

# FRBSF WEEKLY LETTER

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## Regional Effects of the Peso Devaluation

Around the turn of this year, the value of the Mexican peso fell sharply in foreign exchange markets. Last week's *Letter* (Moreno 1995) reviewed some of the causes of the peso devaluation. This *Weekly Letter* describes some of the possible consequences for regional economic activity in the Western United States.

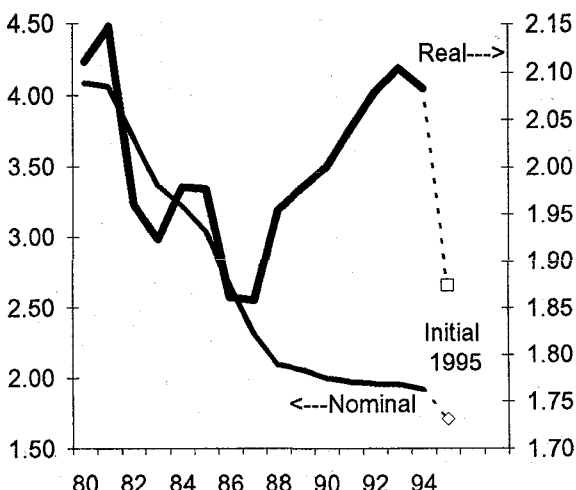
The recent changes in Mexico's economic situation likely will dampen U.S. production in 1995 by reducing our net exports. For the Twelfth District, historical trade patterns suggest that a moderate reduction in net exports to Mexico would measurably affect economic growth in only two of the nine states, California and Arizona, where trade links with Mexico are strong. A moderate reduction in national net exports to Mexico likely would hold back economic growth in California only a little in 1995. In Arizona, the impact would be somewhat greater; however, the state's economy has been expanding rapidly, and it should be able to absorb the shock while still posting above-average growth.

### Peso devaluation

The Mexican government maintained a target exchange rate policy throughout most of 1994, intervening in foreign exchange markets when needed to keep the nominal exchange rate within a relatively narrow, pre-defined cone that would allow only a modest depreciation of the peso over time. In late December, Mexico abandoned its previously announced targets, and the peso cost of buying dollars jumped from 3½ to about 5½ pesos to the dollar, a devaluation of about 35 percent.

Figure 1 shows estimated annual average indices through 1994 and the beginning of 1995 for nominal and real U.S.-Mexico exchange rates; the real exchange rate adjusts the nominal exchange rate for differences between U.S. and Mexico consumer prices. Since we make the beginning of 1995 estimate under the assumption that prices in the U.S. and Mexico did not have time to adjust, the initial effect of the devaluation was to

**Figure 1**  
U.S.-Mexico Nominal and Real Exchange Rates  
(logarithm of \$/peso exchange rate)



decrease both the nominal and real exchange rates by about 35 percent.

Theoretically, this decline in the real exchange rate could slow the U.S. economy through two channels. First, it could slow U.S. exports to Mexico, because a U.S.-produced good at a given dollar price cost a resident of Mexico about 35 percent more pesos than it did before the devaluation. Second, it could crowd out U.S. production by increasing imports from Mexico, because Mexican-produced goods at their initial peso prices became relatively less expensive than U.S.-produced goods. To quantify these effects, we need an assessment of the extent to which the real exchange rate change will persist and an understanding of the importance of U.S. trade with Mexico.

### U.S.-Mexico trade

Mexico has trade relations with a number of countries, but the United States is its primary trading partner. In recent years, the United States

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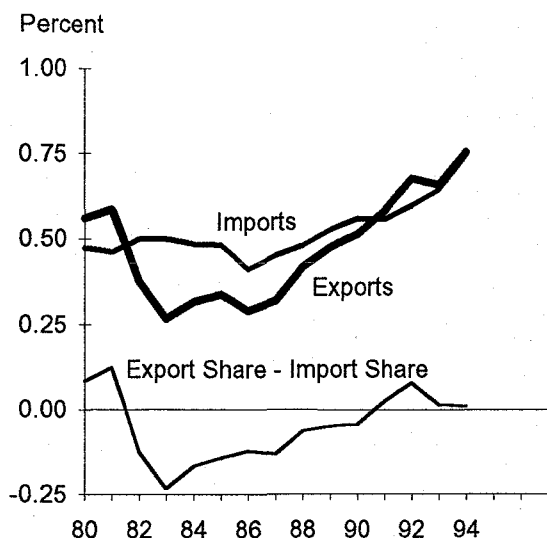
has been the source of about 70 percent of Mexico's imports and the destination for about 80 percent of Mexico's exports. Historically, when there has been a large change in Mexico's overall trade balance, the United States has borne most of the adjustment.

From the U.S. perspective, however, Mexico is one among several important trading partners. Since the early 1980s, the trade linkages between the U.S. and Mexico have grown, but trade with Mexico remains a limited portion of overall U.S. foreign trade. In 1994, about 10 percent of all U.S. exports were to Mexico, and about 7 percent of our imports came from Mexico. In addition, these trade flows are only a small fraction of overall U.S. production; in 1994, both exports to Mexico and imports from Mexico were about  $\frac{3}{4}$  percent of nominal U.S. GDP (see Figure 2).

## History

This is not the first time Mexico's nominal exchange rate suffered a large devaluation. As Figure 1 showed, the nominal exchange value of the peso against the U.S. dollar declined steadily from 1981 to 1987. In this period of rapid nominal devaluation, Mexico's inflation rate was quite a bit higher than in the United States, limiting the drop in real terms somewhat. However, the real exchange rate index still declined substantially.

**Figure 2**  
Exports to Mexico and Imports from Mexico  
as a Share of U.S. GDP



In the 1980s, the largest one-year drop in the Mexico-U.S. real exchange rate was a 35 percent depreciation in 1982, when the Mexico debt crisis erupted. Given this large real devaluation and related stresses on the Mexico economy, the U.S. bilateral merchandise trade surplus with Mexico swung into deficit (see Figure 2, Export Share-Import Share). Our exports to Mexico, not U.S. imports from Mexico, bore the bulk of this adjustment. Between 1981 and 1983, U.S. exports to Mexico fell about 50 percent, from about 0.6 percent of U.S. GDP in 1981 to about 0.3 percent of U.S. GDP in 1983.

## Macroeconomic effects of the recent devaluation

The initial real devaluation of the peso at the beginning of 1995 was comparable in magnitude to the 1982-1983 experience. However, there is a great deal of uncertainty about what will happen to the real exchange value of the peso over the course of 1995 as a whole. The eventual extent of real devaluation will depend not only on what else happens to the nominal exchange rate, but also on what happens to inflation in Mexico relative to inflation in the United States.

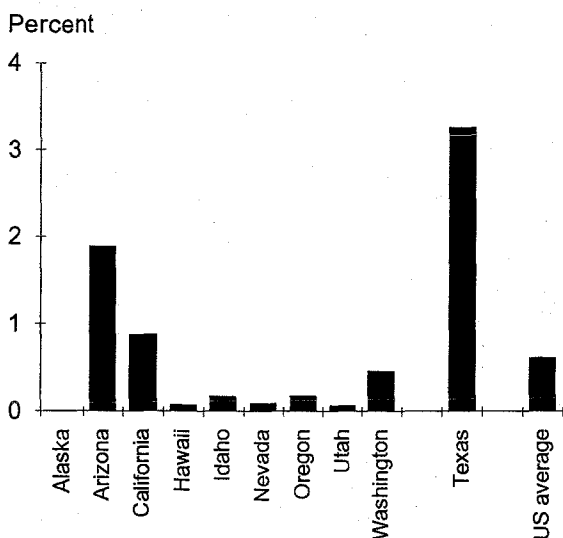
For example, if the peso-dominated wages in Mexico were to rise rapidly, and the nominal peso/dollar exchange rate did not change much from current levels, that would offset some of the initial loss of purchasing power in Mexico. Accordingly, rapid wage inflation could blunt the impact on U.S. exports. Similarly, at a given nominal exchange rate, a rapid rise in the prices of goods produced in Mexico would tend to restore some of the price competitiveness of U.S.-produced goods, muting the impact of the nominal devaluation on imports from Mexico to the United States.

A point of reference for illustrating possible regional effects, then, requires some judgment about future developments in Mexico's economy. In this regard, we refer to the objectives put forward by the Mexican government in January, which called for a \$14 billion improvement in the Mexican current account in 1995. If all of the \$14 billion improvement in the Mexican current account comes from a lower trade deficit—a reasonable assumption—and if the bulk of this comes from trade with the United States, then we should see a similar-sized swing in the U.S. bilateral merchandise trade deficit. Such a \$14 billion swing in the U.S.-Mexico trade balance would reduce U.S. GDP by about 0.2 percent in 1995.

### Regional effects

Figure 3 displays 1992 exports to Mexico as a share of GDP for the U.S., for the nine states of the Twelfth District, and for Texas, because it is by far the most prominent. As the figure indicates, most of the Twelfth District states are less dependent on exports to Mexico than the national average. After Texas, at 3 percent of state GDP, the next most dependent state is Arizona, at 2 percent, and then California at 0.9 percent, which is closer to the U.S. average of 0.6 percent. Therefore, relative to the national average, exports to Mexico are 1½ times as important to the California economy and about three times as important to Arizona.

**Figure 3**  
**Exports to Mexico as a Share of State GDP**



Source: State GDP estimates: Bureau of Economic Analysis. State export estimates are based on exporter location. They are computed by scaling Dept. of Commerce (1993) origin-of-movement estimates by the Bureau of Census (FT-900 Supplement) ratio of state exports on an exporter location basis to state exports on an origin-of-movement basis.

A rough approximation of the regional effect of the devaluation of the peso can be made by multiplying the U.S. GDP effect by the figures for the relative importance of trade with Mexico for the individual state. For example, if exports to Mexico drop sharply in 1995 and imports pick up somewhat, holding down U.S. GDP by the 0.2 percent direct effect implied by the magnitude of the Mexican government's projection of the swing in the current account balance, then production in California likely would be held down by about 0.3 percent in 1995, which is one and a half times the overall U.S. GDP effect. The relative importance figure for Arizona implies about a 0.6 percent drop in state product, given a 0.2 percent overall U.S. GDP effect. The effects on other District states are implied to be negligible relative to the overall size of the state economies, although producers in some particular industries might see larger effects.

In summary, these illustrative calculations suggest that changes in Mexico-U.S. foreign trade of the size consistent with the Mexico economic program would have a noticeable impact on the growth of output in two District states, Arizona and California. However, the Arizona economy has been expanding rapidly, with a 5 percent gain in employment last year, and recent indicators suggest that the California recovery also has some momentum (Mattey and Dean 1995). Thus, on one estimate, a Mexican foreign trade shock of modest proportions should not derail the overall pace of growth in these states, although considerable uncertainty remains about how Mexico's economy will evolve in 1995.

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