

ECONOMIC COMMENTARY

How Desirable Is Dollar Depreciation?

by Gerald H. Anderson

Introduction

In September 1985, the Secretary of the Treasury joined his counterparts in the Group of Five (G-5) nations—France, Germany, Japan, and the United Kingdom—in announcing a joint effort to lower the exchange value of the dollar.¹

If this effort to depreciate the dollar is successful, there will be many effects on our economy, some good and some bad. The extent of these effects and their net impact on the nation's well-being is uncertain. Moreover, the consequences of the effects depend on the state of the economy when dollar depreciation takes hold.

The effort to depreciate the dollar comes after nearly a five-year advance in its value. The dollar began rising in summer 1980 and reached a peak in the first quarter of 1985. Many times during this nearly five-year advance, some analysts urged policymakers to seek dollar depreciation, others argued that additional appreciation should be sought, and still others argued for a *laissez faire* attitude toward the exchange rate.

One may wonder why policymakers chose to seek dollar depreciation in September 1985 and not, say, two years earlier. One explanation is that economic conditions had changed between September 1983 and September 1985 in ways that substantially altered the risks facing the economy.

First, the dollar had appreciated an additional 6 percent on balance, despite a decline from its 1985 first quar-

ter peak, adding to the difficulties facing U.S. firms in the tradeable goods sector—firms that export or compete against imports. Second, many U.S. tradeable goods producers had been further weakened by the additional two years of strong foreign competition, threatening the survival of some. Third, a rising tide of protectionist sentiment was evidenced by 300 protectionist bills before Congress. Fourth, the inflation rate had remained relatively low and inflation expectations appeared to have fallen. Fifth, prospects had improved for reduction of the federal budget deficit. Sixth, economic growth had slowed from its rapid pace and capacity utilization had become flat well below levels that in the past were associated with rising inflation.

In this *Economic Commentary*, we examine some of the possible effects of dollar depreciation and discuss the difficulty that various economic factors cause in predicting how it will affect the overall economy.

Impacts of Dollar Depreciation

Most analysts expect the dollar to depreciate further. The effects of that depreciation, if it occurs, depend importantly on its causes, and on its speed and magnitude. Here, we assume that the dollar depreciates because of a change in the preferences of investors and not from a change in fiscal or monetary policy. The G-5 nations want exchange rates to "...better

reflect fundamental economic conditions . . ."² Implicit in this statement is the hope that investors will reevaluate fundamental conditions and alter their portfolio preferences accordingly.

We also discuss how the impact of depreciation would be altered by a substantial difference in the speed or magnitude of the depreciation, by a change in monetary or fiscal policy, or by some other change in the economic environment.

Prices of Traded Goods and Services

Dollar depreciation will tend to change prices of imports and exports. The magnitude of change depends not only on the amount of depreciation, but also on the proportion of the dollar depreciation that is "passed through" to prices of imports and exports. If foreign firms that export to the United States do not change their *home currency* prices, dollar prices of imports will rise in full proportion to the dollar depreciation, and pass-through will be complete. There will be no pass-through, however, if foreign firms lower their home currency prices by enough to keep the dollar price of imports unchanged. The degree of pass-through will be different for different products and will depend on such things as a producer's profit margin, capacity utilization, expectations regarding the permanence of the exchange rate change, and terms of sales contracts.

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The views stated herein are those of the author and not necessarily those of the Federal Reserve Bank of Cleveland or of the Board of Governors of the Federal Reserve System.

1. Announcement of the Ministers of Finance and Central Bank Governors of France, Germany, Japan, the United Kingdom, and the United States, September 22, 1985.

2. Ibid p. 4.

3. See Robert A. Feldman, "Dollar Appreciation, Foreign Trade, and the U.S. Economy," Federal Reserve Bank of New York, *Quarterly Review*, Summer 1982, pp. 1-9.

4. For a study that finds wider-than-usual profit margins abroad, see Charles Pigott and Vincent Reinhart, "The Strong Dollar and U.S. Inflation," Federal Reserve Bank of New York, *Quarterly Review*, Autumn 1985, pp. 23-9. Gary Wengowski and Roseanne Cahn, "How Foreign Profits and a Falling Dollar Affect U.S. Inflation," *Goldman-Sachs Pocket Chartroom*, September 1985, find profit margins similar to those of the past.

Table 1 Change in Consumer Price Index Caused by Exchange Rate Changes^a

Path of dollar's trade-weighted exchange rate	1981	1982	1983	1984	1985	1986	1987	1988
Path A	-0.7	-1.4	-1.7	-1.5	-1.5	-0.1	-1.1	-1.2
Path B	-0.7	-1.4	-1.7	-1.5	-1.5	0.3	0.1	0.5
Path C	-0.7	-1.4	-1.7	-1.5	-1.5	0.6	1.0	1.8

NOTE: In Path A, the dollar resumes rising at its previous pace; in Path B, the dollar plateaus at its level of 1985:IVQ; in Path C, the dollar falls 2.5 percent per quarter in 1986 through 1988.

a. In percents, fourth quarter to fourth quarter.

It has been estimated that, in past periods of exchange rate change, foreign firms on average passed through 60 percent of an exchange rate change into dollar prices while absorbing the other 40 percent. U.S. exporters did the opposite, passing through 40 percent and absorbing the other 60 percent.³

Some analysts expect less pass-through this time than usual, reasoning that foreign firms have unusually wide profit margins now because the dollar has appreciated so much since 1980. Since empirical evidence on size of profit margins is mixed, we assume that pass-through will be similar to past experience.⁴ However, if there is less-than-usual pass-through, dollar depreciation will do less than usual to raise the U.S. price level and to improve our merchandise trade balance.

Prices and Inflation

Dollar depreciation tends to raise the prices of imports and domestic goods that compete with imports, but the overall price level can rise only if permitted by monetary policy.⁵

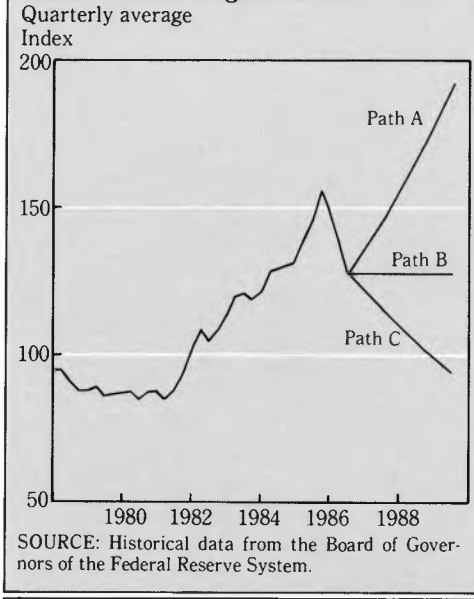
Assuming monetary policy accommodates a one-time rise in the price level, but not a continuing higher rate of inflation, the impact of depreciation on the price level can be estimated.

The estimates here (see table 1) were made using the following rule-of-thumb: a 10 percent depreciation of the dollar's trade-weighted exchange rate increases consumer prices by 0.75 percent in the first year and by 0.75 percent spread evenly over the second and third years.⁶

5. More precisely, a rise in price level can be accommodated by an increase in money supply, an increase in the velocity of money, or a decrease in real output. We assume that the dollar depreciation has not, itself, been caused by U.S. price increases. For further discussion of this point, see Gerald H. Anderson and Owen F. Humpage, "Exchange Rates and U.S. Prices," *Economic Commentary*, Federal Reserve Bank of Cleveland, April 18, 1983.

The estimates were made assuming three different paths for the dollar, starting from its actual level of 1985 fourth quarter (see chart): In Path A, the dollar reverses its recent decline and rises through 1988 at the same average pace as in 1980 third

Chart 1 Trade-weighted Dollar



quarter to 1985 first quarter. In Path B, the dollar plateaus at its 1985 fourth quarter level. In Path C, the dollar continues to decline through 1988, falling 2.5 percent each quarter. The estimates of price effects ignore the other causes of price changes and, therefore, are not forecasts.

Because of the lag between an exchange rate change and its full impact on prices, much of the beneficial impact from past dollar appreciation has not yet occurred. Consequently, the net impact of exchange rate

6. The rule is based on Peter Hooper and Barbara Lowrey, "Impact of the Dollar Depreciation on the U.S. Price Level: An Analytical Survey of Empirical Estimates," *International Finance Discussion Papers, No. 128*, Washington, DC: Board of Governors of the Federal Reserve System, January 1979.

change on prices was still beneficial throughout 1985. In 1986, however, the impact will be adverse by 0.3 percent if there is no additional depreciation (Path B) and by 0.6 percent if depreciation continues (Path C). More importantly, the difference between 1985 and 1986, 1.8 percent in Path B or 2.1 percent in Path C, would be a very large increase in the inflation rate. The adverse net impacts on the price level would continue to grow in 1987 and 1988, but the year-to-year changes are smaller than in 1986. Obviously, the beneficial impact on prices from dollar appreciation is going to be sorely missed.

A strong upward thrust to prices would present a difficult challenge to monetary policymakers. Excessive resistance to a price rise could trigger recession, while not enough resistance could allow the suddenly rising prices to ignite additional wage and price inflationary pressures. Thus, depreciation is potentially dangerous because if it occurs too rapidly, the initial increase in prices could be so great as to make either renewed inflation or recession, or both, almost inevitable.

Because depreciation of the dollar could reignite inflation, other economic factors that affect inflation must be considered when deciding whether or not depreciation is an acceptable risk. As noted earlier, other inflationary risks—the economic growth rate, recent behavior of inflation, and inflation expectations—had diminished, and capacity utilization had plateaued between September 1983 and September 1985, perhaps causing policymakers to view the inflationary tendency of depreciation as less of a threat.

Balance of Trade

Dollar depreciation will tend to improve the merchandise trade balance. The size of the improvement will depend on the magnitude of the depreciation, on the degree of pass-through, and on the response of import and export demands to price changes.

7. See Robert A. Feldman, "Dollar Appreciation, Foreign Trade, and the U.S. Economy," Federal Reserve Bank of New York, *Quarterly Review*, Summer 1982, pp. 1-4; and "The Trade Balance Effects of the Dollar's Recent Strength," *Research Paper #8206*, Federal Reserve Bank of New York, January 1982.

The time pattern of trade balance improvement involves what is called the J curve. Theoretically, currency depreciation could cause the trade balance to get worse before it gets better—that is, the trade balance could trace a j-shaped pattern through time. Trade patterns adjust slowly to exchange rate changes because existing contracts must be honored, and because it takes time to enter new markets or to find new suppliers. A J curve can result if, when import prices rise, import volume is initially unchanged, so that total expenditure on imports rises. This might outweigh any increase in export earnings, and thus worsen the trade balance. Later, import volume will fall in response to the higher prices, reducing expenditure on imports and improving the trade balance. However, recent empirical research indicates that the J-curve effect for the United States has not been strong enough to actually make the trade balance worse initially, but that it has been strong enough that no improvement has been apparent until the third quarter following the depreciation. In addition, most of the impact of exchange rate change occurs in the third through the sixth quarters following the change.⁷

The estimates reported in table 2 assume that pass-through and responses to price changes will be the same as the research cited above found in the past, and that the impact on trade is spread evenly over the third through sixth quarters following the depreciation. The estimates assume the same three paths for the dollar as in table 1. The cumulative changes from the third quarter 1985 trade balance are shown, assuming exchange rates are the only source of change. The estimates include the delayed harmful effect of previous dollar appreciation, together with the beneficial effect of dollar depreciation.

With only the dollar depreciation that had occurred by the end of 1985, (Path B), the trade balance would continue to worsen through the first

8. A \$12 billion reduction in changes in inventory accounts for the rest of the difference between domestic demand and domestic output. These data use 1972 base year prices, because that is what was available to policymakers in summer 1985.

9. Most of the public's financial assets are also the public's financial liabilities and have no effect on real wealth. Government bonds, how-

Table 2 Cumulative Change in Annualized Merchandise Trade Balance from the 1985:IIIQ Level Caused by Exchange Rate Changes^a

Path of dollar's trade-weighted exchange rate	1985	1986				1987				1988			
	IVQ	IQ	IIQ	IIIQ	IVQ	IQ	IIQ	IIIQ	IVQ	IQ	IIQ	IIIQ	IVQ
Path A	-10.0	-16.9	-16.4	-9.5	-0.9	3.3	1.9	-5.6	-13.1	-20.6	-28.2	-35.7	-43.2
Path B	-10.0	-16.9	-16.4	-9.5	1.0	8.9	13.2	13.2	13.2	13.2	13.2	13.2	13.2
Path C	-10.0	-16.9	-16.4	-9.5	2.4	12.9	21.3	26.7	32.1	37.6	43.0	48.4	53.8

NOTE: In Path A, the dollar resumes rising at its previous pace; in Path B, the dollar plateaus at its level of 1985:IVQ; in Path C, the dollar falls 2.5 percent per quarter in 1986 through 1988.

a. In billions of dollars.

quarter of 1986 and then improve through the second quarter of 1987 but, on balance, would improve by only \$13.2 billion from its level of third quarter 1985. With depreciation continuing at 2.5 percent per quarter (Path C), the trade balance would continue to worsen through 1986 first quarter, but then improve steadily, exceeding its 1985 third quarter level by \$32.1 billion in 1987 fourth quarter and by \$53.8 billion in fourth quarter 1988. These figures are not forecasts, of course, because they ignore any other factors, such as economic growth both here and abroad, or changes in protectionism, which can also affect the trade balance.

A major reason why the Administration joined the other G-5 nations to seek dollar depreciation was the hope that the resulting trade balance improvement would dampen efforts to increase trade protection here and abroad. Any major increase in U.S. protectionism is likely to provoke retaliatory measures abroad, thus reducing the benefits of trade to all nations and harming the world economy. Policymakers, therefore, had to weigh the inflation risk of depreciation against the benefits of reducing the prospects for protectionism.

Table 2 shows that even with substantial additional depreciation (Path C), benefits to the trade balance occur with a substantial lag. Moreover, the improvement is small compared to the size of the trade deficit, which was at an annual rate of about \$148 billion in 1985 third quarter. Thus,

ever, have no offsetting liability; they are part of net wealth. Their real value falls as prices rise. A counter-argument is that bonds are not net wealth because of the future tax liabilities necessary for their redemption. See Robert J. Barro, "Are Government Bonds Net Wealth?," *Journal of Political Economy*, vol. 82, no. 6 (December 1974), pp. 1,095-1,117.

trade improvement from depreciation may not come soon enough or be big enough to forestall passage of protectionist legislation.

Real GNP

Many analysts assume that dollar depreciation will increase real GNP. Indeed, many analysts have noted that domestic demand (real final domestic sales) is strong and recently has been rising much faster than output (real GNP), primarily because of the worsening trade balance (real net exports). From 1984 second quarter to 1985 second quarter, domestic demand rose \$66.9 billion (4.1 percent seasonally adjusted annual rate [saar]) while output rose only \$32.5 billion (2.0 percent saar), primarily because real net exports fell \$22.4 billion.⁸ An improvement in the trade balance would reduce this difference between output and domestic demand, because either domestic demand would decrease or output would increase.

Resources appear to be available to increase output. Industrial capacity utilization, at about 80 percent, is well below its January 1967 peak of 89.6 percent. Price indexes and vendor delivery performance also give little indication that the economy is pressing against capacity constraints.

Using the same assumptions about the effect of depreciation on trade, it appears that a 17 percent dollar depreciation would, after one to two years, improve the trade balance enough to raise the *level* of real GNP by 1 percent, if there were no other

10. See Arnold Kling, "The Macroeconomics of Exchange Rate Shocks," paper prepared for a symposium sponsored by the Federal Reserve System Committee on Business Analysis, November 7, 1985, p. 9, and table 1.

11. Alternatively, domestic saving might rise or domestic investment fall, but these changes are likely to be small in the absence of an interest-rate change.

offsetting effects. This, of course, would raise the *growth rate* of GNP only temporarily, unless the dollar were to continue to depreciate. So the dollar's 17 percent depreciation between 1985 first quarter and 1985 fourth quarter should, by the end of 1987, raise the level of real GNP by about 1 percent, if there are no other offsetting effects.

However, some offsetting effects are likely. The price rise that accompanies dollar depreciation will reduce the real value of financial assets, and consumers may respond to this reduction of their real wealth by spending less for goods and services.⁹ In addition, dollar depreciation will, as explained below, tend to cause higher interest rates. Higher interest rates would reduce demand for such interest-sensitive products as consumer durables (appliances, autos, etc.), housing, non-residential construction, and producers' durable equipment (trucks, factory equipment, etc.).

The net effect that these conflicting impacts would have on output is not clear. Even sophisticated computer models used to predict economic activity yield conflicting answers. For example, the Federal Reserve Board's MIT-Penn-SSRC model of the U.S. economy suggests that dollar depreciation will reduce real GNP, while the Board's multi-country model suggests that depreciation would encourage economic growth.¹⁰

Thus, it is not unlikely that an improvement in the trade balance would narrow the gap between domestic demand and domestic output pri-

marily by reducing domestic demand rather than by increasing domestic output. A key to whether this in fact happens is the effect of depreciation on interest rates and on demand for interest-sensitive products.

Dollar depreciation will tend to be accompanied by a rise in interest rates. Depreciation will reduce the trade and current-account deficits, thereby reducing the capital inflow that is always equal in size to the current-account deficit. The reduction in capital inflow will raise interest rates, unless there has been a reduction in the federal budget deficit and in federal borrowing needs, or an easing of monetary policy.¹¹

A reduction in the federal deficit might accompany dollar depreciation. The Balanced Budget and Emergency Deficit Control Act of 1985 (Gramm-Rudman Act), mandating a balanced budget by 1991, was recently enacted. If the budget deficit were reduced at a pace that coincided with the reduction of the trade deficit, equal reductions in federal borrowing and in capital inflow could leave interest rates unchanged. In that case, dollar depreciation would not burden interest-rate-sensitive sectors of the economy. However, the tighter fiscal policy itself would tend to reduce total demand, so there would still be an important offset to the increase in demand from trade balance improvement.

Some analysts have suggested that in the absence of federal deficit reduction, monetary policy could be eased to prevent interest rates from rising as the trade balance improves

following dollar depreciation. This option has two serious shortcomings. First, an easier monetary policy could add to the inflationary pressures that dollar depreciation has already set in motion. Second, if inflation expectations were thus reignited, long-term interest rates might be pushed up.

Conclusions

Assessing the desirability of dollar depreciation is difficult for policymakers because it has both favorable and unfavorable effects. Depreciation tends to raise prices, but it improves the trade balance and helps workers and firms in the tradeable goods sector. However, it tends to reduce capital inflows and to raise interest rates, thus hurting firms in interest-sensitive sectors. How depreciation will affect real GNP is uncertain, although conventional wisdom says the effect will be favorable. Between summer 1983 and summer 1985, the danger that inflation would accelerate had been reduced, while the danger of protectionism had increased. Moreover, the distress of many firms and workers in the tradeable goods sector had increased, and the growth rate of GNP had become uncomfortably slow.

Faced with the favorable and unfavorable effects of depreciation, policymakers apparently judged that depreciation was not a good idea in the economic environment of summer 1983, but that it had become a good idea in summer 1985.

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