A Decade Lost and Found:
Mexico and Chile in the 1980s

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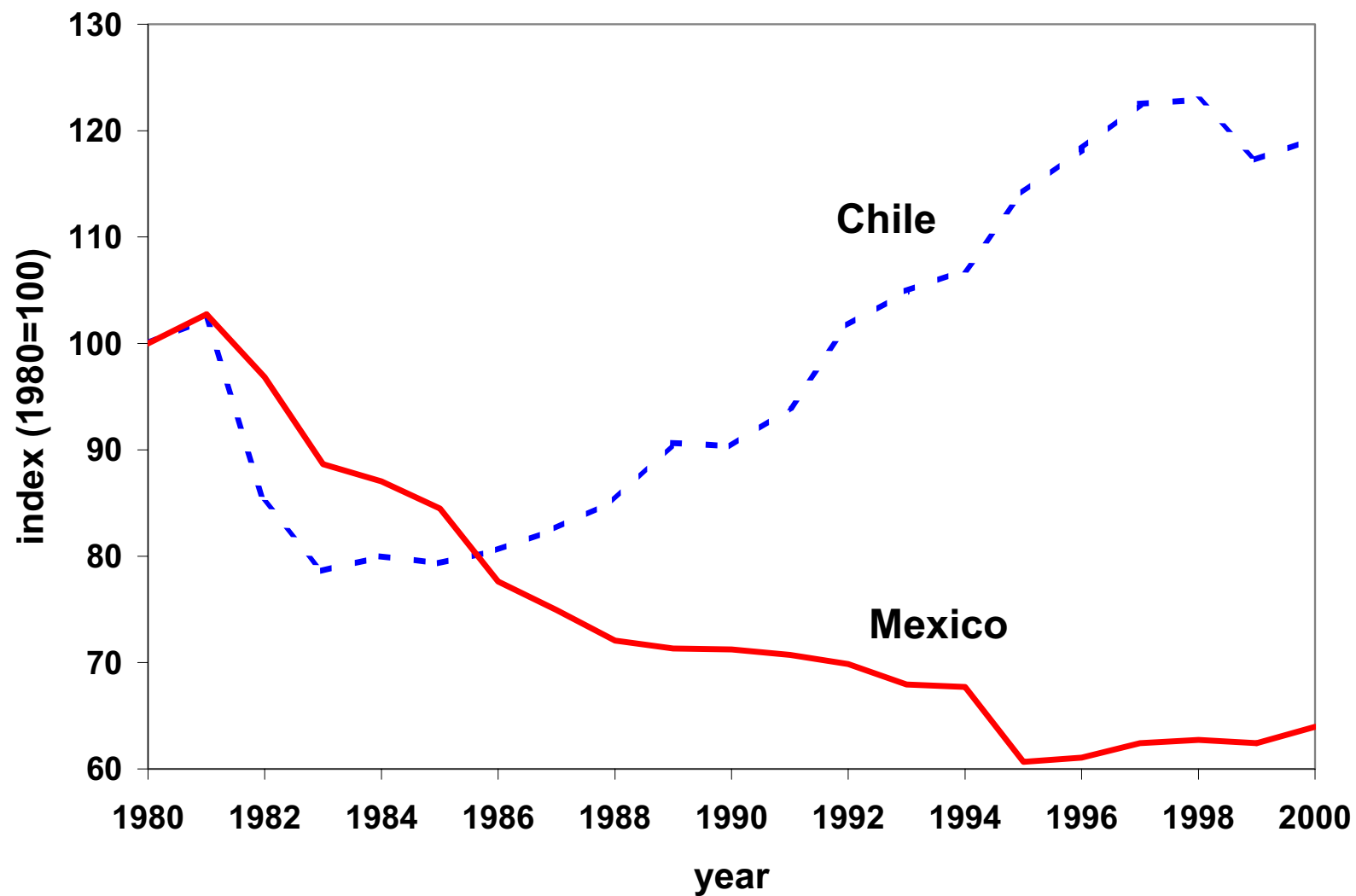
Similar crises in 1981-1983
- more severe in Chile than in Mexico

Different recoveries
- much faster in Chile than in Mexico

Why different pattern?

Real GDP per working-age (15-64) person detrended by 2 percent per year

Lessons from Great Depressions Project

- The main determinants of depressions are not drops in the inputs of capital and labor — stressed in traditional theories of depressions — but rather drops in the efficiency with which these inputs are used, measured as total factor productivity (TFP).

- 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 usual business cycle magnitude.

- Misguided government policy can turn such a decline into a severe and prolonged drop in economic activity below trend — a great depression.

Similar crises

Initial conditions:
- large foreign debt
- appreciating real exchange rate
- large trade deficit
- banking problems.

Shocks:
- jump in world interest rate
- plummet in copper and oil prices
- cutoff in foreign lending.

Stories for different recoveries

Standard monetarist story

- Different money growth rates induced different real responses.

Corbo-Fischer's story for Chile's fast recovery

- Sharp depreciation of real exchange rate and decline in real wages generated export-led growth.

Sachs's story for Mexico's slow recovery

- Debt overhang deterred investment.

Structural reforms story

- Structural reforms that took place in Chile in the 1970s took place in Mexico in the 1980s or 1990s.

Monetarist story
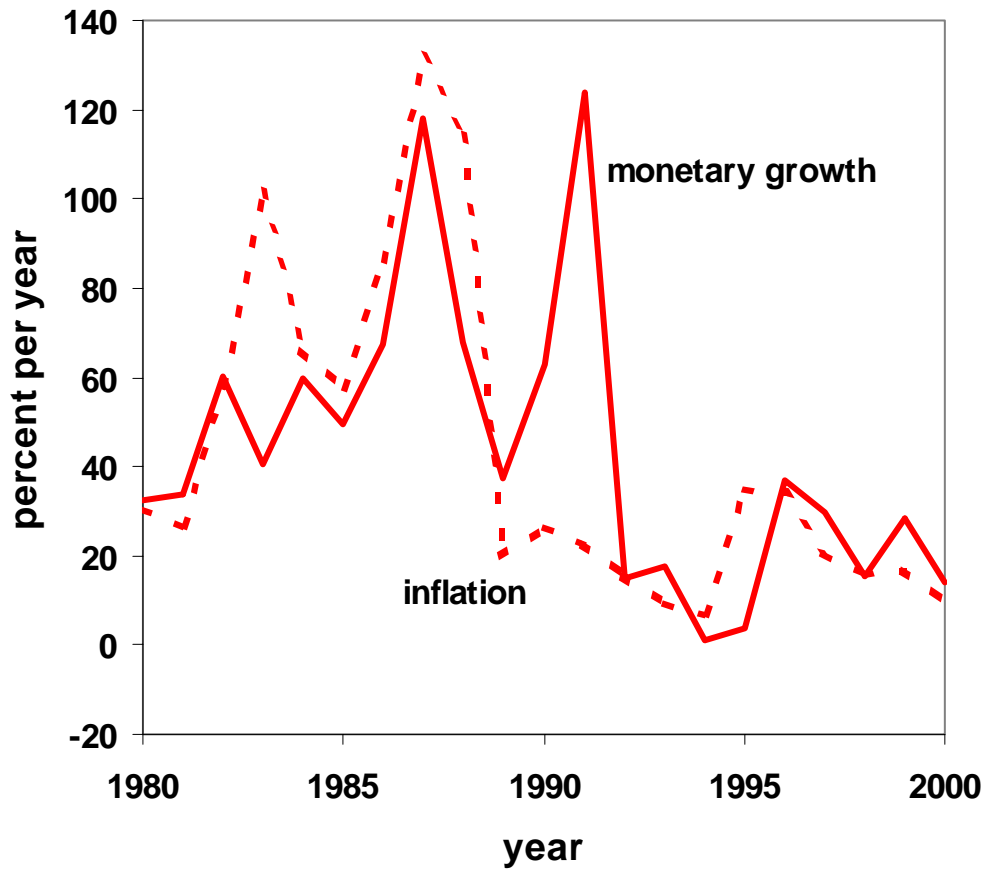
expansionary monetary policy

$$\Rightarrow \text{rapid growth}$$

Short of inducing hyperinflation, the more rapidly a country in a depression reflates, the better.
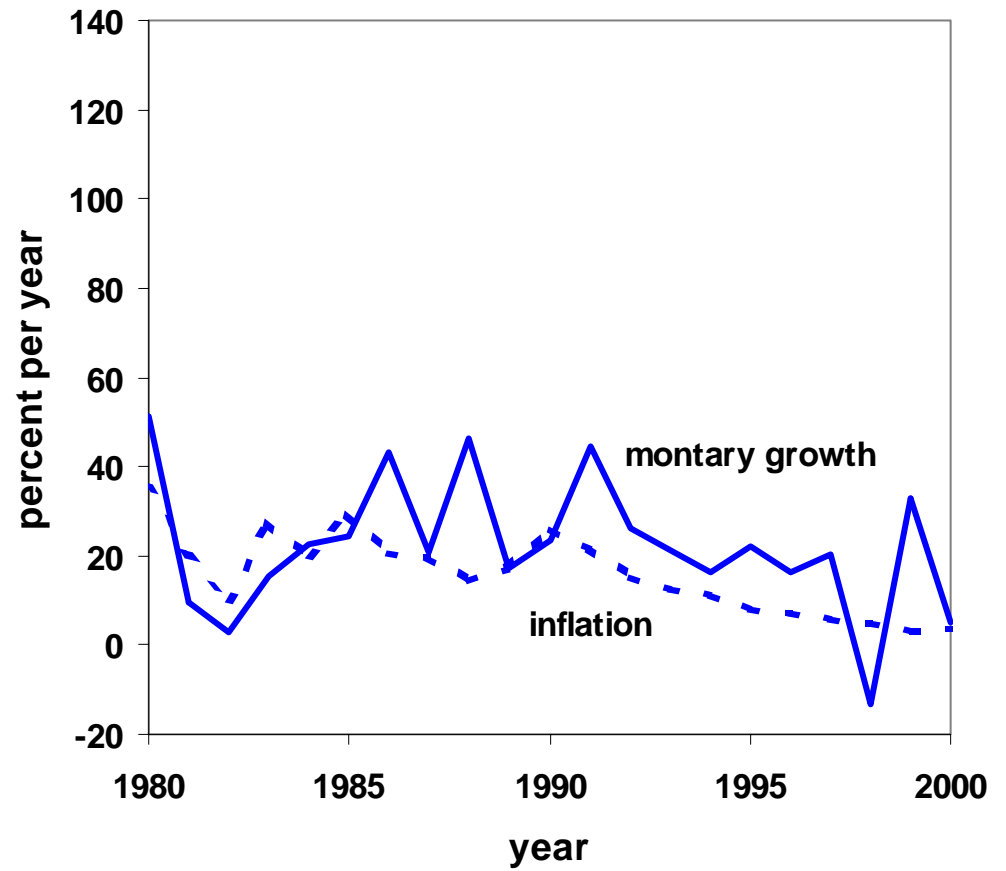
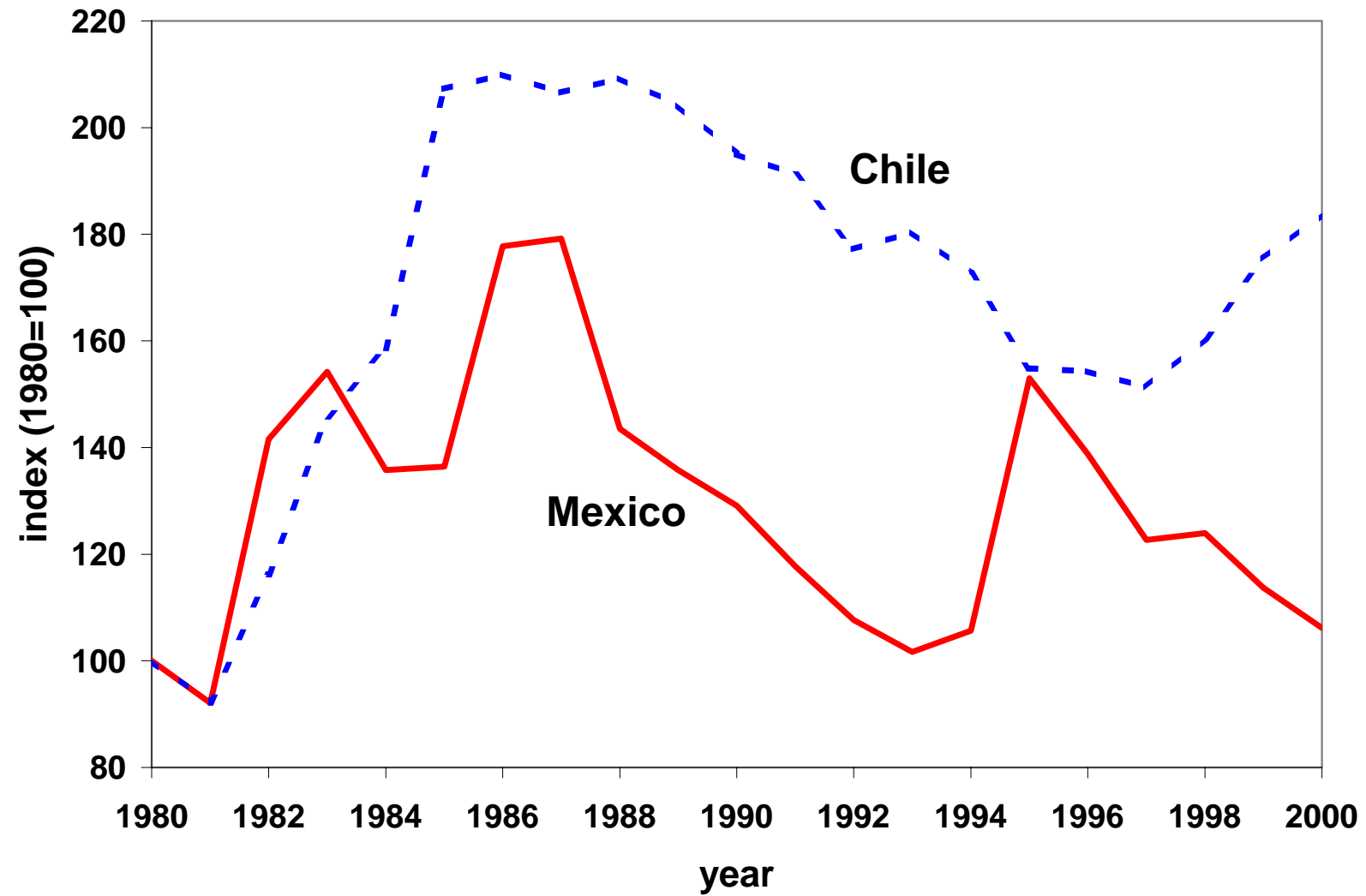What happened in Mexico and Chile?

Inflation and Monetary Growth
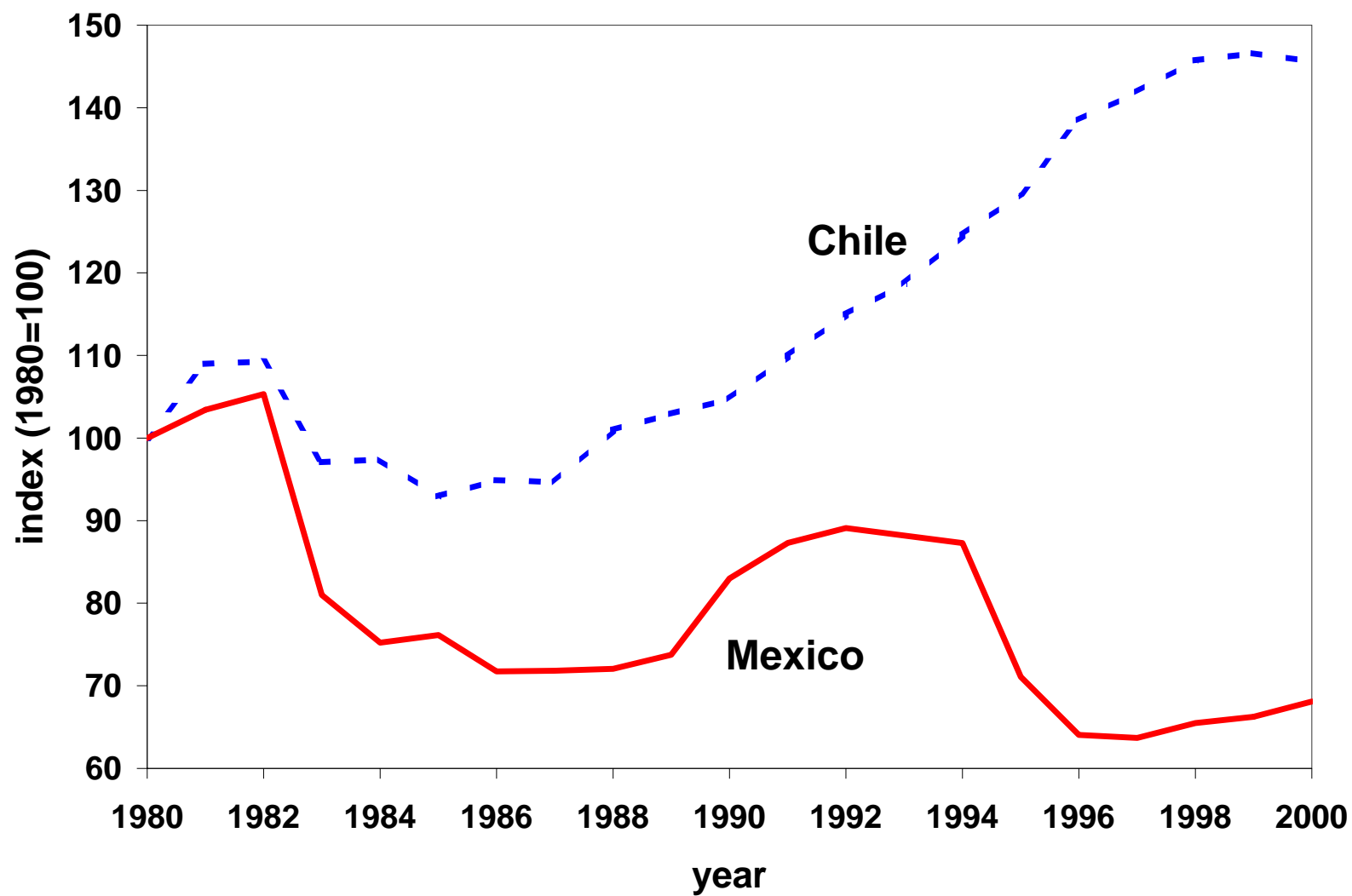
Corbo-Fischer's story for Chile

Sustained real depreciation of the real exchange rate and decline in real wages generated export-led growth in Chile.
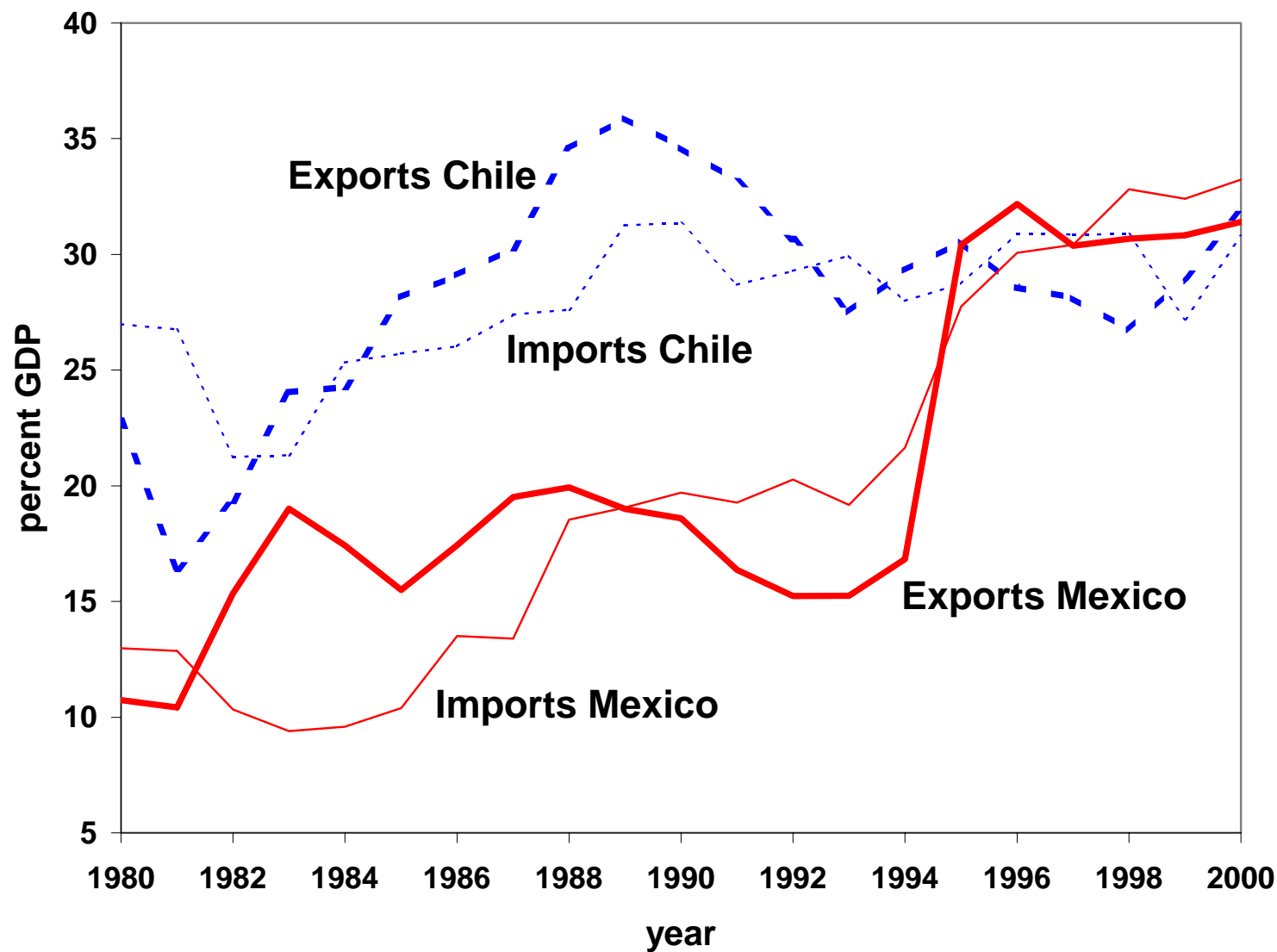
What about Mexico?

Real exchange rate against U.S. dollar
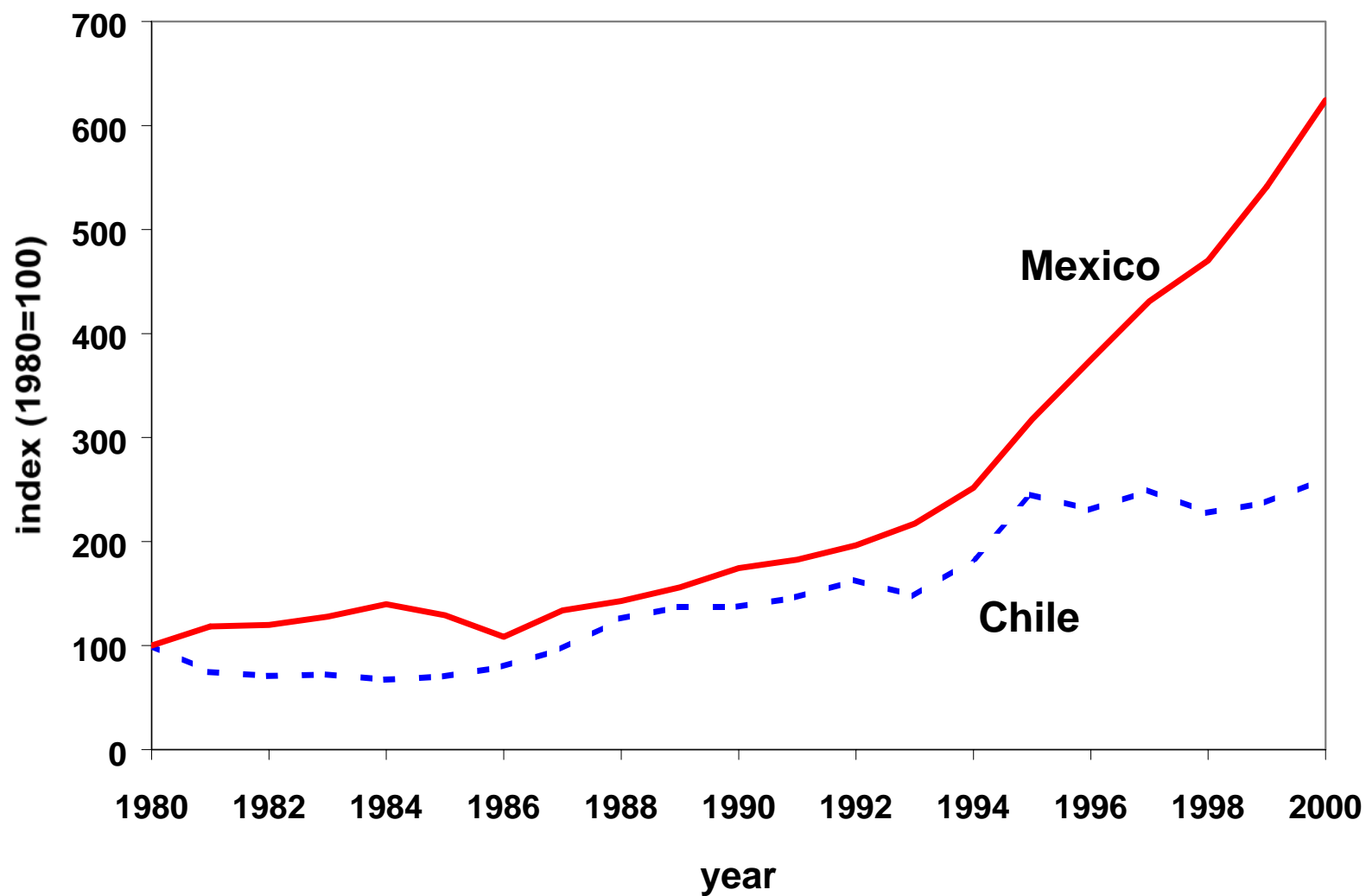
Index of real wages in manufacturing

International trade as a percent of GDP

percent GDP (y-axis)

year (x-axis)

Exports Chile

Imports Chile

Exports Mexico

Imports Mexico

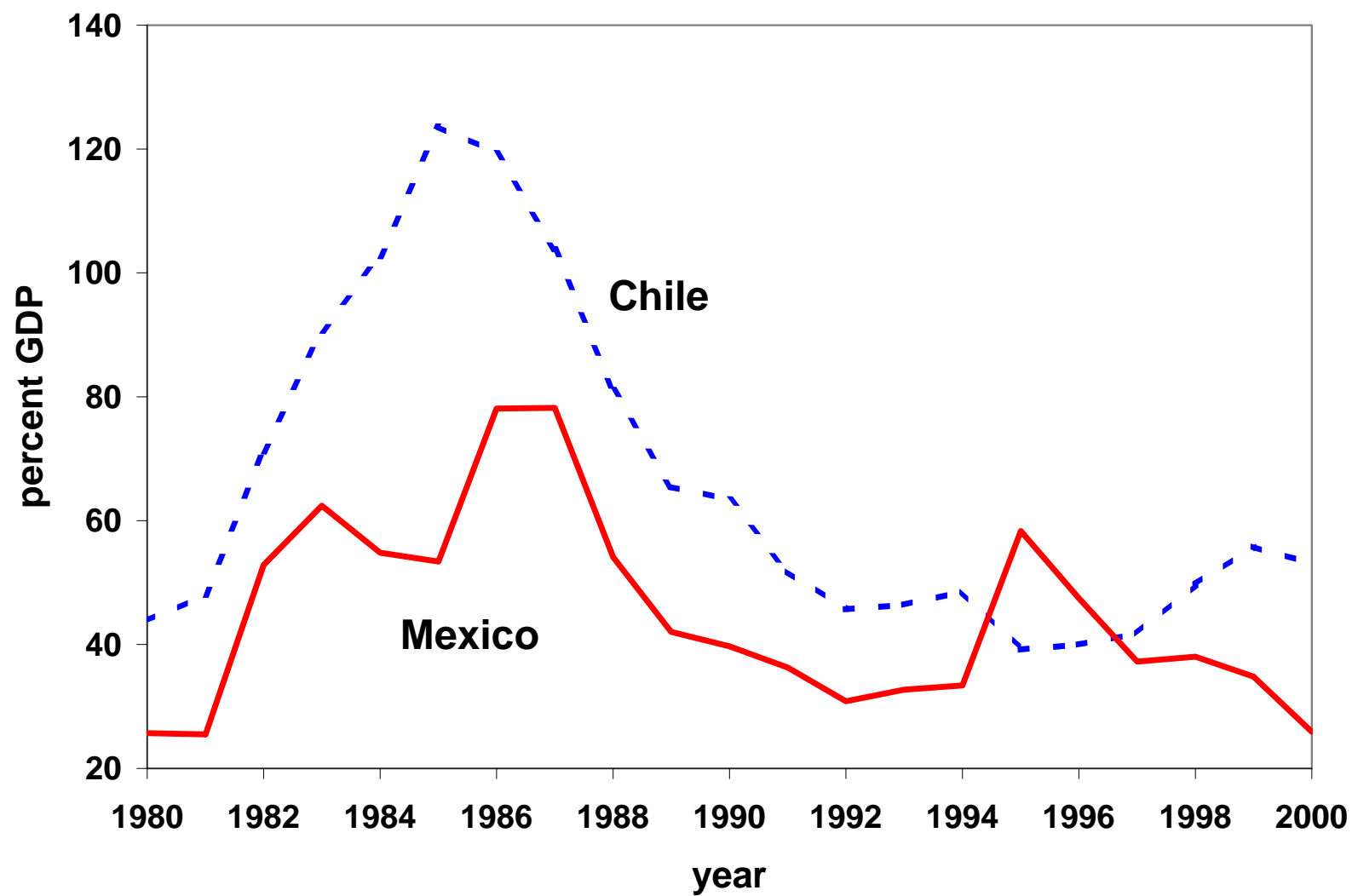# Export value in U.S. dollars deflated by U.S. PPI

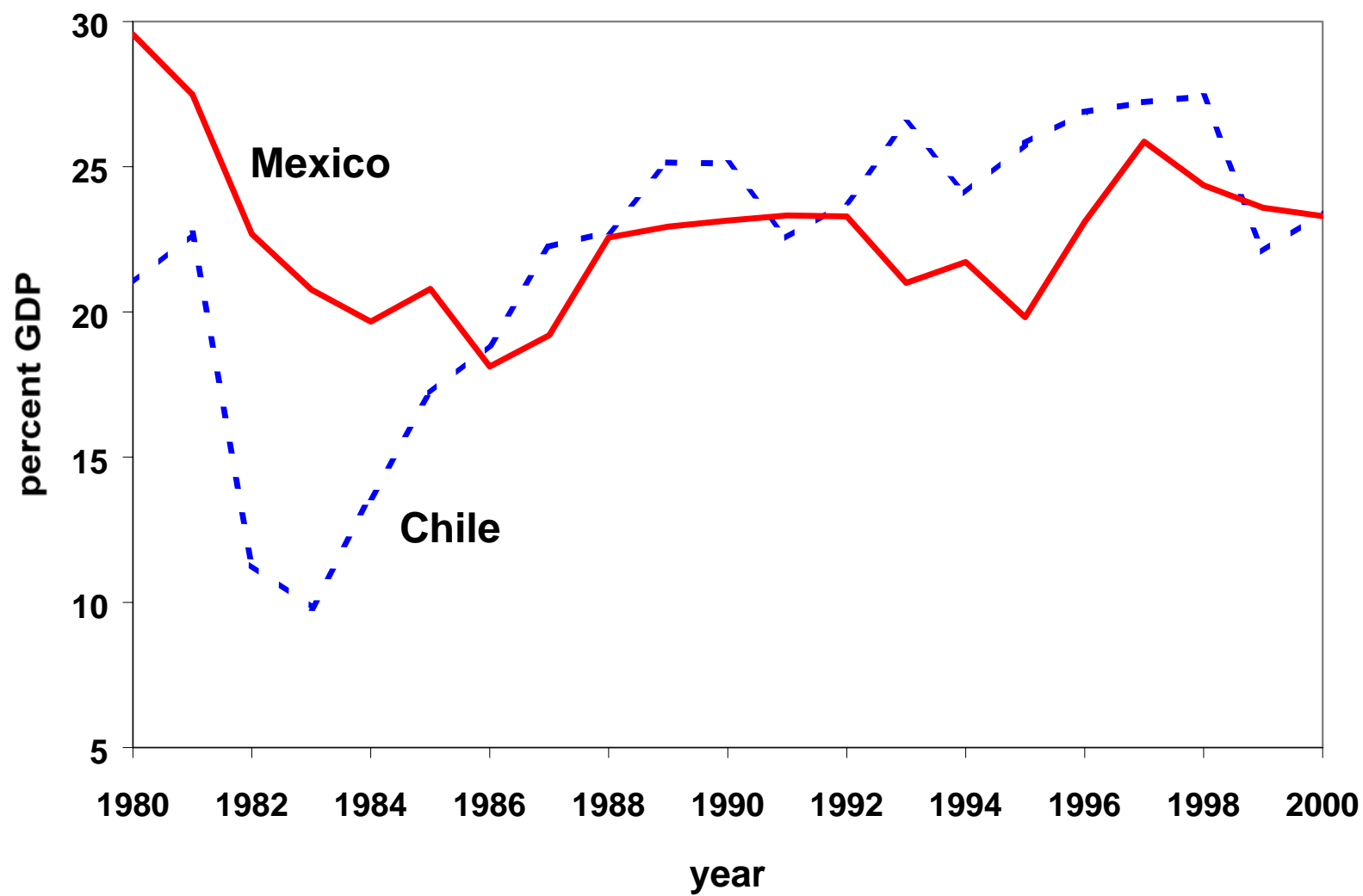# Sachs's story for Mexico

Large debt overhang in Mexico:

- Most of new loans needed to repay old loans.

- Socially profitable investments not undertaken.

What about Chile?

Total external debt as a percent of GDP

Investment as a percent of GDP

Structural reforms story

By 1979 Chile had privatized and reformed its tax system, its banking system, its bankruptcy laws, and its trade policies.

Mexico waited until later.

Different recoveries:
- Chile reaping benefits of reforms.
- Mexico paying costs for distortions.

How can we determine which reforms were crucial?
- Did reforms affect factor inputs or productivity?
- What was timing of reforms?

Growth accounting and applied dynamic general equilibrium model

Two numerical experiments with model:

Base case model: takes series for productivity factor as given.

Model with tax reform: takes series for productivity factor as given and imposes tax reform that lowers tax on capital income in 1988 in both countries.

Applied dynamic general equilibrium model

The representative consumer maximizes

$$\sum_{t=1980}^{\infty} \beta^t \left[\gamma \log C_t + (1-\gamma)\log(\bar{h} N_t - L_t) \right]$$

subject to

$$C_t + K_{t+1} - K_t = w_t L_t + (1-\tau_t)(r_t - \delta)K_t + T_t$$

where $T_t = \tau_t (r_t - \delta)K_t$ is a lump-sum transfer.

Feasibility:

$$C_t + K_{t+1} - (1-\delta)K_t = A_t K_t^{\alpha} L_t^{1-\alpha}.$$

Calibration

First order conditions:

$$\frac{1}{C_{t-1}} = \frac{\beta}{C_t}\left[1 + (1-\tau_t)(r_t - \delta)\right]$$

$$\frac{1-\gamma}{\bar{h}N_t - L_t} = \frac{\gamma\, w_t}{C_t}.$$

Look at 1960-1980 data

$$\beta = 0.98, \quad \tau = 1 - \frac{C_t - \beta C_{t-1}}{(r_t - \delta)C_{t-1}} \implies \tau = 0.45 \text{ in Mexico}, \ \tau = 0.56 \text{ in Chile};$$

$$\gamma = \frac{C_t}{C_t + w_t(\bar{h}N_t - L_t)} \implies \gamma = 0.30 \text{ in Mexico}, \ \gamma = 0.28 \text{ in Chile}.$$
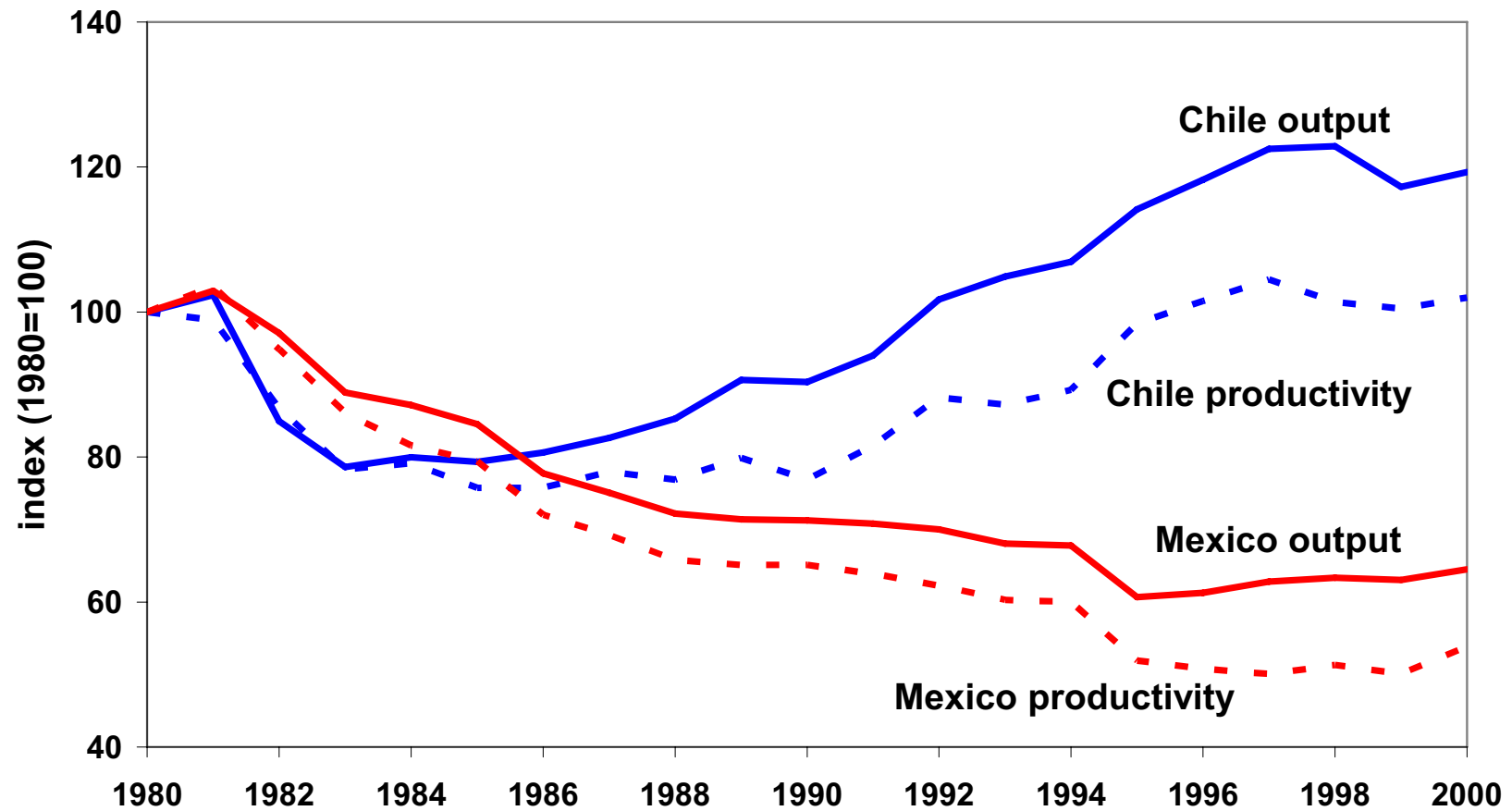
Numerical experiments

Base case:

$\tau_t = 0.45$ in Mexico, $\tau_t = 0.56$ in Chile, 1980-2000.
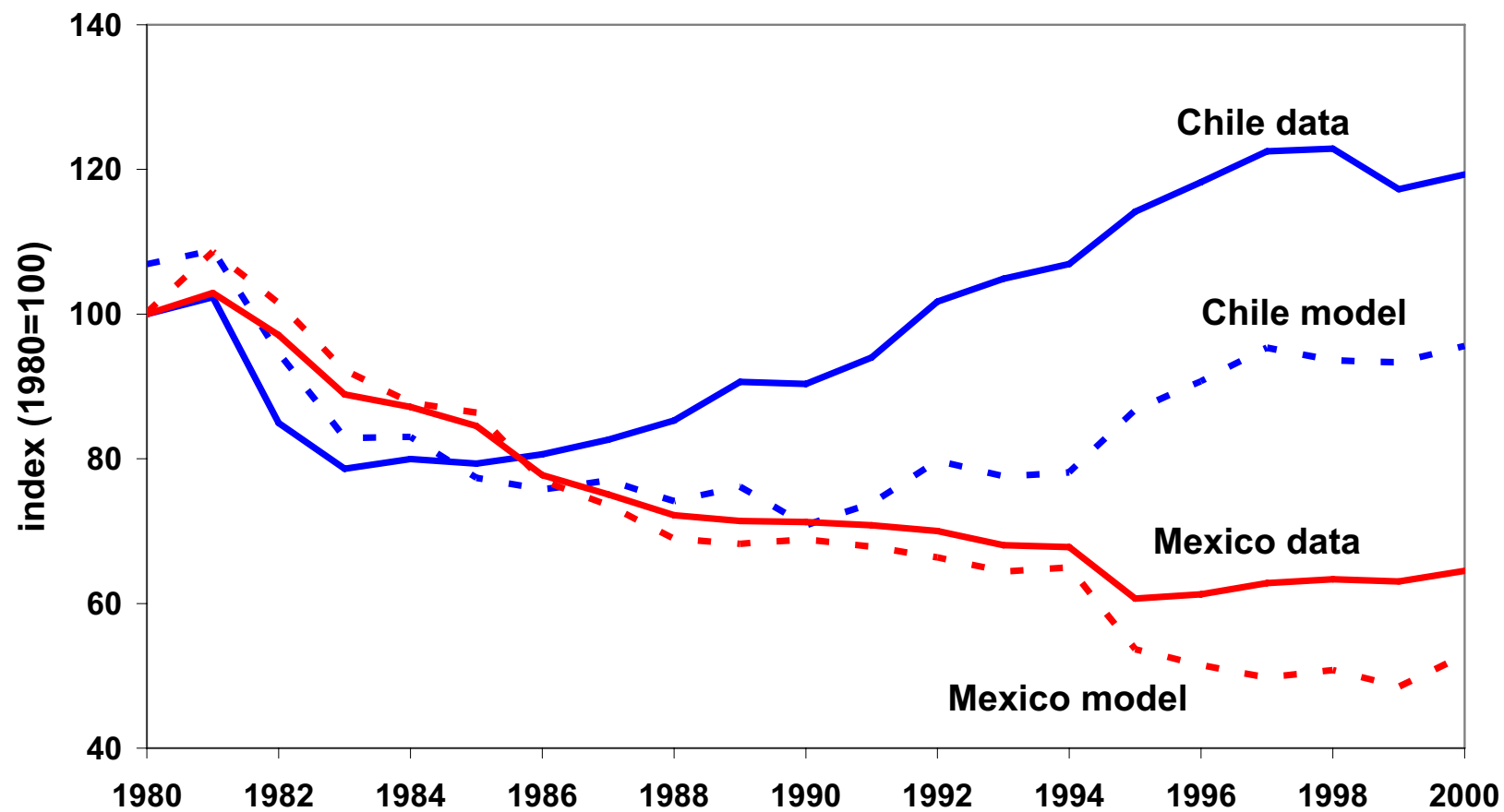
Tax reform:

$\tau_t = 0.45$ in Mexico, $\tau_t = 0.56$ in Chile, 1980-1988;

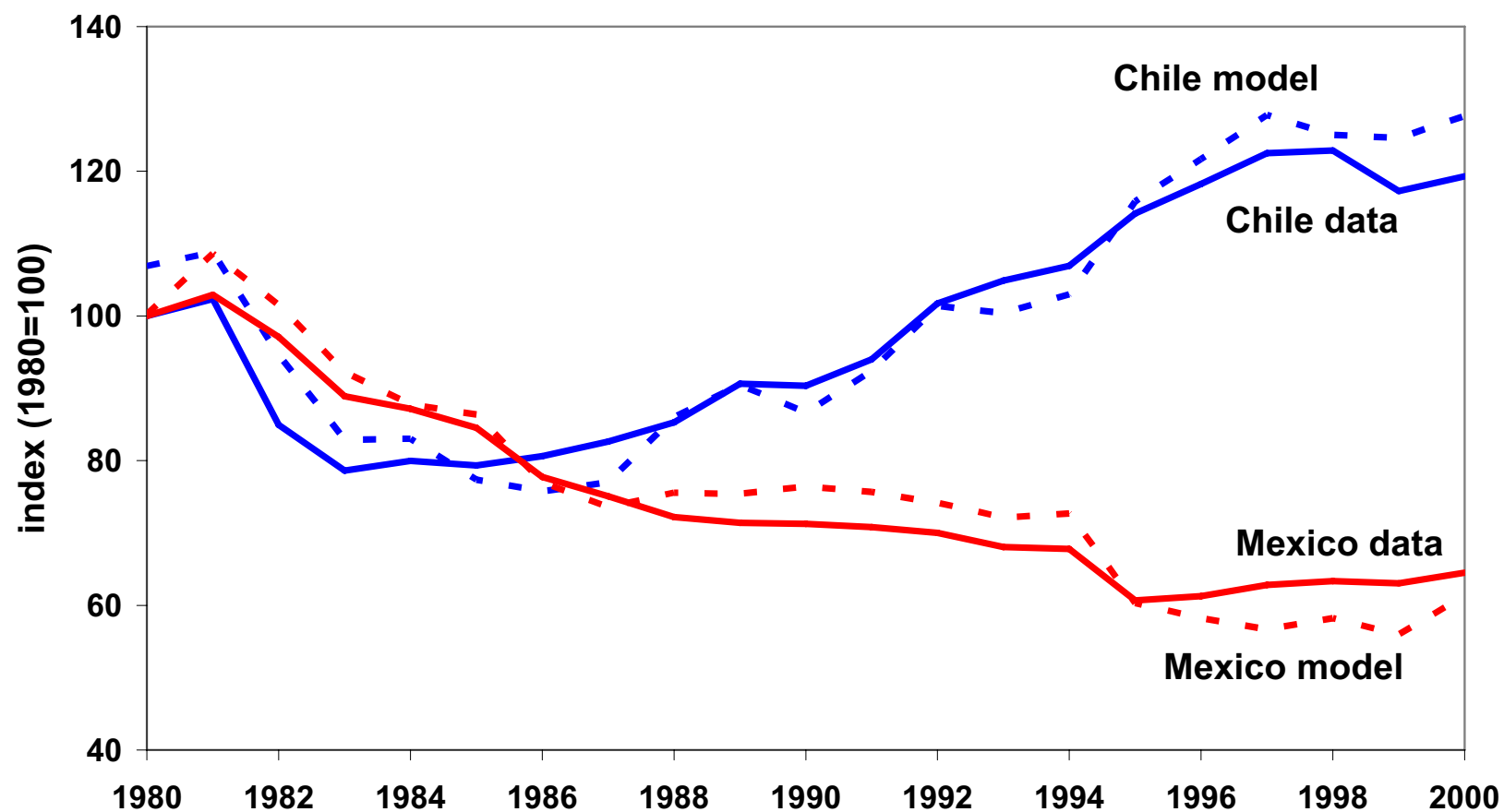$\tau_t = 0.12$ in Mexico, $\tau_t = 0.12$ in Chile, 1988-2000.

Detrended real GDP per working-age person and productivity factor

Detrended real GDP per working-age person: base case model

Detrended real GDP per working-age person: model with tax refrom

What do we learn from growth accounting and numerical experiments?

Nearly all of the differences in the recoveries in Mexico and Chile result from different paths of productivity.

Tax reforms are important in explaining some features of the recoveries, but not the differences.

Implications for studying structural reforms story:

- Only reforms that are promising as explanations are those that show up primarily as differences in productivity, not those that show up as differences in factor inputs.

- Timing of reforms is crucial if they are to drive the differences in economic performance.

Fiscal reforms

Chile:
- tax reforms 1975, 1984
- social security reform 1980
- fiscal surpluses

Mexico:
- tax reforms 1980, 1985, 1987, 1989
- fiscal deficits

Important, but not for explaining the differences!

Trade reforms

Chile: by 1979
- all quantitative restrictions eliminated
- uniform tariff of 10 percent
- tariff hikes during crisis — tariff back below 10 percent in 1991

Mexico: in 1985
- 100 percent of domestic production protected by import licenses
- nontariff barriers and dual exchange rates

Massive trade reforms in Mexico 1987-1994, culminating in NAFTA

Timing seems wrong!

Privatization

Chile

- major privatizations 1974-1979

Mexico

- major nationalization 1982

  ° expropriated banks' holdings of private companies

  ° government controlled 60-80 percent of GDP

- major privatizations after 1989
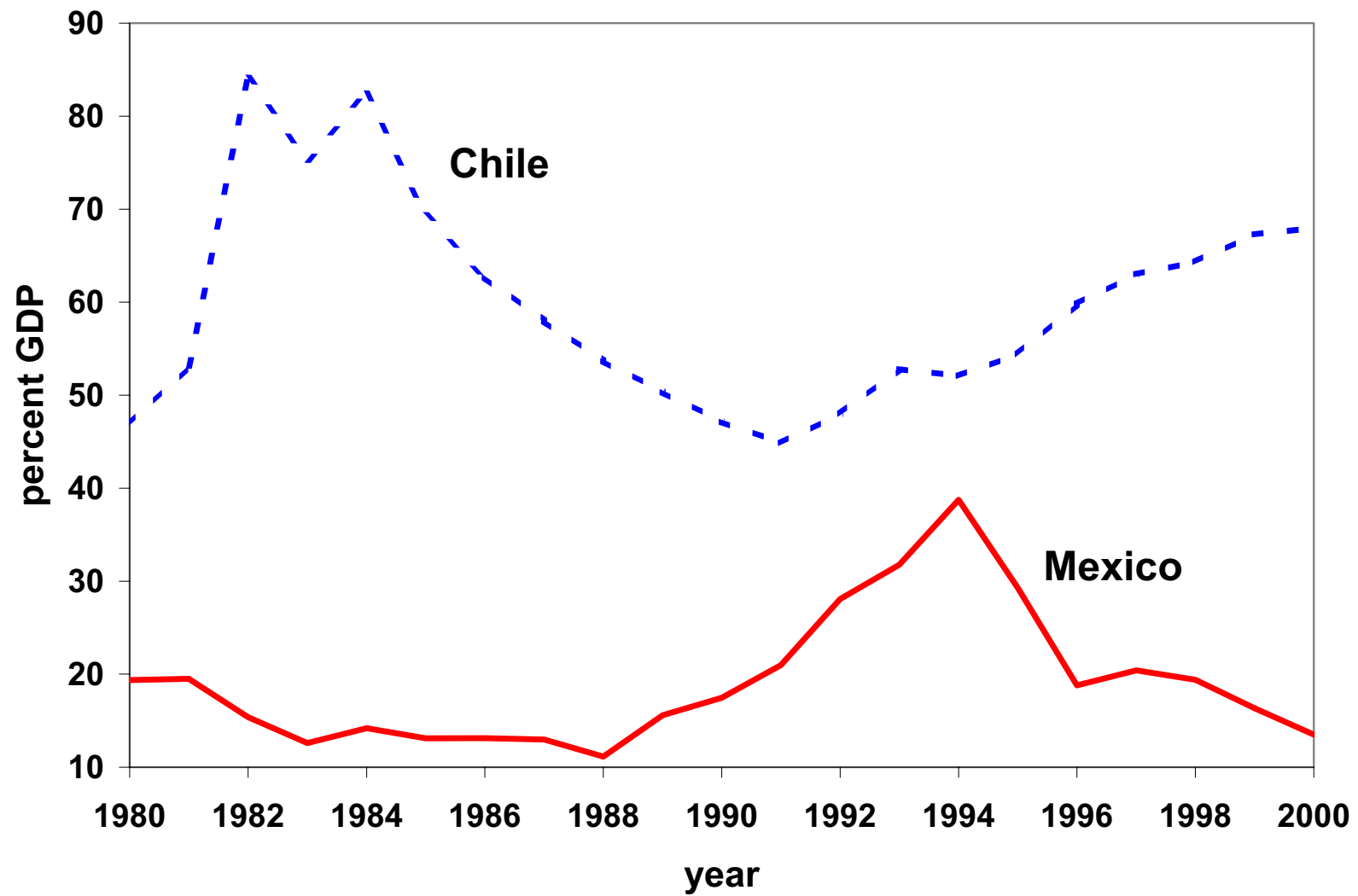
Timing seems wrong?

Banking

Chile: 1982 and after

- took over failed banks

- market-determined interest rates

- lowered reserve requirements.

Mexico: 1982 and after

- nationalized all banks

- government set low deposit rates

- 75 percent of loans either to government or directed by government.
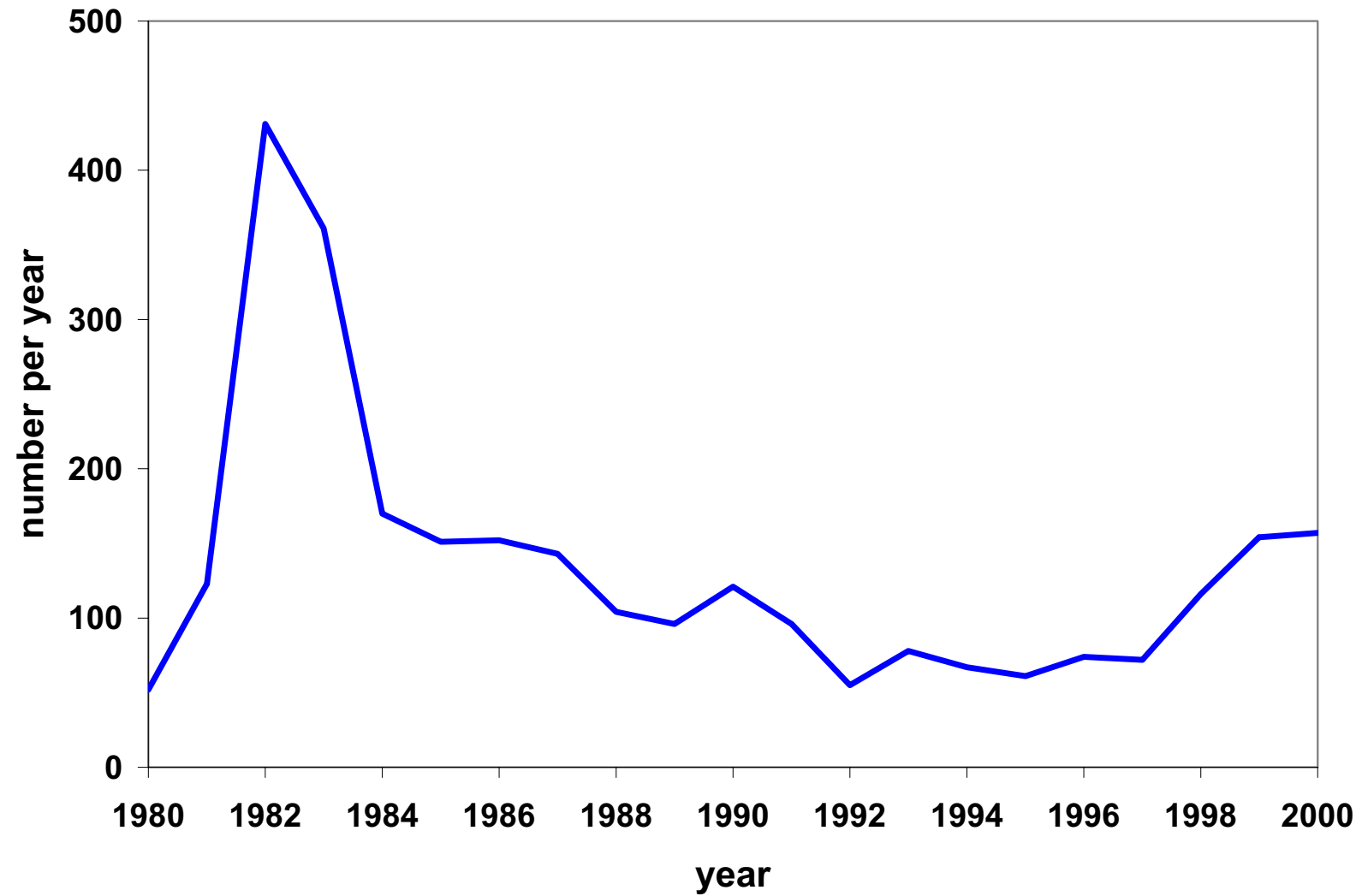
Private credit as a percent of GDP

Bankruptcy laws

Chile had reformed the administration of its bankruptcy procedures in 1978. In 1982 it reformed its bankruptcy laws to look much like those in the United States.

Mexico reformed its bankruptcy procedures in a similar way only in 2000. (Maybe not so similarly!)

Business bankruptcies in Chile

Bottom line

Different recoveries due to
- Chile reaping benefits of reforms
- Mexico paying costs for distortions

Not due to
- money
- real exchange rates
- debt overhang

Reforms in banking and bankruptcy procedures more important than those in fiscal policy, in trade policy, and (probably) in privatization for explaining different recoveries.