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Table C.14 Money—Real (1985 = 100)

Year	M1		M4	
	Real terms	% of GDP	Real terms	% of GDP
1958	288.6	20.8	110.9	27.5
1959	190.1	14.6	70.0	18.6
1960	218.1	15.6	81.0	19.9
1961	238.5	15.9	90.8	20.9
1962	205.1	13.9	79.7	18.6
1963	185.2	12.8	76.3	18.3
1964	201.3	12.7	86.6	18.8
1965	210.9	12.1	92.8	18.4
1966	225.5	12.9	99.5	19.6
1967	237.3	13.2	105.6	20.3
1968	281.9	15.1	129.1	23.8
1969	319.3	15.7	153.2	26.0
1970	316.9	14.8	157.0	25.3
1971	284.2	12.8	143.7	22.3
1972	224.4	9.9	125.5	19.1
1973	264.0	11.3	148.4	21.9
1974	372.5	15.1	213.6	29.8
1975	258.6	10.5	133.6	18.7
1976	173.9	7.1	106.7	15.0
1977	175.4	6.7	133.1	17.6
1978	169.8	6.7	151.5	20.7
1979	173.4	6.5	173.1	22.2
1980	216.0	7.9	219.2	27.8
1981	156.5	6.2	196.2	26.6
1982	120.7	5.0	126.6	18.1
1983	101.9	4.1	89.8	12.4
1984	98.1	3.8	94.9	12.8
1985	100.0	4.1	100.0	14.1
1986	150.6	5.8	159.6	21.3

Source: BCRA.

## Notes

### Chapter 1

1. See Ford (1983), Williams (1920), and Díaz Alejandro (1970) for Argentine economic history prior to World War II.

2. Quoted by Cardoso (1987) and Ford ([1962] 1983, 92).

3. In chapter 3, where we discuss the Martínez de Hoz period, we also give the real exchange rate based on a comparison of manufacturing prices in Argentina and abroad.

4. On the Peronist experience, see, in particular, di Tella (1983) and de Pablo (1980a, 1984).

## Chapter 2

1. See U.S. International Trade Commission (1986, 76).
2. Historical annual data on the principal macroeconomic data for the period 1913–84 are reported in a special issue of *Estudios* (no. 39, July–September 1986).
3. Williams (1920, 125) quotes from the report of the Rothschild Committee to the Bank of England: “the result of the liquidation of Messrs. Baring’s affairs is dependent in a very great measure upon the future value of Argentine securities and obligations; besides which a much larger amount of British capital is engaged in Argentina, the value of which depends greatly on the rehabilitation of the exchanges.” See, too, Hyndman ([1892] 1967) and Fishlow (1985).
4. The debt ratio is calculated by assuming a 1914 debt of \$784 billion, as reported by the Economic Commission for Latin America in 1964, and using the data for changes in public external debt in *Estudios* (no. 39, July–September 1986) to derive the cumulative external debt series.
5. On the Great Depression in Latin America, see Kindleberger (1984), Abreu (1984), O’Connell (1984), and especially Díaz Alejandro (1970, 1983, 1984).
6. The province of Buenos Aires did suspend debt service.
7. See Bittermann (1973) and Avramovic (1966) for some data on postwar external debt.

## Chapter 3

1. The deficit of the *cuenta* (per peso of deposits) is given by the combination of reserve requirements ( $\alpha$ ), the share of time deposits in total deposits ( $\beta$ ), and the compensation on time deposit reserves versus the charge on demand deposits,  $i_T$  and  $i_D$ , respectively.

$$DEF/D = \alpha\beta i_T - (1 - \alpha)(1 - \beta)i_D$$

2. See Calvo (1986a, 1987), Dagnino Pastore (1983), Dornbusch (1982), Dornbusch and Fischer (1986), Fernandez (1985), Rodriguez and Sjaastad (1979), and Rodriguez (1983).
3. If the real interest rate effect dominates, there will be an initial phase of real appreciation with rising rather than falling inflation.
4. See Dornbusch (1985a) for a comparison of the experience of Argentina, Chile, and Brazil.
5. See Fundación Mediterránea *Newsletter* (December 1987).

## Chapter 4

1. This chapter owes much of its inspiration to Mundell (1971) and Cardoso and Reis (1986).
2. With  $B$  and  $eB^*$  the domestic currency values of internal and external debt and  $P$  the price level, these ratios are defined as  $b = B/PY$  and  $b^* = eB^*/PY$ . Note that  $b^*$  depends on the real exchange rate. Given a debt in dollars,  $B^*$ , and domestic real GDP, a real depreciation will increase  $b^*$  and hence worsen the budget deficit. It now takes a larger number of “tax dollars” to pay a “debt service dollar.”
3. The real depreciation will increase the term  $b^*$ , which for a given dollar value of debts depends on the real exchange rate.

4. See Rist (1966) and Joan Robinson's (1938) review of Bresciani-Turroni (1937) for an exposition of this view.

5. See the discussion in Simonsen (1983) on this point.

## Chapter 5

1. This chapter draws on Dornbusch and Simonsen (1987) and de Pablo (1986, 1987).

2. How do we know that the economy cannot? This, too, is an issue in game theory. Schelling (1982) has written extensively on how to make threats stick. Ideas involve poison-pill strategies. Governments instinctively shy away from poison-pill strategies of no return. As a result, the public does not believe the fierce anti-inflation rhetoric and, therefore, the government in turn cannot afford to implement it. The late William Fellner (1976) developed these themes with great authority. See, too, Anti-inflation (1982).

3. See Simonsen (1986a, 1986b) for a game theory formulation where it is shown how players' use of maximin pricing leads to an equilibrium different from the Nash equilibrium that is assumed in full information, rational expectations models.

4. See Dornbusch and Fischer (1986).

5. The Krieger-Vasena reform provided for initial wage adjustments that differed by sector, recognizing that across sector there were differences in the time since the last adjustment. See de Pablo (1972).

6. See Sargent (1982), Dornbusch (1985c), and Dornbusch and Fischer (1986).

7. There is a difference in the required adjustments depending on the presence or absence of fees. In a system without fees, the banking system needs to achieve larger reductions in costs and hence in employment than under a fee-based banking service.

8. See Arnaudo (1979), di Tella (1983), and de Pablo (1980a) on the Peronist inflation and the failed attempt to stabilize it with controls.

9. On the Martínez de Hoz debacle, see Corbo and de Melo (1985), Díaz Alejandro (1982, 1988), Dornbusch (1982, 1985a), and Fernández and Rodríguez (1982).

10. The most comprehensive treatment of the Austral Plan may be found in Heyman (1986).

11. Broda (1986) in particular emphasizes the importance of these early measures in the initial success of the Austral Plan.

12. Paul Volcker, as chairman of the Federal Reserve Board, is said to have played a significant role in achieving IMF and bank acceptance of the plan. He subsequently visited Argentina in November of 1985.

13. There is a need to make some allowance for growth of the informal and black market economy. Estimates are notoriously difficult, but there is a pervasive belief in Argentina that (just as in Italy) the underground economy has experienced much higher growth than the formal economy. A study by Guissari (1987), for example, reports growth rates for the formal (or registered) economy of 0.7 percent per year in 1974–83 and 1.3 for the entire economy, including the informal sector. For the early 1980s, this study finds that the share of the informal sector is 30 percent. No doubt, just as in other countries, the underground is an important and growing feature but, just as elsewhere, estimates of the size must remain tentative.

14. SOCMERC is a public opinion survey data base belonging to the consulting firm Aftalion, Mora y Araujo, Nogueira.

15. Reported in *La Nación* (2 January 1986).

16. See Fischer and Modigliani (1978).

## Chapter 6

1. We are indebted to Marcello Selowsky for suggesting this framework. The basic analysis is set out in Selowsky and van der Tak (1986). An alternative framework based on intertemporal optimization is reported in Blanchard (1983).
2. McCarthy (1987) reports a capital output ratio for Argentina of 4.35 in 1986. Assuming a depreciation rate of 3 percent per year, this yields an investment requirement of 13 percent just to keep the capital stock unchanged. It is apparent that the present level of investment implies that net investment has been negative.
3. In scenario B, the debt/income ratio by the year 2010 (not shown in the table) reaches  $b = 66.7$ .
4. See Dornbusch and Park (1987) for an analysis of Korean development.
5. See Dornbusch and Park (1987).
6. See *Carta Económico* (April 1986), 75–83. For an extensive discussion of distortions in the Argentine economy, see Nogues (1985, 1986, 1987).
7. See Ministerio de Economía (1986).
8. With an external debt ratio of 64 percent and an interest rate of 10 percent, the interest payments amount to 6.4 percent of GDP. A 15 percent real depreciation thus raises interest rates by 1 percent of GDP.
9. For a discussion of the economics of a free trade agreement between Argentina and Brazil, see Dornbusch (1981).

## References

- Abreu, M. de Paiva. 1984. Argentina and Brazil during the 1930s: The impact of British and American international economic policies. In *Latin America in the 1930s*, ed. R. Thorp. London: Macmillan.
- Allais, M. 1966. A restatement of the quantity theory of money. *American Economic Review* 56, no. 5 (December): 1123–57.
- Anti-inflation policies and the problem of credibility: Symposium. 1982. *American Economic Review* 72, no. 2 (May): 77–91.
- Arnaudo, A. 1979. El Programa antiinflacionario de 1973. *Desarrollo Económico* 19, no. 73 (April–June): 25–52.
- Avramovic, D. 1966. *Economic growth and external debt*. Baltimore: Johns Hopkins University Press.
- Banco Central de la República Argentina (BCRA). 1972. *La Creación del Banco Central*. 2 vols. Buenos Aires: BCRA.
- Barletta, N. A., M. I. Blejer, and L. Landau, eds. 1984. *Economic liberalization and stabilization policies in Argentina, Chile, and Uruguay*. Washington, D.C.: The World Bank.
- BCRA. See Banco Central de la República Argentina.
- Bittermann, H. 1973. *The refunding of international debt*. Durham, N.C.: Duke University Press.
- Blanchard, O. 1983. Debt and the current account deficit in Brazil. In *Financial policies and the world capital market: The problem of Latin American countries*,