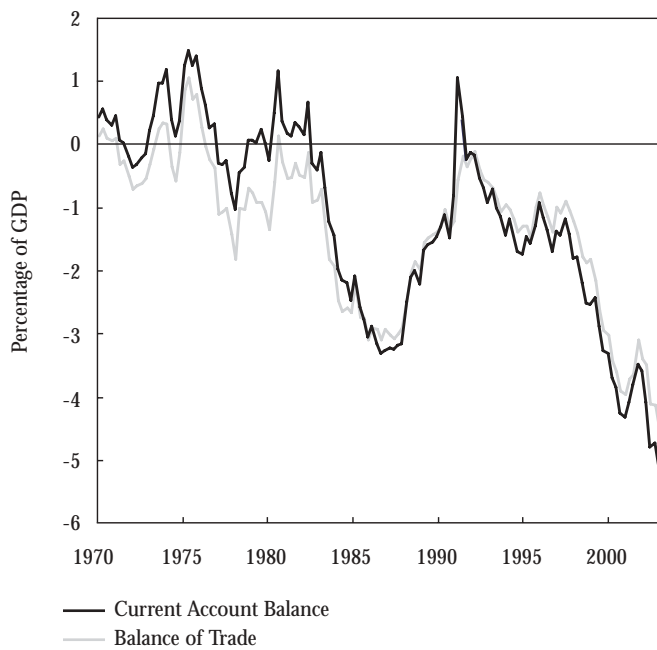# IS INTERNATIONAL GROWTH THE WAY OUT OF U.S. CURRENT ACCOUNT DEFICITS? A NOTE OF CAUTION

ANWAR M. SHAIKH, GENNARO ZEZZA, AND CLAUDIO H. DOS SANTOS

The current account deficit of the United States has been growing steadily as a share of GDP for more than a decade. It is now at an all-time high, over 5 percent of GDP (see Figure 1). This steady deterioration has been greeted with an increasing amount of concern (U.S Trade Deficit Review Commission 2000; Brookings Papers 2001; Godley 2001; Mann 2002). At The Levy Economics Institute, we have long argued that this burgeoning deficit is unsustainable. A current account deficit implies a growing external debt, which in turn implies a continuing shift in net income received from abroad (net interest and dividend flows) in favor of foreigners. We have also noted that with the private sector headed toward balance, a growing current account deficit implies a corresponding growing "twin" deficit for the government sector (Papadimitriou, et al 2002; Godley 2003). This latter scenario has already come to pass: the latest figures show that the general government deficit rose to an annual rate of more than 4 percent of GDP in the first quarter of 2003 and will certainly rise even more in the near future, since the federal deficit alone is officially projected to reach 4 percent by the end of this fiscal year (CBO 2003).

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Figure 1 U.S. Current Account and Trade Balances

Current Account Balance
Balance of Trade

Source: BEA

THE PRINCIPAL FORCE behind the deterioration of the current account deficit is the balance of trade, as is evident in Figure 1. Identifying the determinants of the balance of trade is therefore crucial to any effort at understanding the trends of the current account.

In analyzing the trade balance, economists customarily explain imports by their prices relative to those of domestic goods, and by domestic income; and exports by their relative price in foreign countries, and by foreign income. In either case, a rise in the income of the country purchasing the goods tends to increase the quantity of the goods demanded, while a rise in the relative price of goods tends to decrease their quantity demanded, other things being equal. For this reason, when a country grows faster than its trading partners, its imports tend to expand more rapidly than its exports, and its trade balance deteriorates. The same thing happens when its real exchange rate appreciates (i.e., when its domestic price level in foreign currency rises relative to the price level of its trading partners), because this tends to make the relative price of its exports rise and that of its imports fall.

For the purposes of The Levy Economics Institute's macro-economic model, it is necessary to have quarterly data on all of these variables, in sufficient detail to be able to construct useful sectoral aggregates. At any particular level of aggregation, the requirements are that any measure of foreign income should provide good estimates of the impact on U.S. exports of changes in foreign incomes and in relative export prices, based on parameters that are sufficiently stable to be useful for medium-term projections.

And therein lies the difficulty: for while good quarterly data is widely available for U.S. income and prices, similar quarterly data for U.S. trading partners is much harder to come by. With respect to income measures, some authors, such as Mann (2002, 137–38), have therefore relied on annual measures of

the aggregate real GDP of the "rest of the world"[1] (i.e., all countries except the United States). Others, such as Marquez and Ericsson (1993), construct annual measures of the aggregate real GDP of a small number of certain "important" and/or "representative" U.S. trade partners. Most recently, Chinn (2003, pp. 6, 33) has managed to avail himself of quarterly estimates of an export-weighted measure of the aggregate real GDP of "major" trading partners, albeit from unpublished sources.[2]

The trouble is that rest-of-the-world measures are likely to be too broad, since they encompass many countries whose trade with the United States is negligible. On the other hand, "major" trading-partner measures may be too narrow, since they leave out some rapidly growing trading partners (see the next section).

Ideally, one would like to have quarterly measures encompassing a large sample of U.S. trading partners. Such measures might be direct (unweighted) sums or export-weighted ones, and they might be at different levels of aggregation. In the Levy Institute macro model, we previously utilized an aggregate quarterly measure of U.S. trading-partner real GDP. This measure was initially developed in the late 1970s and successively extended since then.[3] But the quality and coverage of available data has greatly improved since the initial construction of this measure, and many underlying variables have been substantially revised even for earlier years.

In this policy note, we report on the construction of a quarterly database for U.S. trading partners, using the most recently available data. This allows us to develop several new measures, some of which we discuss here. In particular, we first present our new quarterly measures of U.S. trading-partner real GDP. The trading partners in question account for 90 percent of U.S. exports, and we construct both direct and export-weighted sums of their real GDPs. In addition, we look at various subsets of these, including what the Federal Reserve calls "major-currency" and "other important" trading partners. The Federal Reserve constructs separate effective exchange rates for these latter two groups, and we will see that they generally behave quite differently along a variety of dimensions.

In what follows, we first outline our sources and methods and then present the data. Further details, along with access to the data itself, are available in Levy Economics Institute Working Paper no. 387.

Constructing Measures of U.S. Trading-Partner GDP

Our point of departure is the Federal Reserve trade-weighted "Broad Index of the Foreign Exchange Value of the Dollar,"[4] which is built around the 36 trading partners[5] of the United States that account for close to 90 percent of its foreign trade.[6] The Federal Reserve also groups them into two sets that might be called "major-currency trading partners" and "other important trading partners," for which it provides the following two sub-indexes of its "broad" exchange rate index:

Major-Currency Trading Partners

Australia, Austria, Belgium/Luxembourg, Canada, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, Portugal, Spain, Sweden, Switzerland, and the United Kingdom

Other Important Trading Partners

Argentina, Brazil, Chile, China, Colombia, Hong Kong, India, Indonesia, Israel, Malaysia, Mexico, Philippines, Russia, Saudi Arabia, Singapore, South Korea, Taiwan, Thailand, and Venezuela

The basic quarterly data for the individual countries were derived from the International Monetary Fund's (IMF) database on "International Financial Statistics" (IFS), available on CD-ROM. The real GDPs of individual countries were all put in the same units (billions of national currency), seasonally adjusted, and annualized (so that the quarterly measures represent the annual equivalent), based in 1995 constant prices, and converted to 1995 U.S. constant-dollars using country-specific (market or official) exchange rates for that particular year. Many series were incomplete, and these had to be modified and/or complemented in various manners using a variety of sources. Our complete data set then encompassed consistent real GDP figures for each of the 36 countries,[7] from the first quarter of 1970 to the last quarter of 2002.[8]

This data set has many possible uses. Here, we present data on two basic aggregates (the direct and export-share-weighted sums of these real GDPs),[9] and on various subdivisions of these aggregates, including the two identified as "major" and "other important" trading partners, for which the Federal Reserve provides effective exchange rates. In the case of export-weighted measures, we created various fixed-weight indexes, using export shares from 1971, 1981, 1991, and 2001, respectively. We also created variable-weight measures using annual export shares. Lastly, we created a measure using periodically adjusted fixed weights, by splicing the various fixed-weight series together in each relevant year (e.g., splicing the 1981 series

to the 1971 series in the year 1981, etc.). It is this latter measure we present here, since it represents a balance between the other two types. The single year fixed-weight measures fail to take changing trade patterns into account. On the other hand, in the case of the variable-weight measures, the fluctuations in quarterly export shares used as weights add unnecessary volatility to the overall series.

U.S. Exports and Trading-Partner Real GDP

Figure 2 depicts quarterly U.S. real GDP and two new aggregate measures of the real GDP of U.S. trading partners, expressed as the logs of the actual values.[10] As it turns out, the direct sum of U.S. trading partners together represents a "region" whose real GDP is roughly two and a half times as large as that of the United States. The weighted sum, on the other hand, is higher, because many of the richest trading partners have high weights.[11] Figure 3 depicts the trading-partner GDPs, relative to that of the United States. We can see that both measures rise relative to U.S. GDP from 1970–82, stagnate from 1982–91, and fall after 1992. This last pattern has been widely cited as an important factor in the steady deterioration of the U.S. trade balance since 1992 (Council of Economic Advisers 2003, 62; Mann 2002, 137–38).

Our measures can also be compared to others used in similar investigations, such as the "rest-of-the-world" (ROW) real GDP calculated from annual World Bank data (the latter being available only up to 2000).[12] Figure 4 displays the ratios of our two measures (converted to annual observations) to that of the ROW real GDP. Not surprisingly, our direct sum is very similar to the ROW measure,[13] since the latter is itself simply a broader direct sum. But our measure has two advantages: it is quarterly, and it is consistent with the Federal Reserve exchange rate index and its subdivisions.

Figure 2 U.S. and Trading-Partner Real GDPs

- U.S. Trading-Partner Real GDPs (Export Weighted)
- U.S. Trading-Partner Real GDPs (Direct Sums)
- U.S. Real GDP
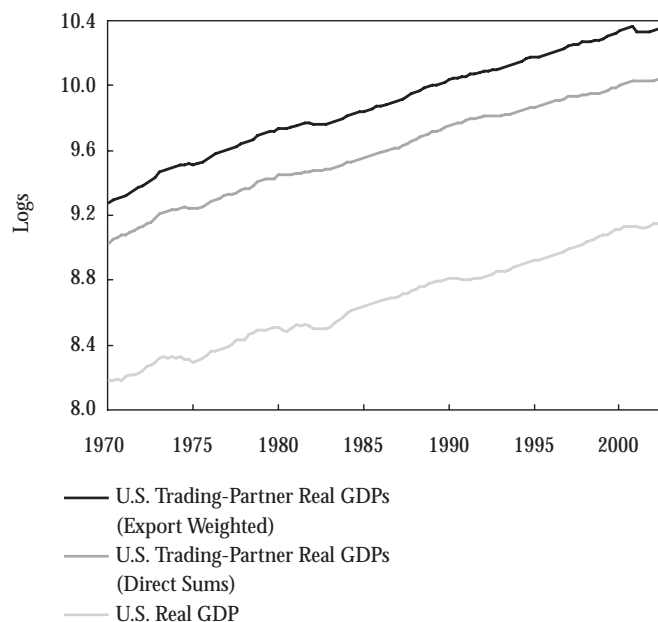
Sources: BEA and authors' calculations

Figure 3 U.S. Trading-Partner Real GDPs Relative to U.S. Real GDP

- Export Weighted
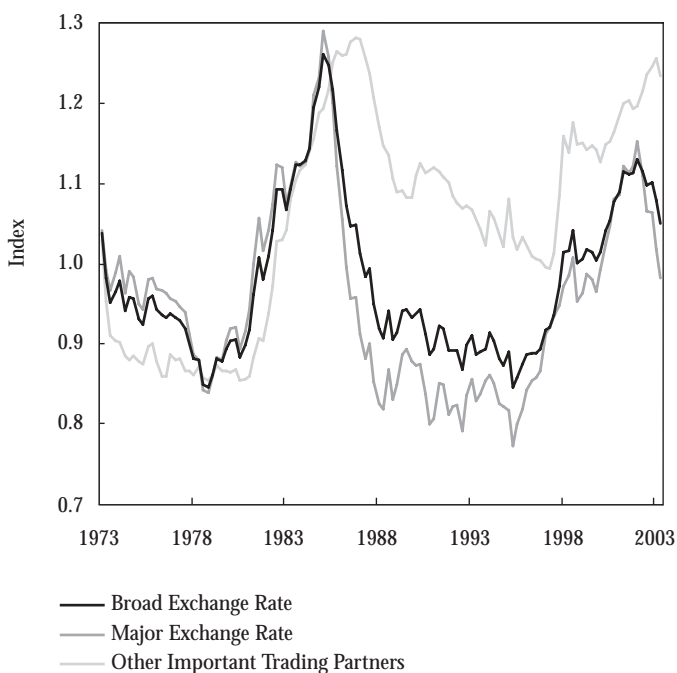- Direct Sum
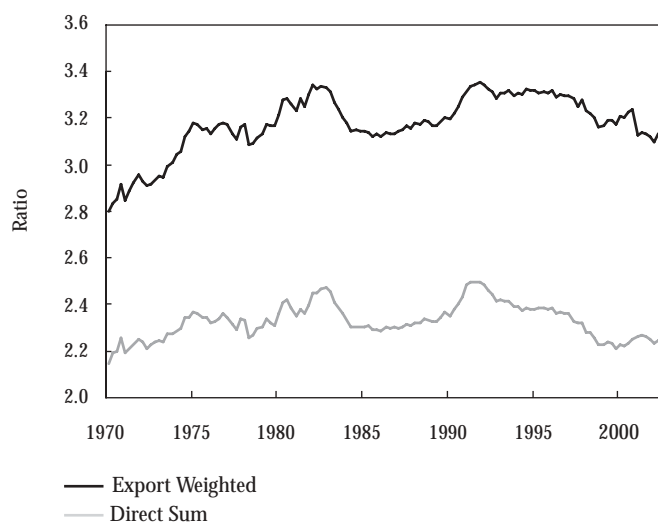
Sources: BEA and authors' calculations

Figure 4 U.S. and Trading-Partner Real GDPs Relative to ROW

Export-Weighted Sum/ROW Real GDP
Direct Sum/ROW Real GDP
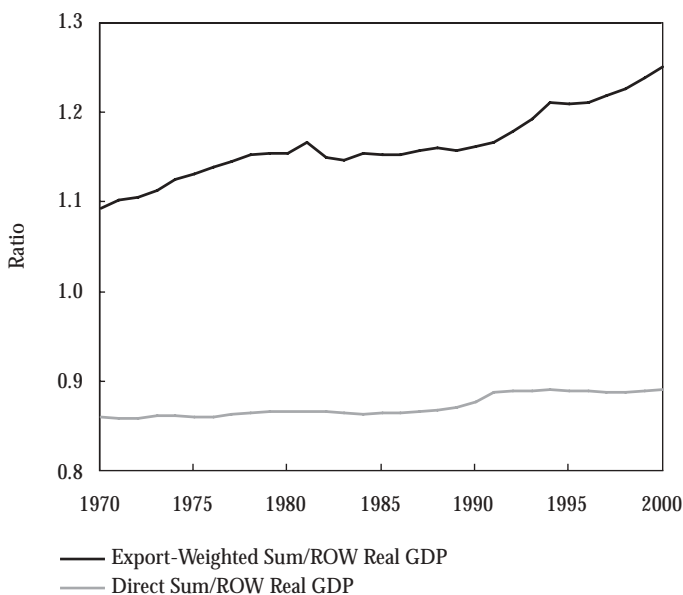
Sources: World Bank and authors' calculations

Figure 5 Federal Reserve Real Effective Exchange Rate Indexes

Broad Exchange Rate
Major Exchange Rate
Other Important Trading Partners

Source: Federal Reserve Board

More striking is the fact that the export-weighted GDP measure rose steadily relative to the ROW one. This implies that, in comparison to the direct sum and ROW measures, the export-weighted measure would tend to yield lower estimates of the income elasticities of exports.

As noted previously, our point of departure is the Federal Reserve's own disaggregation of its "broad" effective exchange rate index into two groups: major trading partners and other important trading partners. In the former group stand the countries in the euro area, Canada, the United Kingdom, Australia, Sweden, Switzerland, and Japan; while the latter group consists of Russia, Indonesia, and all Latin American and Asian countries mentioned above. The exchange rate components are depicted in Figure 5, taken from the Federal Reserve (FRB 2003). We see here that until 1985 the two exchange rate indexes behaved similarly, but after that there is a marked difference between them. From 1985–95 the U.S. real effective exchange rate depreciated far more with respect to its "major" trading partners, and subsequently it appreciated far more relative to them. The differences are even more striking in 2002, during which the U.S. real exchange rate fell by 14.7 percent relative to its major trading partners, but rose by 3 percent relative to the others. It is because of these opposite trends that the "broad" real exchange rate declined by only 7 percent since its peak in the first quarter of 2002.

The differential behavior of exchange rate components suggests that it might be useful to look at a similar decomposition of trading-partner GDP. Figure 6 breaks down both our aggregate measures into the same components as the exchange rate. These are shown as logs of the values of the respective GDPs. This allows us to see that the "other" trading partners measures generally rise faster than the "major" trading partner measures.

Figure 7 displays the same measures relative to U.S. real GDP. Broadly speaking, the major trading partners grew as fast as
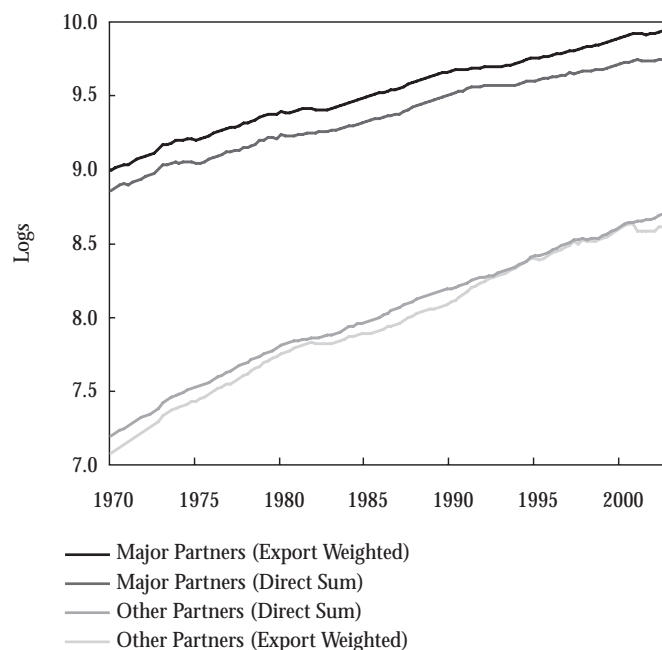
the United States up until 1992, but then lost ground there-after. On the other hand, the other important trading part-ners grew more rapidly than the United States throughout. Other things being equal, this would imply that major trading-partner growth had a neutral impact on the progress of the U.S. balance of trade until 1992, and a *negative* one there-after.[14] Conversely, the consistently more rapid growth of the other trading partners should have had a *positive* impact on the U.S. balance of trade all along, other things being equal.

So from 1992 to the present, the growth effect should have worsened the U.S. balance of trade with its major-currency partners, but should have improved its balance of trade with its other important trading partners. The overall effect of growth is therefore unclear. At the same time, we have already seen that, except for 2002, the U.S. real exchange rates with respect to the two groups behaved similarly, first depreciating in the early 1990s and then appreciating sharply thereafter. Thus the real exchange rate effect should have improved the U.S. balance of trade until the mid 1990s and worsened it thereafter.

We see therefore that splitting the trading partners into two groups indicates that the growth effect acts in opposite direc-tions across groups, while the real exchange rate effect acts in opposite directions across time. It is therefore not obvious, a fortiori, whether either effect can be taken as dominant in the overall evolution of the U.S. balance of trade.
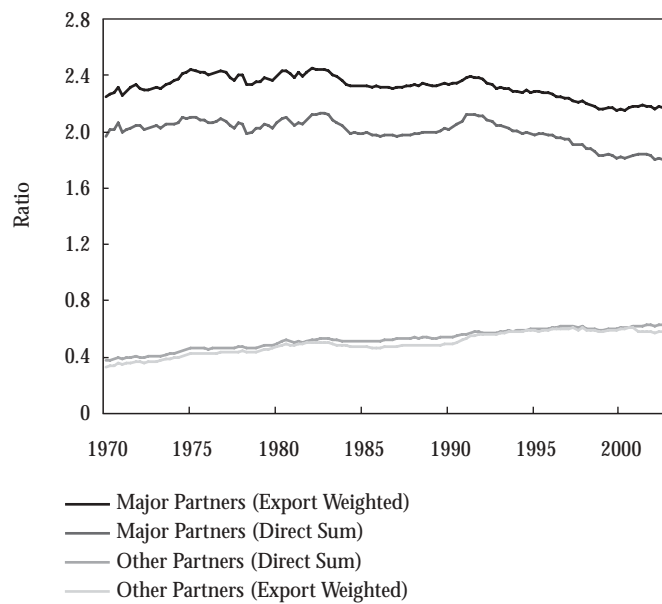
It is well known that growth is a central factor in the near term fluctuations of the balance of trade. For instance, the most recent *Economic Report of the President* (Council of Economic Advisers 2003, 62) states that "one of the most important [factors in the near-term development of the U.S. current account] is the rate of economic growth in the rest of the world." Similarly, Mann (2002, 137–38) displays a corre-lation of import growth with the growth in U.S. real GDP,

Figure 6 Real GDPs of Major and Other Important U.S. Trading Partners

Major Partners (Export Weighted)
Major Partners (Direct Sum)
Other Partners (Direct Sum)
Other Partners (Export Weighted)

Sources: authors' calculations

Figure 7 Major and Other Important Trading-Partner Real GDPs Relative to U.S. Real GDP

Major Partners (Export Weighted)
Major Partners (Direct Sum)
Other Partners (Direct Sum)
Other Partners (Export Weighted)

Sources: BEA and authors' calculations

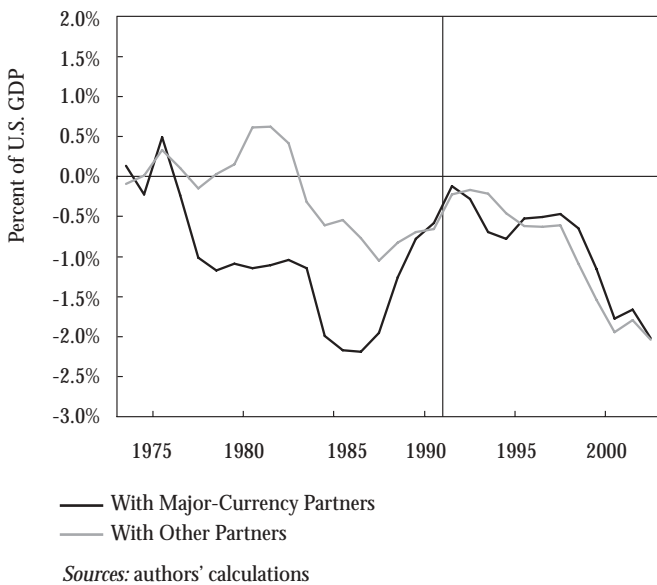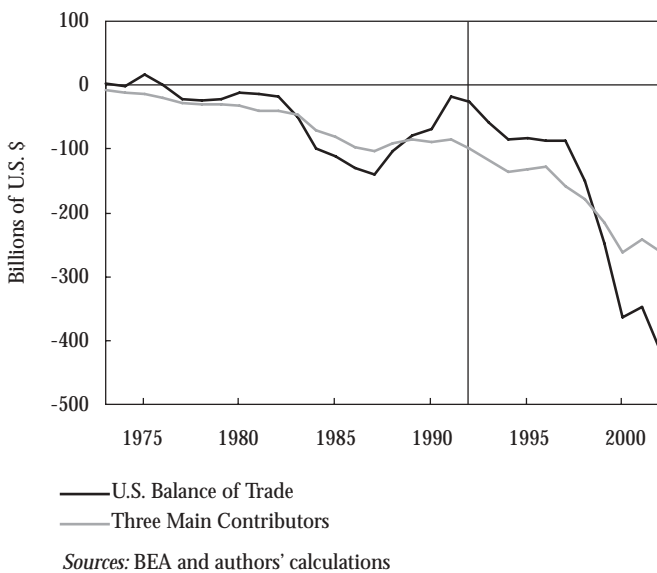**Figure 8 U.S. Trade Balance with Major-Currency and Other Important Trading Partners**

Sources: authors' calculations

Figure 9 U.S. Balance of Trade and Overall Trade Balance with the Three Main Contributors to the U.S. Trade Deficit

Sources: BEA and authors' calculations

and of export growth with the growth of trading-partner real GDP. But it does not follow that one can carry this over to the longer term evolution of the trade balance, for when we look in Figure 8 at the U.S. trade balance with respect to the two groups,[15] we find that both deteriorated in almost exactly the same way.

A similar caution flag is raised when we consider the three U.S. trading partners that account for the bulk of the U.S. trade deficit since 1992. In order of their contribution to the current account deficit, these are Japan, China, and Germany (Figure 9). Since 1992, the United States has grown more rapidly than Japan and Germany, and considerably less rapidly than China (Figure 10). Yet the U.S. trade deficit with all three countries has significantly worsened over this same interval (Figure 11).

Figures 8-11 indicate the importance of examining and analyzing the patterns of U.S. trade with subgroups of its various trading partners. Our newly created database is intended to carry us in that direction. At the very least, our present results suggest that we should be cautious about implying that either the restoration of growth in the rest of the world or some realignment of exchange rates will be sufficient to reverse the direction of the U.S. trade deficit. Other factors, particularly the evolution of the underlying international competitiveness of U.S. producers, also need to be addressed.

Summary and Conclusions

This note has been concerned with the presentation of newly developed measures of the real GDP of U.S. trading partners. Such measures are essential to the explanation of the U.S. balance of trade, the steady deterioration of which over the last decade has prompted much investigation. Our new measures are methodologically consistent with the widely used Federal Reserve "broad" index of the exchange rate, which comprises

all significant U.S. trading partners. We build our measures around the same 36 countries, and utilize the same export shares. The first of our measures is a direct sum of the real GDPs of the U.S. trading partners, while the second is an export-share-weighted total. Finally, since the Federal Reserve disaggregates its "broad" effective U.S. exchange rate index into two components representing "major" and "other important" trading partners, we do the same for our two real GDP measures and for their respective trade balances.

On the whole, we find that U.S. trading partners together constitute an economic "region" between two and a half times as large (direct sum) and three and a half times as large (weighted average) as the United States. The real GDP of this "region" grew more rapidly than that of the United States from 1970–82 but less rapidly from 1992–2002.

This latter period of relatively slow growth in U.S. trading-partner real GDP has been cited as an explanation for the sharp deterioration of the U.S. trade balance since the early 1990s. But our data reveal a more complex pattern. We do indeed find that as the United States grew more rapidly than its "major-currency" trading partners over this interval, its trade deficit with them did deteriorate as expected. However, over this same interval the United States also grew more slowly than its "other important" trading partners, and this should have steadily improved the U.S. trade balance with them, other things being equal. But in actuality this particular trade balance *also* deteriorated, to an almost identical degree as that of the major currency partners.

A similar problem arises when we consider the three countries (Japan, China, and Germany) that account for the bulk of the U.S. trade deficit since 1991. Since then, the United States has grown more rapidly than Japan and Germany, and considerably less rapidly than China. On the basis of the growth effect alone, we would expect the U.S. trade deficit

Figure 10 Real GDPs of the Three Main Contributors to the U.S. Trade Deficit (Relative to U.S. Real GDP)
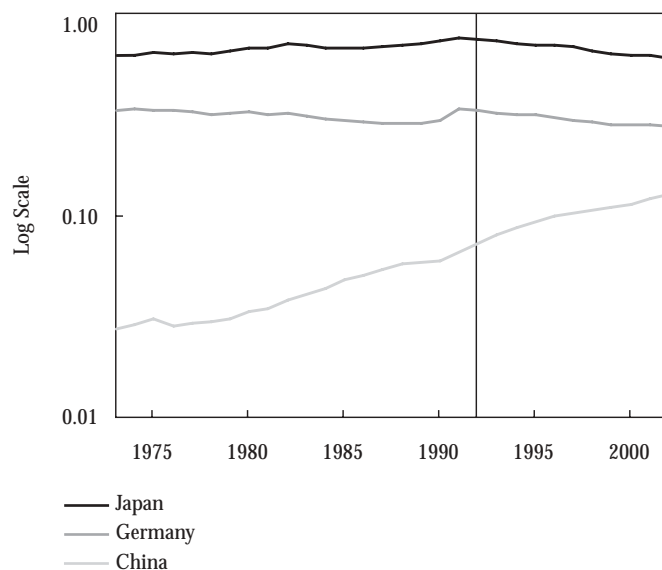
Sources: BEA and authors' calculations

Figure 11 U.S. Balance of Trade with each of the Three Main Contributors to the U.S. Trade Deficit
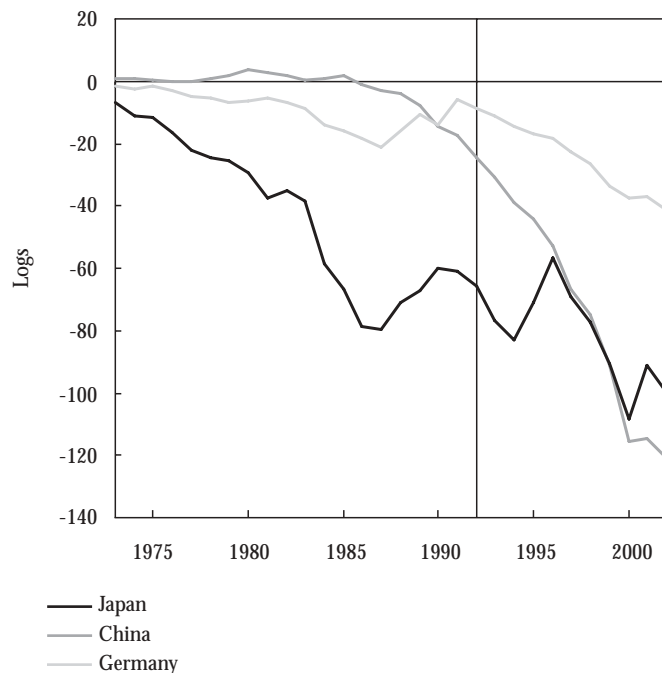
Sources: authors' calculations

with Japan and Germany to have worsened, and that with China to have improved. Yet the U.S. trade deficit has significantly worsened with all three, and most of all with China.

At the moment, ours is a cautionary tale. But one of the significant virtues of our new database is that it enables us to delve into such matters in further detail. This is an ongoing project, and we hope to make our findings available in forthcoming policy notes and working papers on this subject.

Notes

1. Such measures are directly available in the World Bank's "World Development Indicators." One can also construct similar measures from the data available in IMF's "World Economic Outlook," although this requires more effort.
2. Chinn (2003, 33) cites "personal communication from Federal Reserve" as the source of his data. He does not provide any further details as to its method of construction.
3. This measure was developed by Francis Cripps for use in the Cambridge World Economic Model. It consists of quarterly estimates of export-share-weighted U.S. trading partner real GDP, in constant 1975 U.S. dollars. See Atkinson (1980).
4. See the Board of Governors' "H.10 Statistical Release" (various dates) and Leahy (1998) for details. As put by Leahy (1998, 811), this "group . . . [of countries and currencies] . . . is that of . . . important U.S. trading partners."
5. Although it is not part of our presentation here, our own database also includes Denmark, so as to cover the European Community as a whole in subsequent analysis. In all such cases, the export shares will be adjusted to reflect the actual countries covered.
6. The share of these countries in total U.S exports of goods has fluctuated between 87 percent and 90 percent, according to data from the United States International Trade Commission (available at http://www.usitc.gov/).
7. Plus Denmark for subsequent analysis of the European Community.
8. Quarterly figures are only available with a lag of at least one quarter in any case. But for some countries the lag was greater, particularly where quarterly figures have to be constructed from annual data (hence lagging 4 quarters). In instances where the available data did not extend to the last quarter of 2002, we interpolated annual forecasts from the IMF's *World Economic Outlook* database to complete the series.

9. The aggregate sum of 36 country GDPs may be thought of as an equal-weighted average, with each weight equal to 1, so that the sum of weights is 36. Conversely, weighting each country's GDP by its share in U.S. exports gives us a weighted average with weights that sum to 1. For the sake of consistency, we chose to scale this weighted average by multiplying it by 36, so that like the direct sum, its rescaled value also has weights that sum to 36. This has no effect, of course, on trends or growth rates.

10. On a log scale a straight line implies a constant rate of growth, an upward-curving line a rising rate of growth, and a downward-curving line a falling rate of growth. Also, fluctuations of equal magnitude represent equal percentage variations.

11. The aggregate direct sum depends on the sample chosen, which in our case covers roughly 90 percent of U.S. exports. Adding more countries, say by moving to the level of the rest of the world (ROW), would add more to the aggregate GDP measure, but would only cover the other 10 percent of U.S. exports. In this sense, the export-share-weighted average is more meaningful, since all other countries that could be added would be weighted by the remaining 10 percent of export share.

12. Calculated as world GDP minus U.S. GDP, both in constant 1995 dollars, from World Bank (2002).

13. The blip in our direct sum measure in 1991 signals the addition of East Germany to the Federal Reserve sample. Details are available in Working Paper no. 387.

14. The less rapid growth of the major-currency trading partners of the United States after 1992 would imply, other things being equal, that their imports from the United States (which are the U.S. exports to them) would tend to grow less rapidly, which would represent a negative impact on the balance of trade. Alternately, one could say that because the United States was growing more rapidly than its major-currency trading partners, its imports from them would grow more rapidly, and this would worsen the balance of trade, other things being equal.

15. We utilized the export and import shares for each country, as listed by the Federal Reserve, to derive their corresponding nominal export and import levels and hence the nominal balance of trade.

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