FRBSF ECONOMIC LETTER

1999-30 | October 8, 1999

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Depreciations and Recessions

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Pacific Basin Notes. *This series appears on an occasional basis. It is prepared under the auspices of the Center for Pacific Basin Monetary and Economic Studies within the FRBSF's Economic Research Department.*

Following the dramatic currency depreciations in many East Asian economies in 1997, these countries suffered sharp and lingering recessions. This outcome runs counter to the notion that depreciations ought to *boost* output because they make domestically produced goods cheaper.

Economists offer at least three possible explanations for the close timing of depreciations and recessions. First, depreciations reduce aggregate demand or aggregate supply, thus reducing output. Second, depreciations may reflect external shocks that have contractionary effects. Third, depreciations may be associated with domestic conditions (such as a weak financial sector) that make an economy vulnerable to adverse shocks. Under the first explanation, depreciations *cause* recessions. Under the second and third explanations the same factors that cause currencies to depreciate may cause output to contract, but the depreciation may (or may not) be directly contractionary. This *Economic Letter* briefly discusses the reasoning behind these explanations and highlights some implications.

Contractionary devaluations

Depreciations can have expansionary *and* contractionary consequences for economic activity. (See Agenor and Montiel 1996 for an overview of the extensive literature on this subject.) To illustrate these effects, consider a small open economy that produces a nontradable good (say cement) that is consumed only in the domestic market because it is too expensive to trade internationally, imports fuel

for use in the production of cement and also for consumption, and exports computer chips. The exchange rate is fixed, but one day the currency is suddenly devalued, perhaps because the government has run out of foreign reserves. This scenario has been repeated many times in many countries, notably in Latin America.

A depreciation tends to raise the price of tradable goods in domestic currency (both fuel and computer chips), increasing the demand for nontradable goods and the supply of exports. The expansionary effects of a depreciation can be understood by noting that a depreciation tends to increase the overall price level, lowering the real wages of workers and encouraging more hiring and increased production if there is unemployment. (Obstfeld and Rogoff 1996, Chapter 10, provide a more subtle discussion of how the output of nontradable goods will increase in response to the increased demand for such goods if prices or wages are sticky.)

The contractionary consequences arise from a number of effects on aggregate demand or supply. A depreciation can reduce demand by reducing real income, reducing wealth, and raising real interest rates; it can reduce aggregate supply by raising the cost of imported inputs, capital goods, or working capital, or by interrupting the supply of credit.

To illustrate the effect on real income, assume that the economy exports nothing, but only imports fuel. In this case a depreciation raises the domestic currency price of imported fuel, reducing the net income of the owners of the firms that use it as inputs in the production of cement. Also, the higher price of fuel reduces the purchasing power of consumers who use this product, with no offsetting increase in their incomes.

A depreciation also can reduce consumer demand by reducing real financial wealth, as the resulting domestic price increase will tend to reduce real money balances. If capital markets are not fully integrated with world markets (so that domestic interest rates are not anchored by world interest rates), the reduction in money balances will tend to create excess demand in the loan market, raising domestic interest rates. This, in turn, will depress investment demand and, as discussed below, also may adversely affect supply.

A depreciation may reduce aggregate supply by increasing production costs. In our example, a depreciation increases the price of tradable or imported inputs (computer chips) used in production. If equipment also is imported, a depreciation also may increase the cost of capital. As noted earlier, domestic interest rates also may rise following a depreciation, which may raise the cost of financing working capital.

External shocks

While the traditional literature focuses on the direct effects of depreciations on output, more recent work highlights more general conditions under which depreciations and output contractions may be closely timed. In particular, this literature seeks to explain cycles in which periods of relative exchange rate stability may be associated with surging foreign capital inflows and economic booms, followed by capital flow reversals, currency depreciations, and economic contraction. This research has emphasized (i) the contribution of cycles in external shocks and (ii) domestic conditions that influence the vulnerability of small open economies to shocks.

Well before the recent East Asian currency crises, Calvo, Leiderman, and Reinhart (1996) noted that declining world interest rates played a role in capital inflow surges in the first half of the 1990s in both Latin America and East Asia, and that such external factors contain an “important cyclical component, which has given rise to repeated booms and busts in capital inflows” (p. 124). Indeed, in the 1970s, low global real interest rates were associated with large capital flows to developing countries (in the form of bank lending) that were reversed in the early 1980s, in the wake of steep increases in these interest rates. A wave of currency and debt crises and economic contraction in developing countries followed.

The Mexican peso crisis of 1994, which was followed by a severe contraction in output, also was preceded by an increase in U.S. interest rates, which, along with political uncertainty in Mexico, made investing in the U.S. market more attractive relative to emerging markets.

Other external shocks, such as unfavorable movements in the terms of trade (the ratio of export to import prices) also have played a role. For example, in Mexico, sharp increases in oil prices in the 1970s contributed to an economic boom fueled by government spending and foreign borrowing. The stagnation in oil prices in the early 1980s adversely affected Mexico's export revenues and output performance, contributing to the debt crisis Mexico experienced after 1982. Steep increases followed by sudden declines in semiconductor prices contributed to similar economic cycles (booms and slowdowns) in a number of East Asian economies prior to the currency crises these countries experienced in 1997.

Vulnerable financial sectors

Global shocks do not have the same effects on all open economies, suggesting that domestic conditions in these economies determine how they will be affected. For example, adverse terms of trade shocks appear to have contributed to slowing growth in a number of East Asian economies after 1995, eventually leading to sharp currency depreciations in 1997. However, the impact on Thailand was far more severe than the impact on Singapore. In Thailand, GDP growth fell from 5.5% in 1996 to -9.4% in 1998, while in Singapore GDP growth fell from 7.5% to 0.3% over the same period.

Recent explanations for differences in the severity of output contractions focus on the vulnerability of the financial sector. However, there is disagreement on the reasons for such vulnerability. Some authors stress that economies that are open to foreign borrowing may become increasingly illiquid. As is well known, the return on illiquid investments (such as plant and equipment) in developing countries is typically higher than the return on liquid investments (such as U.S. Treasury bills) in developed markets. A model by Chang and Velasco (1998) shows that under these conditions, residents in developing countries may find it advantageous to borrow as much as possible from abroad (short-term) in order to invest in illiquid assets at home. Over time, the short-term foreign currency liabilities of domestic residents will exceed assets, making the economy vulnerable to a sudden loss of confidence or panic. Such a loss of confidence can mean interruptions in foreign financing that can trigger a financial crisis, because banks would have to liquidate long-term investments at a loss to pay off short-term foreign loans as they mature. As a result, one would see a close timing of depreciation and output contraction.

Others focus on the role of government guarantees in encouraging risky behavior (moral hazard), making the financial system vulnerable to shocks. For example, Corsetti, Pesenti, and Roubini (CPR 1998) formulate a model in which an "elite" in a developing country can borrow from abroad to finance investment and expect the government to provide financial support should investment projects fail. CPR show that this type of government guarantee implies over-investment (in excess of the amount consistent with profit maximization), which may be financed by foreign borrowing. The guarantee also prompts borrowers to cover any losses or cash shortfalls by increasing their foreign borrowing (this is known as "evergreening"). However, once the debt becomes too large (relative to foreign exchange reserves), the government guarantee is no longer credible. Foreign creditors then refuse to roll over the debt, triggering a financial crisis. In response, the government incurs a budget deficit to make good on its guarantee and cover the liabilities of domestic residents. As people expect the deficit to be financed by money creation and higher inflation, the currency collapses. Investment and output also decline as a result of the withdrawal of government guarantees and the associated interruption in foreign credit. Similar arguments are made by Burnside, Eichenbaum, and Rebelo (1999).

Recent discussions of financial sector vulnerability also point out that depreciations may be contractionary by worsening the condition of the financial sector. This may disrupt economic activity by interrupting the supply of credit. For example, moral hazard also may encourage unhedged foreign

currency borrowing (McKinnon and Pill 1998, Burnside, Eichenbaum, and Rebelo 1999), in which case a depreciation would reduce the availability of credit by bankrupting borrowers and weakening the financial condition of lenders. A depreciation also may reduce credit by reducing the value of collateral that lenders may require to provide credit (Kasa 1998).

Conclusions

This brief overview has highlighted alternative scenarios under which exchange rate depreciations may be associated with output contraction. Future research could further explore which of the alternative explanations for closely timed depreciations and output contraction are most consistent with the empirical evidence and what policy approaches could reduce the frequency, magnitude, or duration of such contractions.

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