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Does a Fall in the Dollar Mean Higher U.S. Consumer Prices?

Beginning in early 2002, the dollar tumbled against major currencies like the euro, the British pound, and the Japanese yen; though it has risen somewhat in recent months, it is still well below that peak. One of the key questions this has raised for U.S. monetary policymakers is: How much of the decline in the dollar passed through to import prices and to overall consumer prices?

This *Economic Letter* looks at the relationship among changes in the exchange rate value of the dollar and in import prices and overall consumer prices, with a particular focus on the current circumstances. It appears that the lower value of the dollar at this point is affecting U.S. prices less than it has historically. The reasons for the difference include changes in trading partners, changes in the composition of U.S. trade, and improved monetary policy over the last several years. Looking ahead, then, it appears likely that the recent dollar depreciation will have only very moderate effects on overall consumer prices.

How changes in the dollar "pass through" to U.S. prices

Between February 2002 and May 2004, the real value of the dollar fell by 19.1% relative to the other G-7 currencies (Canada, Japan, France, Germany, Italy, and the United Kingdom). However, import prices did not respond by jumping by 19.1% as well. Rather, only a part of the dollar's decline "passed through" to import prices. The reasoning is as follows. Import prices reflect the costs in dollars of purchasing goods produced in other countries. Such costs depend on the cost of production, the cost of distributing the good, the profit margin desired by the foreign exporter, and the exchange rate. The pass-through rate may be less than 100% for a given devaluation, holding production costs and other factors constant, because the foreign exporters may be willing to reduce their profit margins.

A crude way to estimate the pass-through rate is to compare the cumulative changes in the exchange rate and import prices. Non-oil import prices and non-energy consumer prices increased by only 4.1% between February 2002 and May 2004. The recent 19.1% depreciation of the dollar against major (G-7 industrial) currencies implies a modest 21% pass-through rate.

More sophisticated empirical studies take account of possible lags in the effect of currency depreciation on import prices and also control for movements in import prices that are unrelated to changes in the exchange rate. These studies find that the average pass-through rate for industrialized countries is about 60%, with the greatest effect occurring within four quarters of the change in the exchange rate (Goldberg and Knetter 1997).

It is well documented that the United States has a lower pass-through rate than most industrialized countries, because foreign exporters are more willing to keep prices to U.S. consumers constant in order to maintain market share. Based on data from the mid-1970s through the 1990s, the pass-through rate for the United States is estimated to be about 40% (see Olivei 2002 and Campa and Goldberg 2002). Thus, a depreciation of 19.1% should result in a 7.6% increase in import prices, well above the 4.1% observed over the last two years. This suggests that import prices could increase by an additional 3.5% in order to match the historical U.S. pass-through rate. However, several factors in the current economic environment suggest that it is unlikely that the U.S. will see a rise of that magnitude in import prices.

Changing trade partners

Historically, the U.S.'s main trading partners have been the G-7 countries; but globalization, especially over the last few years, has broadened the group of trading partners substantially. For example, China and Mexico now account for a significant share of total U.S. imports—up from a 5.5% share in 1980 to a 22.4% share in 2002. Therefore, it makes sense to measure the change in the dollar's exchange rate value not simply vis-à-vis the G-7,

but rather against a broader trade-weighted basket of currencies. By that measure, the dollar has depreciated by only 9.3%; for example, the Chinese renminbi has remained constant against the dollar and the Mexican peso has actually fallen by 25.6%. Therefore, taking the smaller rate of depreciation together with a 40% pass-through rate implies only a 3.7% increase in import prices, which is reasonably close to the 4.1% increase we have seen so far.

Changing composition of U.S. imports

The composition of imports is another important determinant of the magnitude of the pass-through effect. Campa and Goldberg (2002) document that pass-through rates vary dramatically among products and across industrialized countries (including the U.S.). Olivei (2002) examines a cross section of U.S. industrial imports and finds that estimates of pass-through rates vary from 15% for electronics to 90% for raw materials.

The main reason for these differences is the degree of competition in those markets. Firms with more market power may prefer to cut into their profit margins (markup) rather than raise prices in response to cost shocks to avoid losing market share. The more market power a foreign exporter has, the less it will pass cost changes due to an exchange rate change through to the price charged to consumers.

The U.S. has seen some movement in the composition of imports into products that have low pass-through rates, implying that the impact of the dollar's depreciation on import prices and consumer prices should also be restrained. Specifically, the share of capital goods (excluding automotive goods) in U.S. non-energy imports increased from 19% in 1980 to 32% in 2000. Meanwhile, the share of non-energy industrial supplies fell from 29% to 14% over the same period. Since pass-through rates for capital goods are lower than for industrial supplies, which include raw materials, the average pass-through rate should decline. Indeed, Olivei (2002) finds that, for the U.S., the average pass-through rate for a broad selection of industrial products has declined from the historical 40% to 22% in sample periods limited to the 1990s. Using the lower pass-through rate and the 9.3% depreciation against the broader basket of currencies implies a 2% increase in import prices, which is actually lower than the recent 4.1% change.

How changes in import prices pass through to overall consumer prices

To estimate the impact of a change in import prices on overall consumer prices, it would be tempting to assume that it would be directly proportional to the share of imports in total output. In other words, since imports represent about 14% of total U.S. output, one might simply assume that they also represent 14% of consumer prices; then, with a 4.1% increase in import prices, we could expect a 0.6% increase in overall consumer prices.

However, one cannot directly compare changes in exchange rates, import prices, and consumer prices. Changes in the monetary policy regime or in the nature of external shocks also may play a role. To the extent that they do, this implies that the estimated pass-through rates may change over time along with changes in these underlying factors.

For example, suppose the Fed tightened monetary policy in response to higher expected inflation after a period of exchange rate depreciation. If consumer prices did not rise much, even though the currency depreciated, estimated pass-through rates would appear lower because of the monetary policy action. This implies that monetary regime changes that involve a more aggressive stance towards inflation can lead to lower observed pass-through rates. This has been the case in high-inflation developing countries, where monetary policy reforms have been accompanied by lower pass-through rates to domestic prices (Choudhri and Hakura 2001).

External shocks may also affect estimated pass-through rates. For example, when oil prices soared in the 1970s, the dollar depreciated sharply, and import prices and inflation increased. This created the appearance of a high pass-through rate. However, as oil prices returned to more normal levels, the observed pass-through rate into overall consumer prices also returned to more normal levels.

Gagnon and Ihrig (2002) provide evidence on how external shocks may affect the relationship of the dollar exchange rate and final prices. Using data from 1971 to 2000 that includes the major oil price shocks of 1973–1974 and 1978–1979, they found results suggesting that a 9.3% dollar depreciation would be associated with a 2.5% increase in overall consumer prices. However, when their sample was restricted to the post-oil shock period of 1981 to 2000, a 9.3% depreciation is associated with only a 0.3% increase in consumer prices. This is lower than the simple estimates based on the share of imports in total output.

Conclusion

Between February 2002 and May 2004, the dollar depreciated by 19.1% against a basket of major

currencies. However, over the same period it depreciated by only 9.3% against a broader basket of currencies. Furthermore, the pass-through rate from the exchange rate to import prices and consumer prices has declined as the share of low pass-through imports has increased. Taken together, these observations suggest that import prices may not rise much further in response to the recent dollar depreciation. Given the small relative importance of the import sector in the U.S. economy, together with a reduced pass-through rate into consumer prices, the effect of any further import price increases on the overall price level is likely to be very moderate.

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