

Discussion of

**Liberalization, Growth and Financial Crises:
Lessons from Mexico and the Developing World**
by Aaron Tornell, Frank Westermann, and Lorenza Martínez

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Aaron Tornell, Frank Westermann, and Lorenza Martínez have written an excellent paper that deals with important issues and that has caused me to reexamine my own thinking on these issues. The authors attempt to answer the question, Why has Mexico experienced less-than-spectacular growth since its *apertura*, or opening to foreign trade and investment, in the late 1980s? I agree with much of what this paper has to say: Those of us who would gladly teach that free trade and open capital markets are the best policies for developing economies to follow have a challenging task in accounting for the ambiguous evidence on that score from some countries over the past decade or so.

What are the major points in this paper with which I agree?

- Mexico's economic performance following its *apertura*, although good compared with that over the period 1982-88, is disappointing compared with what policymakers and proponents of free trade and capital flows had expected.
- It is important to identify the feature or features of Mexico's openness policies that have been responsible for retarding economic growth since 1988. Circumstantial evidence on the performance of the Mexican domestic financial system—in particular that of commercial banks—identifies poorly designed reform of the banking system as a likely culprit.
- Data on both output levels and relative prices indicate that a key ingredient in any successful theory of what has happened in Mexico since 1988 will be a mechanism that accounts for the ups and downs of the nontradables sector relative to the tradables sector.
- Ultimately, to account for the growth, or lack of it, in Mexico and in other countries that have undergone similar experiences with trade and financial liberalization, models are needed that focus on data on productivity and sources of financing at the firm or plant level.

The bulk of the authors' analysis relies on regressions run on cross-country data for the period 1980-99. Raphael Bergoeing, Patrick Kehoe, Raimundo Soto, and I (BKKS) have studied the determinants of Mexican economic performance since 1980 by focusing on the contrast between the experience of Mexico and that of Chile.¹ BKKS's analysis produces many conclusions that echo those of the present authors. I will highlight here these areas of agreement, but I will also emphasize the areas of disagreement. In particular, the contrast between Mexico and Chile and the timing of events in Mexico cast some doubt on the authors' conclusion that the source of Mexico's disappointing growth performance has been that producers of nontradables were starved of investment funds after the 1995 crisis.

Before exploring the contrast between Mexico and Chile, I want to stress how much more important it is to study economic fluctuations in a country like Mexico than it is to study economic fluctuations in a country like the United States. Figure 1 compares aggregate economic performance in Mexico over the period 1920-2002 with that of the United States.² Notice that, apart from the period of the Great Depression and World War II, the path of real GDP per working-age (16 to 64 years old) person in the United States closely follows a 2 percent growth trend. Business cycle fluctuations in the United States since World War II have been relatively trivial. In contrast, economic fluctuations in Mexico since 1980 are closer in magnitude to those of the 1930s and 1940s in the United States than they are to what we in this country now call the business cycle.

Great Depressions in Chile and Mexico

BKKS examine the economic crises that occurred in Chile and Mexico in the early 1980s and their aftermaths using the Great Depressions methodology developed by Harold L.

¹ Bergoeing and others (2002).

² The data used here are taken from Bergoeing and others (2002) and updated to 2002. These data are available at www.econ.umn.edu/~tkehoe/.

Cole and Lee E. Ohanian and by Edward C. Prescott and myself.³ This methodology uses growth accounting and simple calibrated dynamic general equilibrium models to examine alternative explanations for large economic fluctuations like that of the Great Depression in the United States. Chile and Mexico, like most Latin American countries, experienced severe economic crises in the early 1980s. Their recovery paths after the crisis differed markedly, however. In Chile, output per working-age person has grown at an annual average of 4.0 percent 1983-2002. In Mexico, in contrast, output per working-age person has grown at an annual average of 0.6 percent 1988-2002. Figure 1 shows that Mexico has lost more than 30 percent of output per working-age person with respect to the 2 percent growth trend since the early 1980s

BKKS's striking finding is that the main determinants of the depressions in Chile and Mexico were not the drops in inputs of capital and labor that traditional theories of depressions stress, but rather drops in the efficiency with which these inputs are used, measured as total factor productivity (TFP). Figure 3 presents data on TFP in Chile and Mexico over the period 1980-2002. Exogenous shocks like the deteriorations in the terms of trade and the increases in foreign interest rates that buffeted Chile and Mexico in the early 1980s can cause a decline in economic activity of the magnitude usually observed over a business cycle. BKKS argue that it was mistaken government policy that turned this sort of a decline into the severe and prolonged drop in economic activity below trend that constitutes a depression. In both Chile and Mexico the mistaken government policy involved the domestic banking system. Rather than focus on the causes of the depressions in Chile and Mexico, however, BKKS concentrate their attention on why the subsequent growth experiences in these two countries were so different.

[figure 3 about here]

Comparing data from Chile and Mexico allows BKKS to reject two popular explanations of the economic performances of these two countries as explanations for the difference: The first is Vittorio Corbo and Stanley Fischer's hypothesis that Chile's rapid recovery was driven by export growth;⁴ the second is Jeffrey Sachs's hypothesis that Mexico's

³ Cole and Ohanian (1999); Kehoe and Prescott (2002).

⁴ Corbo and Fischer (1994).

stagnation was due to a large external debt overhang that discouraged new investment.⁵ On the one hand, the data in the top panel of figure 4 show that, during the late 1980s and early 1990s, exports actually grew much faster in Mexico than in Chile, yet Chile grew while Mexico stagnated. On the other hand, the data in the bottom panel of figure 4 show that Chile's ratio of external debt to GDP was much higher than Mexico's through the 1980s, and growth accounting shows that Mexico's stagnation was not caused by the lack of new investment.

BKKS's alternative explanation for the difference in economic performance between Chile and Mexico is based on the different timing of structural reforms in the two countries. In the 1970s and early 1980s, Chile privatized extensively and undertook reforms in trade policy, fiscal policy, banking, and bankruptcy law, thus setting the stage for the country's successful performance of the late 1980s and 1990s. Mexico, in contrast, postponed these reforms and stagnated. BKKS use numerical experiments with a calibrated dynamic general equilibrium model to argue that the only reforms that can explain the difference in economic performance are those whose effects show up primarily as differences in productivity, not those that show up as differences in factor inputs. This result rules out fiscal reforms, which primarily affect the incentives to accumulate capital and to work. Moreover, the timing is not right for fiscal reforms as an explanation: both Chile and Mexico reformed their tax systems in the mid-1980s, and these reforms had similar impacts on investment; hence these reforms cannot account for the different paths. Like the present authors, BKKS identify the lack of reform in the domestic financial system as the likely culprit in Mexico's lack of growth. Figure 5 shows that the trajectory of private credit was substantially lower in Mexico than in Chile.

The matter of timing is crucial. BKKS argue that reforms in trade policy and privatization were less important than those in banking and bankruptcy law, precisely because Chile had already reaped most of the benefits of these reforms, whereas Mexico was starting to reap them precisely when Mexico was stagnating and Chile was growing. BKKS conclude that the crucial difference between Chile and Mexico is that Chile was

⁵ Sachs (1989).

willing to pay the costs of reforming its banking system and of letting inefficient firms go bankrupt, and Mexico was not.

How does BKKS's analysis compare with that of Tornell, Westermann, and Martínez? Much of the relationship is complementary. BKKS's growth accounting shows that any successful theory of Mexico's lack of growth needs to work through low TFP growth, not through low levels of investment or employment. The explanation of Tornell and coauthors would be that it is not that levels of investment were low after the crisis in 1995, but that lack of reform in the domestic banking system led to this investment being misallocated to the tradables sector rather than to the nontradables sector. Furthermore, in their model, the lack of output of nontradables starved the tradables sector of intermediate inputs, resulting in lower productivity there as well.

BKKS also conclude, as do the present authors, that problems with contract enforcement in Mexico have contributed to low productivity. Once again it is important to remember that growth accounting indicates that Mexico's problem is not lack of aggregate investment: it is not that lack of enforcement has led to lower investment, but rather that lack of enforcement has led to investment being allocated inefficiently. A problem with this sort of hypothesis is the lack of data to prove or disprove it. The present authors do the best they can with data on imputed tax evasion and criminal arrests for theft. Studying Chile and Mexico, BKKS use data on business bankruptcies in Chile from that country's *Fiscalía Nacional de Quiebras* of the *Ministerio de Justicia* (National Attorney's Office for Bankruptcies). It is telling that no such agency existed in Mexico before the bankruptcy reform in 2000, so that no such data existed. The impact of contract enforcement problems on economic growth and industrial organization is a topic that merits more study. Erwan Quintin, for example, shows that inadequacies in contract enforcement can account for most of the differences in the distribution of firm size, and a large part of the difference in incomes, among Mexico, the United States, and Argentina.⁶

Some doubts

The data depicted in the bottom panel of figure 1 highlight the contrast between Mexican growth during 1950-81 and growth since then. The authors'

⁶ Quintin (2003).

analysis, in contrast, stresses the comparison before and after Mexico's opening in the late 1980s. Over the period 1988-2002, growth in real GDP per working-age person averaged 0.6 percent per year, a substantial improvement over the 3.0 percent average annual decline over the period 1981-88. Notice, however, that growth by this measure since 1988 comes nowhere near the average of 3.5 percent per year recorded over the period 1950-81. The sort of import substitution policy that Mexico followed during that period has fallen into such disrepute among both academic economists and policymakers that we often forget that Mexico did extraordinarily well as a closed economy up until 1981. One can argue (as I would) that the crisis of 1982-88 demonstrated that import substitution in Mexico was ultimately doomed to fail. Nonetheless, figure 1 suggests that the authors' decision to use data from 1980-99 is crucial in obtaining the favorable effects for openness in their growth regressions. Had their data included observations from the 1950s, 1960s, and 1970s, when such closed economies as Brazil and Mexico grew spectacularly, I suspect that their results would have been significantly different.

Concentrating on the authors' contrast of the period 1988-94 with the period 1995-2002, my doubts revolve around timing. According to the authors, nontradables-producing firms were financially constrained during 1995-2002, but not during 1988-94. Notice, however, that the data in my figures 1 and 2 show that Mexico grew much faster during the period when firms were financially constrained than it did during the period when they were not. Real GDP per working-age person grew by only 0.9 percent per year from 1988 to 1994. From 1995 to 2002 it grew by 1.8 percent per year, and it grew at an even faster rate—3.3 percent per year—if 2001 and 2002 are omitted. The authors suggest that “fire sales” on the part of financially constrained Mexican firms can account for the initially rapid growth after the 1995 crisis, and that the 2001-02 experience is what Mexico should expect in the future. They may be right, but I have my doubts. For example, my figure 5 shows that private credit in Chile fell sharply over the period 1984-91, yet figure 2 shows that Chile grew spectacularly during this period and afterward. Furthermore, the authors' story cannot account for

Mexico's disappointing growth experience over the period 1988-94, when firms were not financially constrained.

To be convinced by the authors' hypothesis on why growth had been disappointing in Mexico, I would want to see a calibrated version of their model that gets right not only the magnitudes of the changes in the important variables, but also the timing of these changes. Can the authors construct a model in which the problems in the banking system show up primarily as a misallocation of investment rather than as an underprovision of investment? Can the observed drop in TFP be driven by a misallocation of resources across the tradables and nontradables sectors that is consistent with the observed changes in relative prices? Can their model reconcile the lack of correlation of movements in TFP (figure 3) with the movements in private credit (figure 5)?

A conclusive confirmation or refutation of the authors' hypothesis will ultimately require more research based on microlevel data. I have some doubts about the mechanism that the authors posit as leading from lack of financing in the nontradables sector to lower productivity in the tradables sector: Mexican input-output data show that the nontradables sector is even more dependent on the tradables sector for intermediate inputs than vice versa. If tradables sector firms had free access to financing, why did they not develop in-house ways of obtaining the sorts of maintenance, repair, and transportation services cited by the authors as essential nontradable inputs into tradables production?

The authors' pessimistic view of Mexico's prospects depends crucially on data since 2000. The drop in Mexico's exports in 2001 and 2002 depicted in figure 4 is indeed alarming after a decade and a half of explosive growth. It is also undoubtedly true that Mexico still has a way to go in reforming and modernizing its economy. The political gridlock that is occurring during President Vicente Fox's term of office (2000-2006) is not helping to advance reform. Nonetheless, the authors' analysis leaves a lot unanswered: Why has the entry of foreign banks into the Mexican financial system not led to more efficient financing of domestic firms? Why has the bankruptcy reform of 2000 not solved the sorts of contract enforcement problems that they discuss? If the rapid real

exchange rate appreciation in Mexico over 1995-2000 accounts for the later slowdown in growth and drop in exports, why does the real depreciation over the period 2001-02 (and 2003) not presage a resurgence in growth?

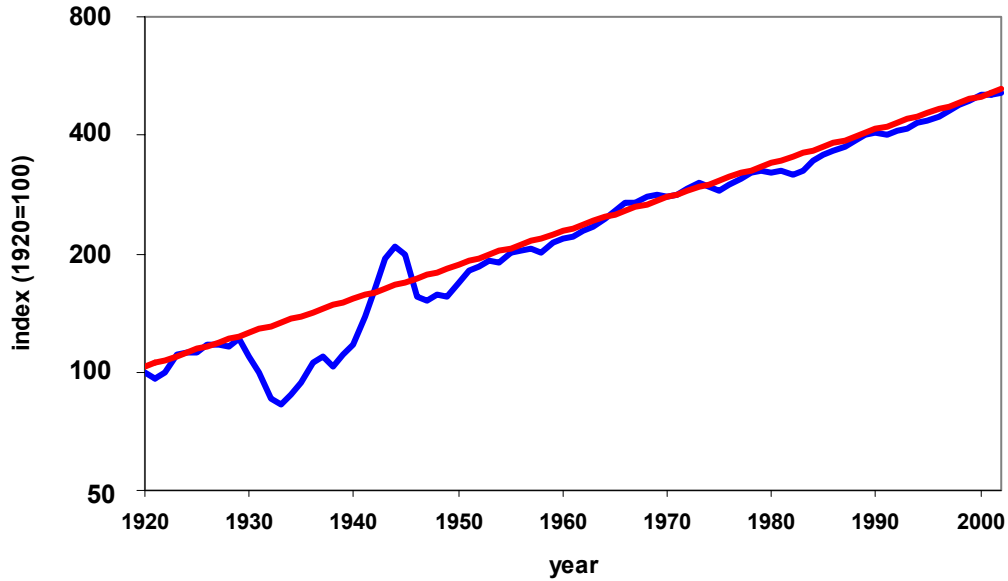
The data in figure 1 are a reminder of how minor a part of Mexico's growth experience is the experience of 2001-02. The question is whether the 2001-02 downturn signals a longer-term trend, or whether it will be quickly reversed. It may be that the drop in growth and in exports over the period 2001-02 is more a reflection of the collapse of manufacturing in the United States and of increased competition from countries like China than it is of the financial problems that are the authors' focus. Things could turn around sharply going forward. Only time, and more analysis, will tell.

References

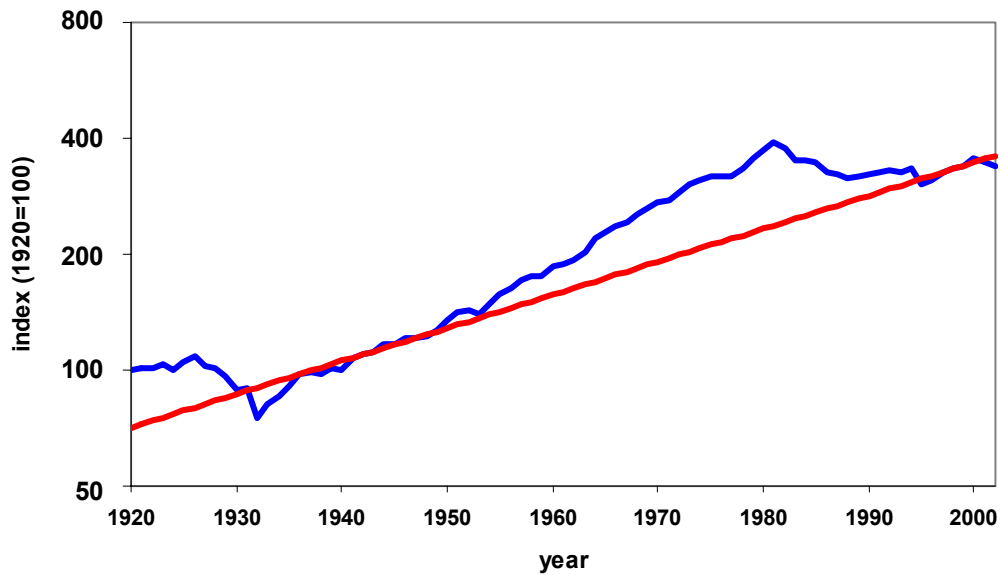
- Bergoing, R., P. J. Kehoe, T. J. Kehoe, and R. Soto (2002), "A Decade Lost and Found: Mexico and Chile in the 1980s," *Review of Economic Dynamics*, 5, 166-205.
- Corbo, V. and S. Fischer (1994), "Lessons from the Chilean Stabilization and Recovery," in B. Bosworth, R. Dornbusch, and R. Labán, editors, *The Chilean Economy: Policy Lessons and Challenges*. Washington, DC: The Brookings Institution, 29-67.
- Cole, H. L. and L. E. Ohanian (1999), "The Great Depression in the United States from a Neoclassical Perspective," *Federal Reserve Bank of Minneapolis Quarterly Review*, 23(1), 2-24.
- Kehoe, T. J. and E. C. Prescott (2002), "Great Depressions of the Twentieth Century," *Review of Economic Dynamics*, 5, 1-18.
- Maddison, A. (1995), *Monitoring the World Economy 1820-1992*, Paris: Organisation for Economic Co-Operation and Development.
- Quintin, E. (2003), "Limited Enforcement and the Organization of Production," Federal Reserve Bank of Dallas.
- Sachs, J. (1989), "The Debt Overhang of Developing Countries," in R. Findlay, G. Calvo, P. Kouri and J. Braga de Macedo, editors, *Debt, Stabilization and Development: Essays in Memory of Carlos Diaz-Alejandro*. Oxford: Blackwell, 80-102.

Figure 1

United States: Real GDP per working-age person



Mexico: Real GDP per working-age person



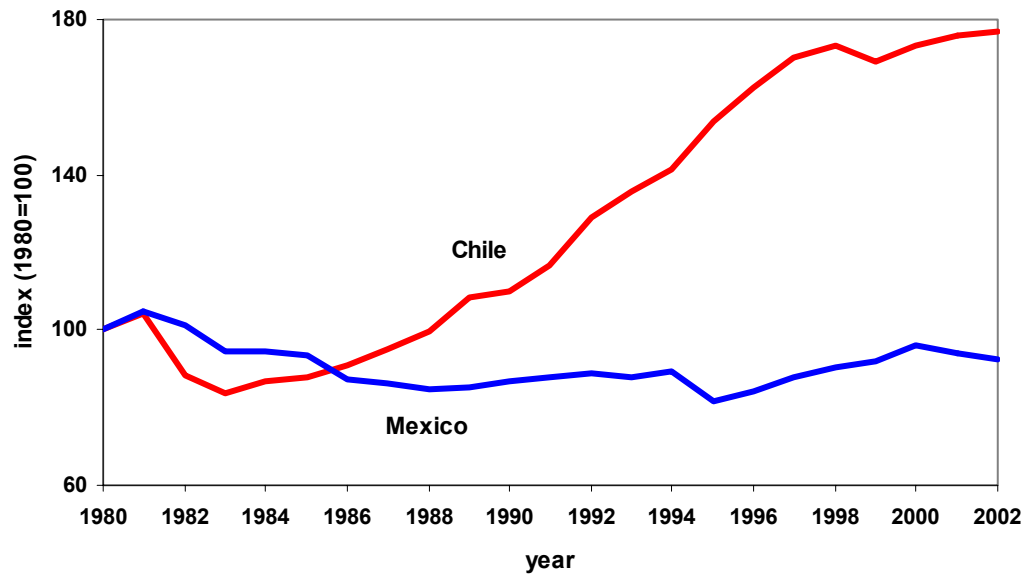
Sources: Author's calculations using data from Bureau of Economic Analysis; *Instituto Nacional de Estadística, Geografía e Informática*; Maddison (1995); the International Monetary Fund's *International Financial Indicators*; and the World Bank's *World Development Indicators*.

a. Persons aged 16-64.

b. Logarithm base 2 scale

Figure 2

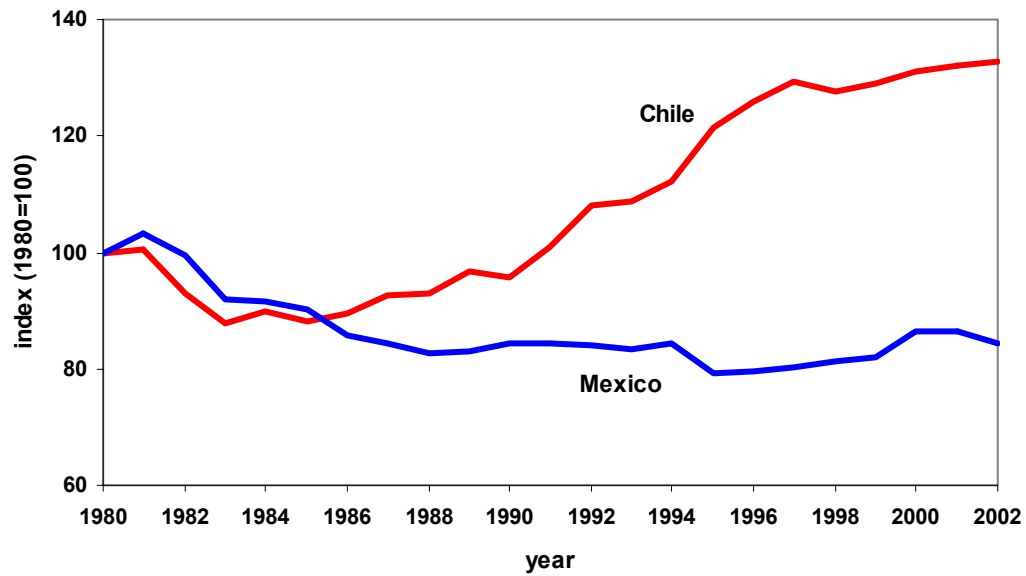
Chile and Mexico: Real GDP per working-age person



Sources: Author's calculations using data from the International Monetary Fund's *International Financial Indicators* and the World Bank's *World Development Indicators*.

Figure 3

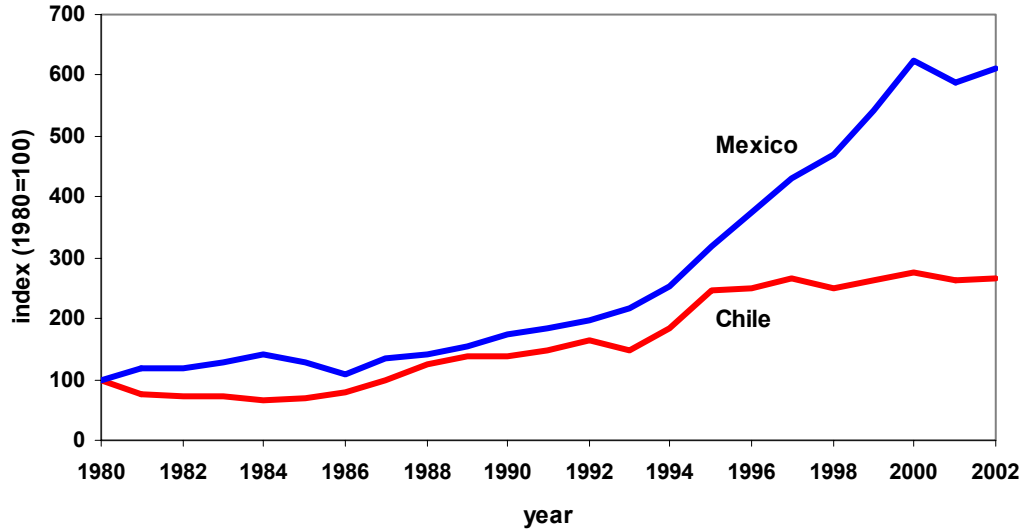
Chile and Mexico: Total factor productivity



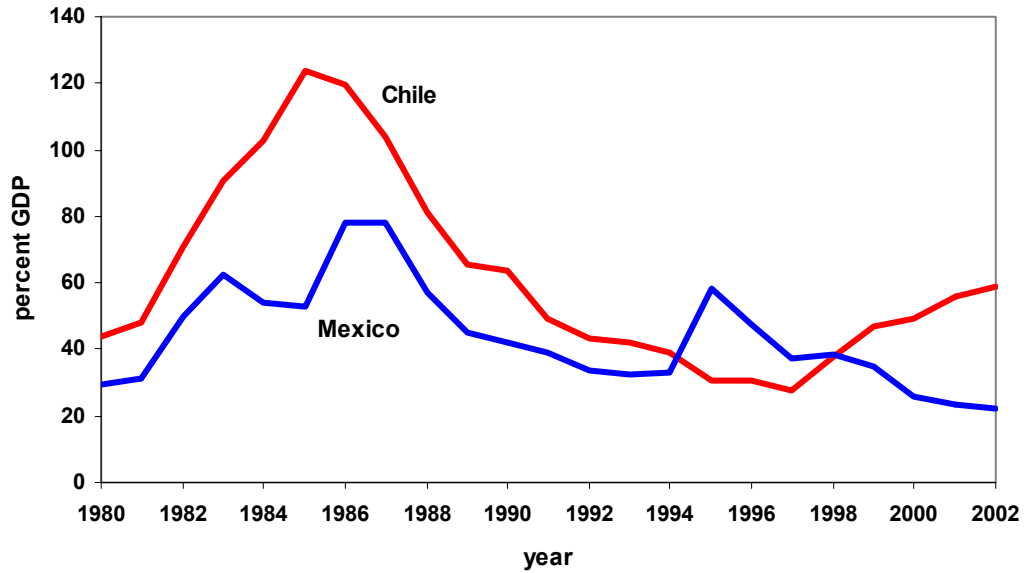
Sources: Author's calculations using data from the International Monetary Fund's *International Financial Indicators*, the Organisation for Economic Co-Operation and Development's *Main Economic Indicators*; *Penn World Table 5.6*, the Universidad de Chile's *Encuesta de Ocupación y Desocupación*, and the World Bank's *World Development Indicators*. See Bergoing and others (2002) for details.

Figure 4

Chile and Mexico: Merchandise exports
in U.S. dollars deflated by U.S. PPI



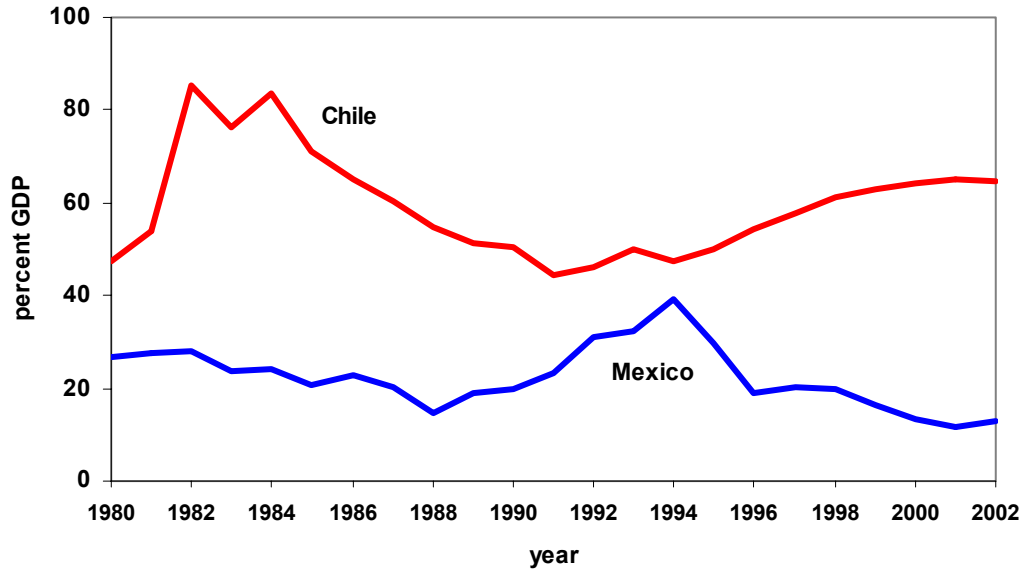
Chile and Mexico: Total external debt



Sources: Author's calculations using data from the International Monetary Fund's *International Financial Indicators*, the U.S. Bureau of Labor Statistics, the World Bank's *World Development Indicators*, and the World Trade Organization's *International Trade Statistics 2000*.

Figure 4

Chile and Mexico: Private credit



Sources: Author's calculations using data from the International Monetary Fund's *International Financial Indicators* and the World Bank's *World Development Indicators*.