FRBSF Weekly Letter

September 26, 1986

# The Outlook for Net Exports

For some time now, analysts have been predicting an improvement in the U.S. trade balance. But there has been little indication of a turnaround so far, despite the 35 percent depreciation of the dollar since its peak in February 1985. In fact, net exports of goods and services — total exports minus total imports — worsened in the second quarter of 1986 to a deficit level of around $150 billion in 1982 dollars (see Chart 1).

Alarmed by these developments, some forecasters have begun to predict that a substantial improvement in the trade balance is unlikely in the near future. If predictions of little or no improvement turn out to be correct, significant problems could lie ahead. For instance, most forecasts of an acceleration in economic growth over the next year depend heavily on an improvement in the net export sector. Without that improvement, real output may continue to be sluggish. Also, there is the strong possibility that a continuing high trade deficit will further increase election year pressures for protectionist legislation. If enacted, this legislation would not only raise consumer costs but could also lead to retaliatory actions by other nations that would close markets to U.S. exporters.

A number of reasons have been proposed for the apparent lag in the anticipated turnaround in the current U.S. trade picture. These include the possibility that foreign exporters, having benefited from high profits when the dollar was strong, are now choosing to limit price increases and to sacrifice their profit margins on exports to the U.S. in order to preserve their share of the huge U.S. market.

Another reason is that the dollar has not changed much in value against the currencies of some of our key trading partners, such as Singapore, Canada, Taiwan, Hong Kong, and South Korea. Thus, imports from these countries, which account for a substantial share of total U.S. imports, are not likely to decrease. In addition, U.S. exports to countries whose currencies have *risen* against the dollar are likely to be limited by continued competition from the aforementioned countries. These developments undoubtedly have had some effect on the trade balance, although it is by no means clear how important they have been.

How much of an improvement in the trade balance should we have expected by now? To answer this question, we used estimates of the historical relationship between the trade balance and its traditional determinants — the exchange rate and U.S. and world GNP — to determine what the trade balance would be now if historical relationships had continued to hold. If the recent developments discussed above have changed historical relationships significantly, then there should be big differences between the actual trade balance and what these relationships predict. Conversely, small differences would suggest that the current trade balance is not out of line with past experience.

**Net exports and the dollar**

In the past year-and-a-half, the dollar has fallen thirty-five percent on a trade-weighted basis. When the value of a country's currency falls, all other things considered, the country's exports become cheaper and easier to sell. At the same time, imports into that country become more expensive and harder to sell.

Other factors can influence the trade balance as well. Exports depend on the level of income and economic activity abroad, while imports depend on domestic income. A large part of the U.S. trade deficit that emerged after 1982 was due to faster growth in the United States than abroad as well as to the rise in the value of the dollar.

Of course, it takes time for changes in currency values to affect trade flows because it takes time for buyers to recognize changes in the relative prices of goods. In addition, buyers may not be able to adjust the quantities to which pre-existing contracts had committed them in the short-run. It also takes time to form new business connections and to place new orders. Even if buyers could be found rapidly, contracting for new equipment and raw materials, building capacity,

and so on to increase production could also require a substantial amount of time.

The critical question for the present trade balance situation is whether enough time has elapsed since the dollar began falling for us to expect the trade balance to show some improvement. To answer this question, we use two different approaches for estimating the historical relationship between the trade balance and its determinants.

**Results from two statistical techniques**

The first approach, known as structural estimation, uses economic theory to specify separate relationships for real exports of goods and services and real imports of non-oil goods and services. Petroleum imports were removed because of the changeability of OPEC pricing practices and the relative unresponsiveness of oil imports to changes in U.S. dollar exchange rates (because oil generally is invoiced in dollars).

We obtained statistical estimates of these relationships using data from the fourth quarter of 1972 to the second quarter of 1983 (when the U.S. net export deficit first emerged). Consistent with economic theory, we found that exports increased with increases in the rest of the world's real GNP and fell with increases in the real value of the dollar. Our results indicate that the effect of the real value of the dollar on exports generally took three quarters to emerge and peaked after six quarters. Non-oil imports were found to rise with increases in U.S. real GNP and increases in the real value of the dollar. The effect of the exchange rate on imports was found to peak after three quarters and to last for a total of four quarters.

(One might argue that goods flows and service flows should be explained separately. For instance, the investment income component of services is more sensitive to factors such as interest rates. However, statistical estimates for goods flows alone were actually worse than the estimates for goods and services discussed here. In addition, quarterly variations in overall net exports are more a reflection of variations in goods flows. Consequently, we did not consider it necessary to consider the role of variables such as interest rates.)

Next, we used the estimated relationships to predict actual import and export levels over the period 1983Q3-1986Q2 (which is outside the period from which data was drawn to estimate the relationships). The predictions tracked the actual import and export levels reasonably well through 1985. However, actual imports were underpredicted in each of the last three quarters, with the largest error occurring in the most recent quarter, 1986Q2.

Chart 2 plots the predicted and actual values of net exports obtained from this exercise (actual oil imports were included to make total imports and exports comparable). Observe that, based on past experience, we would have predicted a continuing deterioration of U.S net exports through the first quarter of 1986 despite the earlier depreciation of the dollar. This suggests that the failure of the trade balance to improve through the beginning of this year is consistent with normal lags between changes in currency value (and foreign and domestic economic growth) and net exports. However, past experience also would have led us to predict an improvement in the second quarter of this year that did not take place. For that quarter, the prediction error is significantly larger than the errors for earlier periods shown in the chart.

The second approach used to analyze net exports is a statistical technique known as Vector Autoregression (VAR). In contrast to the structural approach, this technique lets the data speak for itself in the sense that it imposes no theory on how different variables should interact with one another. The VAR model we constructed included, in addition to the real values of exports and imports of goods and services, U.S. real GNP, world real GNP, the nominal value of the dollar, the U.S. consumption deflator, and an index of foreign consumer prices.

The VAR technique was used to estimate the relationships between these variables using data from the first quarter of 1960 to the second quarter of 1983. We then used the estimated relationships to predict exports and imports from the third quarter of 1983 to the second quarter of 1986. The errors that this technique made in predicting imports are smaller than those made by the structural approach.

Chart 3 plots the corresponding predictions for net exports from the VAR approach. As with the structural approach, this technique predicted a deterioration in U.S. net exports through the first

Chart 1
Real Net Exports and
Real Value of Dollar

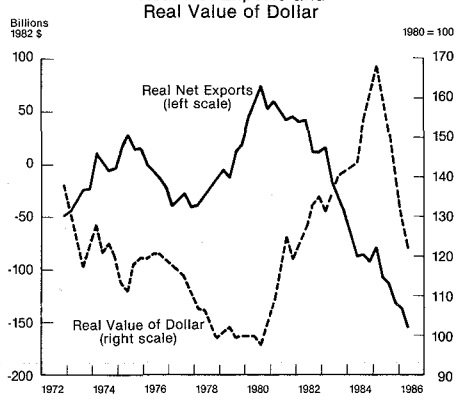



Chart 2
Net Exports of Goods and Services
Structural Approach

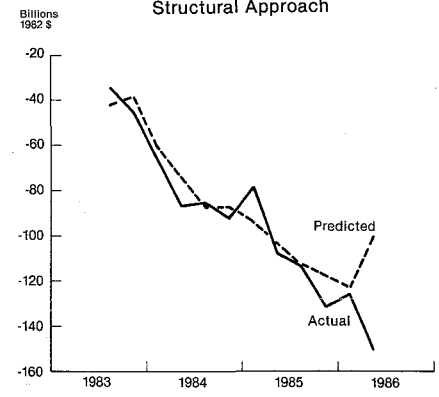
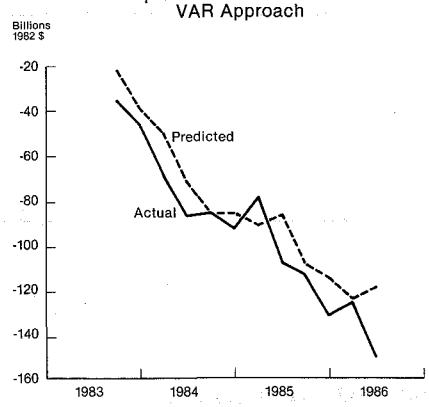



Chart 3
Net Exports of Goods and Services
VAR Approach




quarter of 1986. It also predicted an improvement in net exports in the second quarter of 1986, although the predicted improvement shown in Chart 3 is noticeably smaller than that from the structural approach shown in Chart 2.

## Conclusions

Because the predictions of both approaches fit the data reasonably well through the first quarter of 1986, the continued deterioration in net exports until then was probably consistent with past experience. In particular, factors such as unusual pricing behavior by foreign exporters or the fact that the U.S. dollar has not declined much in value against the currencies of some key trading partners may not have played much of a role in stalling any improvement in the trade balance.

Both approaches did predict a turnaround in the trade balance during the second quarter of 1986, in contrast to the further deterioration that actually occurred. Recently released preliminary data for July indicate deterioration through that month and suggest that a significant improvement in the trade balance may not occur even in the third quarter of this year.

However, it is worth pointing out that data for the second quarter, as well as July, is based on incomplete information and therefore subject to substantial revision. Moreover, missing a turning point by one or two quarters is not a rare occurrence in forecasting economic variables.

But the failure of net exports to improve by the end of this year would imply that historical relationships have changed. Such an outcome would indicate that one or more of the factors mentioned at the start of this *Letter* is exerting a significant influence on the trade balance.

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## BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT

(Dollar amounts in millions)

| **Selected Assets and Liabilities Large Commercial Banks** | Amount Outstanding 9/3/86 | Change from 8/27/86 | Change from 9/4/85 Dollar | Change from 9/4/85 Percent[7] |
|---|---|---|---|---|
| Loans, Leases and Investments[1] [2] | 203,197 | 1,787 | 6,019 | 3.0 |
| Loans and Leases[1] [6] | 183,889 | 1,654 | 6,010 | 3.3 |
| Commercial and Industrial | 50,827 | 147 | − 919 | − 1.7 |
| Real estate | 67,265 | − 29 | 2,883 | 4.4 |
| Loans to Individuals | 39,529 | − 93 | 2,071 | 5.5 |
| Leases | 5,524 | 0 | 99 | 1.8 |
| U.S. Treasury and Agency Securities[2] | 11,408 | 34 | − 763 | − 6.2 |
| Other Securities[2] | 7,901 | 100 | 772 | 10.8 |
| Total Deposits | 210,966 | 5,887 | 7,129 | 3.4 |
| Demand Deposits | 56,177 | 4,821 | 4,524 | 8.7 |
| Demand Deposits Adjusted[3] | 36,335 | 1,641 | − 10,911 | −23.0 |
| Other Transaction Balances[4] | 17,760 | 1,046 | 3,266 | 22.5 |
| Total Non-Transaction Balances[6] | 137,029 | 20 | − 660 | − 0.4 |
| Money Market Deposit Accounts—Total | 47,276 | 301 | 1,813 | 3.9 |
| Time Deposits in Amounts of $100,000 or more | 34,576 | − 384 | − 3,396 | − 8.9 |
| Other Liabilities for Borrowed Money[5] | 25,070 | 816 | 914 | 3.7 |

| **Two Week Averages of Daily Figures** | Period ended 8/25/86 | Period ended 8/11/86 |
|---|---|---|
| **Reserve Position, All Reporting Banks** | | |
| Excess Reserves (+)/Deficiency (−) | 36 | 3,582 |
| Borrowings | 25 | 13 |
| Net free reserves (+)/Net borrowed(−) | 12 | 3,569 |

[1] Includes loss reserves, unearned income, excludes interbank loans
[2] Excludes trading account securities
[3] Excludes U.S. government and depository institution deposits and cash items
[4] ATS, NOW, Super NOW and savings accounts with telephone transfers
[5] Includes borrowing via FRB, TT&L notes, Fed Funds, RPs and other sources
[6] Includes items not shown separately
[7] Annualized percent change