" (non-major) countries accounted for 47.9% of overall U.S. trade and 49.6% of U.S. imports in 2001 (U.S. Census Bureau 2002, Exhibit 13).
7. According to the data in Bach (2003, Table 2), the industrialized countries (which issue the "major" currencies) accounted for 43.9% of the U.S. trade deficit for goods in 2002, while the other countries (developing and transition economies, including OPEC members) accounted for 56.1%.
8. The data shown in Table 1 are the series for "total reserves minus gold" from the International Monetary Fund (IMF), *International Financial Statistics* (online version). These are total holdings of foreign currencies in each country shown, and do not distinguish between "official" reserves held by central banks (and presumably available to be used for currency manipulation) and private reserves held by commercial banks. The IMF does not make public the separate data for official and private reserve holdings, nor does it reveal the currency composition of the reserves. Nevertheless, most of these total reserves are likely to be official reserves of U.S. dollars, especially in the Asian countries, and they are the best indicator available of the degree to which those countries are hoarding foreign currencies in an effort to keep their own currencies undervalued.
9. The euro area countries were able to reduce their holdings of currency reserves after the switch to a single currency in 1999 because they would no longer have to intervene to maintain their parities with each other within the former Exchange Rate Mechanism (ERM).
10. See the evidence cited in Blecker (1999b).
11. For an analysis that supports this conclusion and interesting policy suggestions for inducing Japan and China to abandon their currency undervaluation, see Preeg (2003).
12. Japan, China, and Taiwan alone accounted for 39% of the U.S. trade deficit for goods in 2002, according to the data from Table 2 in Bach (2003). Hong Kong and Singapore had small surpluses with the United States, but only equivalent to 0.9% of the U.S. deficit. Adding South Korea and also netting out Hong Kong and Singapore, these East Asian countries together accounted for 40.9% of the U.S. trade deficit in 2002.
13. In 2001, manufactured goods accounted for about 80% of U.S. goods exports and 83% of U.S. goods imports. In relation to trade in goods and services combined, manufacturing accounted for 58% of total exports and 70% of total imports. See U.S. Census Bureau (2002), Exhibits 1 and 14.
14. The slowdown in U.S. export growth in the late 1980s was also exacerbated by the growth slowdown in many U.S. export markets discussed in the previous section.
15. See endnote 13 above.
16. See GDP data available at www.bea.gov and unemployment rate data available from www.bls.gov/cps/home.htm.

17. See the Appendix for details on these estimates.
18. The numbers of employees in manufacturing in this paragraph are taken from U.S. Department of Labor, Bureau of Labor Statistics, *Industry at a Glance: Manufacturing, National Employment, Hours, and Earnings*, series ees30000001, All employees (thousands) in manufacturing (SIC codes 20-39); downloaded from the Internet at http://www.bls.gov/iag2/iag.manufacturing_t.htm by clicking on “Back Data” for “Payroll Employment.”
19. Of course, workers who lose jobs in manufacturing do not necessarily become permanently unemployed; they may find jobs (usually at lower wages and with less benefits) in other sectors such as services depending on the overall state of the economy. Needless to say, this was easier during the boom years of the late 1990s than the recession and slow-growth years of the early 2000s.
20. Shifting production to other countries can be a solution for some companies, but does not rescue the profitability of domestic export production.
21. See the Appendix for the econometric analysis underlying this estimate.
22. In this part of the discussion, the terms “capital expenditures” and “investment” (in new plants, equipment, and software) are used interchangeably.
23. The first effect of a high dollar in reducing planned investment is felt with a lag, which the estimates in the Appendix suggest is about one year. In contrast, the second (indirect) effect that operates through reduced profits is usually felt within the same year, according to those estimates.
24. This estimate is based on equation (3) in Table A-2 in the Appendix, plus the first stage regression for the profit share in manufacturing, which is an endogenous variable in the two-stage least squares procedure.
25. At his confirmation hearing before the Senate Finance Committee on January 28, 2003, then Treasury Secretary-nominee John Snow testified that “I favor a strong dollar.” Barely five weeks later, on March 4, the newly confirmed Treasury Secretary kicked off a firestorm of controversy with the candid admission that he didn’t “see anything troubling” with a decline in the dollar occurring around that time. By the next day, he had to backtrack, stating “let me reiterate my support for the strong dollar.” See press reports in Associated Press (2003), Agence France Press (2003), Hagenbaugh (2003), Hill (2003), and Swann (2003).
26. While attending a G-8 meeting of finance ministers in France in mid-May, Snow was quoted as saying that the dollar’s fall versus the euro was only “a fairly modest realignment in currencies,” a statement that was interpreted by financial markets as indicating acceptance of a weaker dollar. To confuse matters, however, Snow and other U.S. officials insist that there is no change in the administration’s desire for a strong dollar, but they have redefined a “strong dollar” so that the term no longer refers to the dollar’s exchange rate with other currencies—the new meaning is that the dollar should be “a good medium of exchange” that “people are willing to hold” (Blustein 2003b).
27. Exchange market intervention is of limited power when it seeks to oppose rather than to support market fundamentals or is inconsistent with macro policies, but intervention in support of market fundamentals and consistent with stated policy objectives can help to shift market expectations and thus becomes more effective than one might expect from the limited amounts of foreign exchange that the authorities typically buy or sell. Since market fundamentals indicate that the dollar is overvalued and needs to fall, intervention in support of that objective should be effective. As one group of researchers concluded, “even weak signals, such as those provided by sterilized interventions, may be sufficient to coordinate agents’ expectations, induce them to converge on a particular model of the economy, and pick a value of the exchange rate that is not too far from that targeted by the authorities” (Catte, Galli, and Rebecchini, 1992, p. 20). See also Dominguez and Frankel (1993) and Dominguez (2003).
28. See Blecker (2002) for an analysis of how the overvalued dollar contributed to the U.S. steel import crisis.
29. Another serious issue is the fear that dollar depreciation would spark increased inflation by raising domestic prices of imported goods. Inflation fears should be mitigated, however, if the dollar is brought down soon, while inflation is already tame due to weak demand conditions. Indeed, many economists today are more worried about possible deflation rather than inflation. Also, because goods imports account for a relatively small share of U.S. GDP (about 12%), a rise in import prices would have a relatively small impact on overall, average inflation. In the most recent instance of significant dollar depreciation, the sharp drop in the dollar in 1985-87 had no perceptible effect on U.S. inflation. Inflation rates as measured by the percentage change in the GDP chain-type price index (from U.S. Department of Commerce 2002) were 3.7% in 1984 (when the dollar was still rising), 3.2% in 1985 (when the dollar began falling), 2.2% in 1986, 3.0% in 1987, and 3.4% in 1988 (a year after the dollar bottomed out). Thus, inflation actually *fell* while the dollar was falling most rapidly in 1985-87.

30. See, for example, Williamson and Miller (1987), Williamson (1994), Davidson (1996), Grieve Smith (2001, chap. 5), and Weller and Singleton (2002). See also the discussion in Blecker (1999b, pp. 125-43).
31. “Logarithms” and “logs” always refer to natural logarithms (base- e) in this study.
32. The ADF tests were run in various specifications (i.e., with or without intercepts and trends and with varying numbers of lags) and the results described here were entirely robust.
33. The GDP growth rate is really a differenced variable (i.e., the proportional rate of change in real GDP); real GDP itself has a unit root and therefore it is not surprising that its rate of change is stationary.
34. It should be recalled that conventional unit root tests have low power to reject the null hypothesis of a unit root in relatively short time series, i.e., a few decades or less. Some of the variables that appear to have unit roots in the present analysis are ratios or rates that might be expected to be stationary over longer time periods (e.g., the profit share, the investment rate, and—if one believes in the hypothesis of long-run relative purchasing power parity—the real value of the dollar). These variables may appear to be non-stationary only because of the short length of the available data. Perhaps it is not a coincidence that the two equations that yielded poor fits in differences were the equations for two such variables, i.e., the profit share and investment rate, and therefore running these equations in levels may be appropriate after all.
35. A lagged dependent variable was not included in the cointegration estimates, which do not distinguish between short-run and long-run effects. Time-series econometric purists might object to this use of cointegration, because the variables included are integrated of different orders—the GDP growth rate is $I(0)$ (stationary) while the other variables are all $I(1)$ (have unit roots). However, other practitioners believe that variables should be expressed in whatever units make sense theoretically, and in this case it makes sense to include the growth rate of GDP (rather than its level) since all the other variables are measured as rates or percentages. In any event, the cointegrating equation is included here mainly as a sensitivity test, to show that the results of the other three equations are robust. Note especially that the coefficients on the real dollar index and the time trend from equation (4) in Table A-1 are very close to the implied long-run coefficients from equation (2), although the estimated growth effect is greater in equation (4). Since our main interest here is in the coefficient on the real dollar index, this sensitivity test confirms that our other estimates are of reasonable orders of magnitude.
36. See, for example, Fazzari (1993), Bosworth (1993), and Chirinko (1993).
37. The real interest rate used here is the prime rate minus the current inflation rate. An alternative measure, the prime rate minus the one-year lagged inflation rate (to proxy for expected inflation) was also positive and insignificant. Lags of both measures were also tried and were positive and insignificant. The real interest rate, by any of these measures, was also insignificant when the dollar index was included in the equation. When the real interest rate is omitted from equation (1), the other coefficients remain virtually unchanged.
38. Obviously, from the estimates in Table A-1, the profit share is a function of the (current) real dollar index. Less obviously, because of the lagged dependent variable in the profit share function, the profit share is also a function of lagged GDP growth rates.
39. The statistical significance of the dollar index was sensitive to the choice of instruments for the profit share. Specifically, when unit labor cost is included as an instrument, the dollar index still has a negative sign but the coefficient is smaller and insignificant. However, a better fit (as measured by adjusted R^2) was obtained using the time trend instead of unit labor cost. See the discussion of the profit share equations in Table A-1 for more on these variables, and note that the time trend was significant in both the OLS and cointegration estimates.
40. One could object to this cointegration test on the same ground as for the profit share equation, i.e., because the GDP growth rate is stationary while the other variables have unit roots. This objection can be answered in the same way as for the profit share equation (see endnote 36 above), i.e., that the variables should be measured in units that make sense theoretically. In regard to the investment equation, theory implies that investment should be a function of the growth rate of GDP (the so-called “accelerator effect”) rather than the level of GDP, and again all variables in this equation are expressed as ratios or percentages. Also, one might question whether cointegration procedures are valid with such a small sample (only 24 annual observations could be used for this procedure, because quarterly data were not available). However, the validity of such time-series procedures depends more on the length of the time period (number of years) rather than the frequency (number of observations), and 24 years—while less than ideal—is on the borderline of an acceptable period for testing cointegration. Again (as in Table A-1), the cointegrating equation in Table A-2 is used mainly as a sensitivity test for the other estimates, not to test cointegration *per se*.

41. Only the data series used in the econometric analysis in the Appendix are included here; definitions and sources for other data series are given in the appropriate parts of the text, tables, figures, and endnotes.

42. This and other data series from the National Income and Product Accounts were taken from the BEA statistical release of June 27, 2002 (which included “final” estimates for first quarter 2002). Subsequent revisions to these data were not available in time to be incorporated into the econometrics, but were used to revise the data discussed in the text and shown in the tables and figures.

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