# What Happened in Argentina in 2001-02?

- What were the crucial events that occurred in 2000-02?
- What role did the Convertibility Plan and its abandonment play?
- Can we separate the economics of the crisis from the politics?

G. A. Calvo, A. Izquierdo, and E. Telvi (2002), "Sudden Stops, the Real Exchange Rate, and Fiscal Sustainability: Argentina's Lessons," Inter-American Development Bank.

A. De la Torre, E. Levy Yeyati, and S. L. Schmukler (2002), "Argentina's Financial Crisis: Floating Money, Sinking Banking," World Bank.

T. J. Kehoe (2002), "What Can We Learn From the Current Crisis in Argentina?" University of Minnesota.

G. Perry and L. Servin (2002), "The Anatomy of a Crisis: Why Was Argentina Special and What Can We Learn from It?" World Bank.

The economy of Argentina finds itself submerged in a great depression that, even if though began four years ago, deepened after mid 2001 with average quarterly falls of deseasonalized GDP with respect to the previous quarter of 5 percent for the last two quarters of 2001 and the first of 2002. This violent deepening of the recession occurred just at the moment that economic agents, almost universally, became convinced of the impossibility of sustaining the Convertibility Plan.

Dirección Nacional de Coordinación de Políticas Macroeconómicas, Secretaría de Política Económica (2002)

La economía de la Argentina se encuentra sumergida en una gran depresión que si bien se inició hace cuatro años se profundizó desde mediados de 2001 con caídas trimestrales promedio con respecto al período anterior del 5 por ciento del PIB desestacionalizado para los últimos dos trimestres del año pasado y el primero de 2002. Esta profundización violenta de la recesión se produjo a partir del momento en que los agentes económicos, en forma casi generalizada, se convencieron de la imposibilidad de sostener el esquema de la convertibilidad.

Dirección Nacional de Coordinación de Políticas Macroeconómicas, Secretaría de Política Económica, Argentina (2002).

# What Happened in Argentina in 2001-2002?

The Brazilian devaluation did not lead to problems for the Argentinian current account — both exports and the trade surplus in fact grew.

March 16 2001: President De la Rúa rejected the plan presented by the Minister of the Economy, Ricardo López Murphy, to reduce the fiscal deficit.

After López Murphy's resignation, De la Rúa appointed Domingo Cavallo, the architect of the Convertibility Plan during the first Menem administration, as Minister of the Economy. Cavallo presented a new economic plan in the lower house of Argentina's congress. On 28 March, the congress refused to allow Cavallo to cut government salary and pension costs, and the government sold debt to cover the deficit.

Cavallo's alternative: La Ley de Déficit Cero (Zero Deficit Act): Quasi Monies

In December 2001, the government defaulted on its debt and, in January 2002, it abandoned the Convertibility Plan.





## **CPI Inflation in Argentina**



## Real GDP per Working Age (15-64) Person



### **Money Market Interest Rates**



## Foreign Trade in Argentina



### **Federal Government Finances**





## **Overall Government Balance (Including Off Budget Items)**

year

# What Lessons Can We Draw from the Crisis in Argentina?

- Do economic theory and the data provide clues to where the severity of the crisis comes from?
- What does it mean to "commit" to a monetary policy?
- What features would a good model of the crisis in Argentina have?

R. Bergoeing, P. J. Kehoe, T. J. Kehoe, and R. Soto, "Decades Lost and Found: Mexico and Chile Since 1980," *Federal Reserve Bank of Minneapolis Quarterly Review*.

J. M. Da Rocha, E. L. Giménez, and F. X. Lores (2002), "Devaluation Beliefs and the Argentinian Debt Crisis," Universidade de Vigo.

T. J. Kehoe (2002), "What Can We Learn From the Current Crisis in Argentina?" University of Minnesota.

T. J. Kehoe and E. C. Prescott (2002), "Great Depressions of the Twentieth Century," *Review of Economic Dynamics*.

T. J. Sargent and N. Wallace (1981), "Some Unpleasant Monetarist Arithmetic," *Federal Reserve Bank of Minneapolis Quarterly Review*.

# **Growth accounting**

Production function:

$$Y_t = A_t K_t^{\alpha} L_t^{1-\alpha}$$

Capital accumulation:

$$K_t = (1 - \delta) K_t + I_t.$$

 $\alpha = 0.30, \delta = 0.05.$ 

# **Decomposition of changes in output**

$$\log\left(\frac{Y_t}{N_t}\right) = \log A_t + \alpha \log\left(\frac{K_t}{N_t}\right) + (1 - \alpha) \log\left(\frac{L_t}{N_t}\right)$$

$$\log\left(\frac{Y_t}{N_t}\right) = \frac{1}{1-\alpha}\log A_t + \frac{\alpha}{1-\alpha}\log\left(\frac{K_t}{Y_t}\right) + \log\left(\frac{L_t}{N_t}\right)$$

$$\begin{bmatrix} \log\left(\frac{Y_{t+s}}{N_{t+s}}\right) - \log\left(\frac{Y_t}{N_t}\right) \end{bmatrix} / s = \frac{1}{1-\alpha} \left[ \log A_{t+s} - \log A_t \right] / s \\ + \frac{\alpha}{1-\alpha} \left[ \log\left(\frac{K_{t+s}}{Y_{t+s}}\right) - \log\left(\frac{K_t}{Y_t}\right) \right] / s \\ + \left[ \log\left(\frac{L_{t+s}}{N_{t+s}}\right) - \log\left(\frac{L_t}{N_t}\right) \right] / s.$$

### **Real GDP Per Working Age Person and Total Factor Productivity**



# Applied dynamic general equilibrium model

The representative consumer maximizes

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

subject to

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

Feasibility:

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

# Calibration

First order conditions:

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

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

Estimate  $\beta = 0.96$ ,  $\gamma = 0.30$  1960-1970 data.

# **Model with Adjustment Costs**

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

where

$$\phi(X/K) = \left[\delta^{1-\eta}(X/K)^{\eta} + (\eta-1)\delta\right]/\eta.$$

For  $0 < \eta \le 1$ ,  $\phi'(X/K) > 0$ ,  $\phi''(X/K) \le 0$ ,  $\phi(\delta) = \delta$ ,  $\phi'(\delta) = 1$ . The model without adjustment costs is the special case  $\eta = 1$ . In numerical experiments  $\eta = 0.8$ .

### Should we model rigidity in the labor market (instead)?

**Real GDP per Working Age Person** 



**Model with Adjustment Costs** 



year

year

Hours Worked per Working Age Person



**Model with Adjustment Costs** 



**Capital-Output Ratio** 

**Base Case Model** 

**Model with Adjustment Costs** 



year

year

#### **Investment Rate**



**Model with Adjustment Costs** 



## Sargent-Wallace Model of Unpleasent Monetarist Arithmetic

[I]magine that fiscal policy dominates monetary policy. The fiscal authority sets its budgets, announcing all current and future deficits and surpluses and thus determining the amount of revenue that must be raised through bond sales and seignorage. Under this ... coordination scheme, the monetary authority faces the constraints imposed by the demand for government bonds, for it must try to finance with seignorage any discrepancy between the revenue demanded by the fiscal authority and the amount of bonds that can be sold to the public.

## Monetary and fiscal policy are not independent instruments!

# Da Rocha-Giménez-Lores Model of Devaluation and Default in Argentina

Expectations of devaluation can lead domestic consumers to invest in assets abroad rather than in domestic capital. This gives the government an incentive to devalue.

Devaluation can increase the value of government debt denominated in dollars relative to domestic GDP and the government's ability to repay the debt, pushing the economy into the crisis zone.

What drives the results in this model is that the nominal devaluation expected by domestic consumers turns out to be a real devaluation that pushes the economy into the crisis zone.

# Lessons for monetary policy

Increasing the costs of abandoning a policy can reduce the set of conditions under which a crisis can occur. If these increased costs do not rule out a crisis completely, however, they can backfire in making the economy far worse off if things do go wrong.

Rogoff's (1985) (and, more recently, Woodford's 2002) proposal to reduce the dynamic consistency problem in monetary policy making is to employ a "conservative" central banker, one whose social welfare function puts far more weight on price stability than does the general population's. This is what the De La Rúa administration tried to do in bringing in Domingo Cavallo as Economics Minister in early 2001. Dynamic consistency problems are pervasive because commitment

is not easy. Lack of political consensus both within the federal government and between the federal and the provincial governments in Argentina made it impossible to resolve fiscal imbalances. In this environment, "unpleasant monetarist" arithmetic doomed the Convertibility Plan to failure. Measures that the administration had put in place to make the Convertibility Plan more credible are imposing severe costs on the economy now that the plan has failed.

# A final note

They say that every dark cloud has a silver lining, but it is hard to have much optimism about the Argentinian economy. Nevertheless, the pervasiveness of time consistency problems may soon produce one favorable for Argentina: Up until recently, both the Bush administration and the International Monetary Fund in the person of its new Managing Deputy Director Anne Krueger claimed to be committed to a policy of "no more bailouts" for countries like Mexico and Korea that run into financial crises of their own making. Early last month, however, the IMF, with the backing of the U.S. government, announced large loan packages for Brazil and Argentina. Negotiations for another package for Argentina are currently underway.