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HOUSEKEEPING DURING AN EARTHQUAKE: ARGENTINA'S FLOW OF FUNDS DURING THE RAPID INFLATION OF 1970 to 1978†

In an era of fundamental structural change in the world economy, all nations are finding it necessary to reopen questions of interaction between the real and financial sides of their economies. This necessity showed up first in the trade sector. The shock of sharp changes in the energy terms of trade, exchange rate rules of the game, and the institutional structure of international finance often combined to make the capital account of the balance of payments as volatile as the current account. Matters as fundamental as determining the long-term equilibrium exchange rate, even for the United States and Japan, are complicated by the interdependence of real and financial flows, and the concept of equilibrium real interest rate, another touchstone of secular stability, loses its clarity. Domestic and international interaction between real and financial behavior requires that analysts look beneath the surface of real and monetary flows to the fundamental structure of the system. Fortunately for practitioners in many countries, there is a wealth of experience in this area waiting to be tapped.

Latin America has long been familiar with the interaction between real and financial relationships, both domestically and internationally. Perhaps no case is so illustrative as that of Argentina, which in the past decade alone has experimented with as wide a range of real and financial policies as one might imagine, under conditions of major political and social adjustment and changing international relations.

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†The research for this paper was begun in the early 1970s with support from the Organization of American States Capital Markets Program and completed following a visit to Buenos Aires in August and September 1979. Subsequent events have tended to confirm a number of the hypotheses raised and have illustrated the difficulties faced by monetary and financial policy makers in such turbulent times. I benefited from the exceptional cooperation, wisdom, and penetrating analysis of representatives of the Central Bank, economic ministries, and private sector, including in particular the banking and financial community, none of whom bears any responsibility for the present analysis.

This analysis of Argentina's financial system seeks to determine the consequence of a shift from pervasive controls on financial intermediation and active use of the inflation tax to a liberal regime with flexible interest rates, openness to the international capital market for both borrowers and lenders, and reduced rates of protection. Consequent changes in the structure of finance among sectors and institutions and by term of instruments are examined for possible impact on the real behavior of the economy. The analysis assumes that real and financial behavior of individual sectors of an economy are interdependently linked in causal ways similar to the current and capital accounts of a nation's balance of payments. Such an approach requires integrated analysis of source and use of funds by sector in relation to savings and investment behavior, as reflected in the national income accounts. The question underlying the research is whether results justify such a general, as opposed to partial, approach. In extreme cases such as Argentina's, where both stability and growth are critical policy objectives and where policy experiments are beset by structural problems of omission and commission, the answer is clearly affirmative. The fact that the structure of finance matters so much to real economic behavior in contemporary Argentina suggests much wider applicability of this type of analysis.

Piecing together financial flow accounts from partial data and attempting to reconcile them with real savings and investment behavior by sector of the economy under conditions of rapid inflation is a hazardous undertaking at best. In contemporary Argentina, the patchwork that results reflects the unsettled economic and social conditions arising from a succession of radically different political regimes during the period studied (1970 to 1978).

The results shed light on some basic relations between real and financial behavior that can be illuminating to countries at all levels of development. The first major finding is the surprising degree of stability in aggregate real-financial relations, despite rapid and uneven rates of inflation and major policy changes. The second finding is the evident importance of macroeconomic policy changes to the pattern of real and financial flows among sectors of the economy and their apparent effect on accumulation, investment, and external exposure.

The focus in this study is on net financial flows from year to year, since these flows are most closely related to real flows of goods and services in the national income accounts and reflect real resource transfers in the same period. Since a major objective of the study is to determine possible relationships between financial flows and real investment behavior in the economy, the net approach is justified. Even more, however, gross flows reflect the frenzied activity of Argentine financial markets during recent years. This churning led to a high-income velocity of circulation during the second Peronist period, when the inflation tax eroded the real value of cash balances. The essentially short-term nature of credit transactions continued in the liberalization phase following the 1976 coup. Real deposit rates of interest, while remaining negative through most of the period, rose significantly with the financial reforms. Indeed since exchange rate guidelines were preannounced from December 1978 to March

1981, and peso devaluation lagged behind relative price-level changes throughout this interval, real rates of return on dollars became significantly positive, though nominal peso deposit rates remained negative.

The key question is whether such frenzied activity, which involved thousands of participants in the money market, served to expand real savings and investment in Argentina and to foster price stability and growth in the national economy. A related question is whether monetary, financial, and exchange-rate policies were working toward an eventual reduction in inflationary levels and expectations. The following section examines the flow-of-funds accounts with these questions in mind.

SOME ANALYTICAL IMPLICATIONS OF THE FLOW-OF-FUNDS ACCOUNTS: 1970 TO 1978

From the viewpoint of financial policy and its relationship to more general economic policy, there were two major watersheds in the 1970s. The first corresponded to the election of the second Peronist government in March 1973. In September of that year, commercial bank deposits were nationalized and placed under the control of the Central Bank, as under the first Peron regime. The second watershed occurred in 1977 when the new military government that had ousted Isabel Peron in 1976 introduced major financial reforms, which included liberalizing interest rates and returning demand deposits to the commercial banks. During the past decade the economy of Argentina has been subjected to virtually as wide a range of economic and financial policies as exists in the tool kit of macroeconomics, short of central planning or total *laissez faire*. Given the gamut of approaches taken, perhaps what is most surprising is the relative stability of the ratios of real to financial flows as revealed by flow-of-funds accounts. This is particularly important considering that the price level multiplied one thousandfold between 1970 and 1978.

Gross financial flows of the private sector—the sum of private lending and borrowing—increased five times as much as gross domestic product from 1970 to 1978, with little variation in rate of increase from one government to another (Table 1). The increased demand for financial assets by the private sector was more than sufficient to offset the increase in supply of liabilities, notwithstanding the soaring expansion of the monetary base, permitting the government to use the inflation tax to cover a large and growing share of its deficit.

Increased private sector financial holdings as a share of GDP were increasingly used to finance government investment, and the net flow through the financial system amounted to one-third of private savings by 1978. The private sector ratio of money and other deposits to its debt to financial intermediaries (primarily banks) rose abruptly during the second Peron period, as did the ratio of government investment to government savings (Table 2). The ratio of government investment to savings reached 3.6 in 1973/74, then fell back to 2.1 in 1976, although the excess of private sector savings over its real

TABLE 1. — PRIVATE SECTOR FINANCIAL FLOWS IN RELATION TO GDP,
1970 TO 1978
(billion current pesos)

	Absolute sum of financial flows of private sector	GDP	Ratio of gross financial flows of private sector to GDP	Annual inflation (percent) ^a
1970	9.4	94.8	.10	14.0
1971	20.0	127.8	.16	40.3
1972	36.2	233.9	.15	76.0
1973	83.6	367.8	.23	49.5
1974	115.2	466.2	.25	19.2
1975	425.5	1,325	.32	188.7
1976	2,819	7,529	.37	485.2
1977	8,604	19,907	.43	151.7
1978	22,527	48,096	.47	152.1

Source: Flow-of-Funds Table A.1.

^aAnnual rate of increase in wholesale price index during current year as percent of annual rate of increase in index during preceding year.

TABLE 2. — FINANCIAL FLOWS BETWEEN THE PRIVATE AND PUBLIC SECTORS,
1970 TO 1978

	Ratio of private sector savings to real investment	Ratio of public sector real investment to savings	Private sector		
			Money and other deposits (billion pesos)	Total debt with financial intermediaries (billion pesos)	Ratio of money and deposits to debt
1970	1.0	1.3	4.7	- 3.4	1.4
1971	1.1	2.0	9.5	- 9.0	1.1
1972	1.2	2.1	17.9	- 15.1	1.2
1973	1.5	3.6	49.4	- 29.9	1.7
1974	1.4	3.6	58.7	- 43.9	1.3
1975	1.6	- ^a	214.8	- 143.5	1.5
1976	2.4	2.1	1,278	- 1,041	1.2
1977	1.5	1.6	4,321	- 3,804	1.1
1978	2.3	2.1	11,342	- 9,319	1.2

Source: Flow-of-Funds Table A.1.

^aGovernment saving (current account surplus) negative.

investment did not fall but actually increased in the post-Peron period. The excess was used to finance a continuing government deficit and accumulation of foreign financial assets.

The role of financial intermediation expanded rapidly throughout the 1970s, especially for banking institutions whose transactions predominate in the flow-of-funds accounts. As the detailed financial transaction accounts (Appendix A) show, the activity of nonbank financial intermediaries declined throughout the period relative to that of the banking system. The ratio of financial investment of nonbank financial intermediaries to that of the banking system was as high as 0.26 in 1973, but fell steadily to 0.05 in 1976. As the financial reforms of 1977 freed banking activity from restrictive regulations, it swamped the activity of other financial intermediaries, and the ratio declined even further to 0.03 in 1978. The policy of letting banking institutions proliferate in number and range of services, combined with sustained hyperinflation that places liquidity at a premium, choked off other credit institutions, and particularly those designed to engage in longer-term borrowing and lending.

The bureaucratic and restrictive nature of regulation of nonbank financial intermediation and direct finance, including bond and stock issues, may also have hampered expansion of medium and long-term finance, as institutional rigidity in investment finance discouraged that type of operation for banking institutions. Aggregation of private sector data for businesses and households and omission of data on direct finance prevent a clear picture of the household finance of private investment. However, it is reasonable to assume that much of the gross financial saving of the private sector was offset by unreported household borrowing for consumption from business and financial institutions. In the rapidly inflationary 1970s installment purchases were the rule rather than the exception as Argentines hedged against inflation in terms of liabilities as well as assets. Only after the 1977 reforms did the cost of borrowing begin to approach the rate of inflation, and even in mid-1979 real lending rates remained negative for many credit users, in part because the peso cost of foreign borrowing was below the rate of inflation. Retailers were beginning to index consumer credit, but there remained a tendency to overprice merchandise and subsidize credit, relying on consumers' expectations of inflation to provide a market. Indeed, any purchase in Argentina was a speculation, and much of the credit expenditure that churned the market and bolstered the price level was an attempt to secure commodities before their prices rose still further. Meanwhile, gross domestic fixed investment (including inventories) remained fairly stable as a share of GDP except for one brief rise during the second Peron regime (Table 3).¹

¹ It should be noted that relative price distortions in Argentina, which have tended to bias upward the price of capital goods, account for part of the relatively high investment figure. If the efficiency of the economy had improved under the post-Peron regime, such distortions might have been expected to diminish, leading to a lowering of the observed investment ratio and biasing downward the real investment rate reported by the Central Bank below its actual level in efficiency terms.

TABLE 3.—GROSS DOMESTIC INVESTMENT
(billion 1960 pesos)

	1971	1972	1973	1974	1975	1976	1977	1978
Gross domestic investment	3.75	3.95	3.90	4.05	3.76	3.58	4.33	3.80
Net inventory change	.10	.11	.05	.05	.04	.01	-0.02	-0.09
Gross domestic fixed investment	3.65	3.84	3.85	4.00	3.71	3.57	4.35	3.89
Public construction	.63	.72	— ^a	.71	.54	.42	.45	.47
Private construction	.83	.78	— ^a	.91	.94	.87	1.00	1.09
Domestically produced durable equipment	1.59	1.73	1.95	1.98	1.73	1.83	2.08	1.58
Imported durable equipment	.60	.61	.47	.40	.50	.44	.82	.73
Annual increase in gross domestic fixed investment (percent)		5.2	0.3	3.9	-7.2	-3.9	-21.9	-10.7
Gross domestic product (market prices)	16.0	16.66	17.53	18.64	18.36	17.82	18.72	17.94
Ratio of gross domestic fixed investment to GDP	.228	.230	.220	.215	.292	.200	.232	.217

Source: Central Bank of Argentina.

^aData sheet missing

After the reform the investment ratio increased again in 1977, as imported capital goods grew by 86 percent (after declining by 11 percent in 1976), while all other components of fixed investment rose from 6 to 14 percent. In 1978, however, tightening of credit conditions and a generally uncertain economic outlook led to an 11 percent decline in gross fixed investment.

The financial flow data of Table 1 indicate much more significant increases in gross financial flows to GDP and in the ratio of net financial investment to savings for the private sector than are indicated by the real investment data of Table 3. Ratios of finance (mainly money-market flows) to GDP quadrupled in

the post-Peron period, though real investment as a percent of GDP remained close to pre-financial-reform levels by 1978. These figures provide strong evidence that the return of the financial system from "disintermediation" toward fuller financial intermediation did not bring with it the kind of net resource flows from lenders to borrowers needed to take advantage of the country's potential for growth. Here is just one more example among many from Latin America that policies serving to reverse "disintermediation" and financial repression in and of themselves are not sufficient to make the financial system an engine for increased economic efficiency or growth. Much more is needed to stimulate the net financial flows necessary for increases in real investment with complementary growth in savings through expansion of GDP. Without such a comprehensive approach combining financial intermediation, fiscal and financial stability, and growth-inducing policies, financial savings of some agents are just as likely to lead to financial dissavings of others induced by short-term credit flows and to a net triangulation of financial flows abroad, with no gain in real domestic investment or growth.

THE INFLATION TAX AND IMPLICATIONS FOR THE FLOW OF FUNDS

Despite sustained rapid inflation, money balances broadly defined increased relative to GDP during the 1970s (Table 4).² The ratio of money to GDP rose steadily from 0.05 in 1970 to 0.27 at the end of the period, and was sustained even during 1975 and 1976 when the price level doubled and then quintupled. The greatest increase occurred after the change of government in 1976, as interest rates on time and savings deposits were allowed to rise to equilibrium levels after having been repressed. Of course the incidence of the inflation tax was most severe on cash and demand deposits (M_1) so that although the ratio of M_1 to GDP rose from extremely low figures at the beginning of the 1970s, it never went above 0.16 (1975) and fell back abruptly thereafter. Depositors shifted to time and savings deposits, which began to pay high nominal rates of interest even becoming positive in real terms in some months. Hence in Table 4 the ratio of M_1 to M_1 plus quasi-money, after remaining well above 0.5 through 1976, dropped sharply to 0.35 in 1977. Incidence of the inflation tax on deposit holders was therefore somewhat dampened in 1977 and 1978, though sustained inflation of more than 150 percent a year caused the impact of the inflation tax to remain significant.

Rough estimates were made of the effect of the inflation tax on the purchasing power of liquid balances on the basis of the stock of cash and demand deposits at the beginning of each year, although they fail to take into account the expansion of nominal balances during the course of the year (Table 5). The "tax" so estimated rose from 13 to 17 percent of GDP between 1975 and 1976. The higher figure reflects soaring inflation in the early part of 1976, which

² Money here is defined as the sum of currency and demand deposits plus time, savings, and other deposits in banking institutions.

TABLE 4.—CHANGE IN MONEY AND QUASI-MONEY IN RELATION TO GDP,
1970 TO 1978
(billion pesos)

	Increase in cash and demand deposits (ΔM_1)	Increases in time, savings, and other deposits in banking system	Increase in total money supply	Increase in total money supply relative to GDP	Increase in M_1 relative to GDP	Increase in M_1 relative to increase in total money supply
1970	2.9	2.2	5.1	.05	.03	.57
1971	6.1	4.0	10.1	.08	.05	.60
1972	10.1	9.3	19.4	.08	.04	.52
1973	34.4	23.1	57.5	.16	.09	.60
1974	43.5	27.9	71.4	.15	.09	.61
1975	210.4	48.8	259.2	.20	.16	.81
1976	935	658	1,593	.21	.12	.60
1977	1,841	3,360	5,201	.26	.09	.35
1978	4,726	8,240	12,966	.27	.10	.36

Source: Flow-of Funds Table A.1. Total increase in money supply is more inclusive than "total monetary expansion" shown in Table 7.

TABLE 5.—EFFECT OF INFLATION ON LIQUID ASSETS

	Private holdings of means of payment at beginning of period ^a (billion pesos)	Rate of Inflation (percent)	"Inflation tax" ^b (billion pesos)	GDP (billion pesos)	"Inflation tax" as percent of GDP
1975	89	189	168	1,325	13
1976	260	485	1,261	7,529	17
1977	926	152	1,408	19,907	7
1978	2,084	152	3,168	48,096	7
1979	5,633	141 ^c	7,943	124,968 ^d	6

Source: Author's calculations from Central Bank records.

^aCash and non-interest-bearing demand deposits. Figure corresponds to balance for Dec. 31 of preceding year.

^bLoss in purchasing power of initial balances due to inflation.

^cAnnual rate of change in wholesale price index as of June 30, 1979.

^dGDP annualized based on data as of June 30, 1979, from the Central Bank research department, converted from 1960 pesos using the wholesale price index.

reached an annual rate of more than 900 percent during the month of April, before policies of the new government could bring the price level under control.

As the rate of inflation decelerated to around 150 percent annually in late 1976, 1977, and 1978, the inflation tax expressed as a share of GDP fell back to 7 and then 6 percent. This was still enough to drive asset holders into time and savings deposits, which were then paying interest rates almost sufficient to retain their real value. A broad spectrum of the urban population of Argentina, especially those in the major cities, was ultimately able to hedge somewhat against the inflation tax by holding relatively liquid savings deposits and short-term time deposits instead of demand deposits. Needless to say, those in the lowest income groups and those who had to hold large cash balances for working capital were least able to escape this continuing penalty.

The total stock of private sector claims on banks and savings institutions began recovering after 1976, as shown in Table 6. The share of deposits in GDP, which had been 24 percent in 1974, fell to 15 percent in 1976 but had recovered once again to 24 percent by 1978. These deposits, representing gross financial flows passing through the banking system, increased from 11 to 16 percent of GDP between 1975 and 1978. It was shown earlier that the banking system used its recovered real deposit base primarily for loans to the government and for short-term credits to businesses and households, although there was considerable expansion in real estate loans including those for construction. It should be noted, however, that much private-sector building construction was occurring as an inflation hedge rather than as an investment in response to expected growth in profitability of the economy.

TABLE 6. — PRIVATE SECTOR CLAIMS ON BANKS AND SAVINGS INSTITUTIONS
(billion current pesos)

	Private sector deposits (balance as of Dec. 31)	GDP	Deposits as percent of GDP	Increase in deposits	Change in deposits as percent of GDP
1974	113	466	24	—	—
1975	263	1,325	20	150	11
1976	1,157	7,529	15	894	12
1977	4,126	19,907	21	2,969	15
1978	11,639	48,096	24	7,513	16

Source: *Boletín Estadística* of Banco Central de la República Argentina, April 1979, p. 7. Year-end balance of deposits of private sector in banks and savings institutions only. Money and quasi-money flows in the financial transaction accounts (Table A.1) include cash and deposits in other nonbank financial intermediaries, making net changes there somewhat greater.

INFLATION AND ITS EFFECT ON REAL AND FINANCIAL BEHAVIOR

Inflation has roots that extend far back into Argentina's history. Its analysis would include political and social issues that, however fundamental to an understanding of that nation's economy, are beyond the scope of this study. The proximate cause of inflation, however, is expansion in the monetary base too rapid to be accommodated by real growth in goods and services (Diz, 1970, pp. 71-130). This is evident from Table 7, which examines total monetary expansion since 1975 and relates it to the prime sources of expansion loans to the public sector, private sector, and the rest of the world. Since Argentina enjoyed an export boom in the late 1970s, and since domestic interest rates in dollars were well above those abroad, conversion of foreign exchange into pesos by exporters became a major, though diminishing, source of increased liquidity, from one-third in 1976 to one-seventh in 1978. In 1975, the public sector represented more than half of the expansion as the Peron administration ran the largest deficit in history up to that date. Change in government in 1976 reduced the public sector's share in expansion of the monetary supply to 10 percent. This would have reduced inflationary pressures still more if there had been a comparable reduction in private credit expansion. But the private sector share, which accounted for only 55 percent of monetary expansion in 1975, increased after the 1976 coup.

An important element in the expansion of the money supply between 1977 and 1979 was the so-called Monetary Regulation Account. Administered by the Central Bank, this account was established in 1977 to compensate commercial banks for the lack of interest paid on their legal reserves, whereas most new deposits began to pay high nominal rates of interest. By providing the banks with credits in proportion to their reserve requirements, the account had the effect of injecting new funds into the economy; otherwise lending rates would have had to be much higher to cover the cost of deposits including those offset by non-interest-bearing reserves. The proportion of monetary expansion directly attributable to this source doubled from 7 to 15 percent between 1977 and 1978. It subsequently declined in importance. If this additional official source of credit is added to the public sector share, by the end of 1978 the two combined still account for 23 percent of monetary expansion, compared with 18 percent in 1977.

The Argentine reforms were far from those corresponding to a pure monetary liberalization approach. The total money supply (M_3) was allowed to expand at extremely high rates even after the change of government in 1976, although the rate declined gradually from a high of 305 percent in 1976 that resulted from the uncontrolled first months of that year. This is due in part to pressures placed on the regime to not squeeze credit too much for certain powerful sectors. After 1976 the initial direct beneficiaries (in terms of increased credit availability) shifted from the government sector to those in the private sector with access to credit. The fact that the government's share of bank credit soon increased again, even as the rate of expansion of the money

TABLE 7. — MAJOR FACTORS OF TOTAL MONETARY EXPANSION (TME),
1975 TO 1978
(billion pesos)

	1975	1976	1977	1978
External sector	- 14.4	387.1	886.1	1,365.4
Percent of TME	- 6	33	24	14
Public sector	118.8	119.8	389.0	840.6
Percent of TME ^a	52	10	11	9
Account of monetary regulation	—	—	268.1	1,424.5
Percent of TME			7	15
Private sector	125.8	674.4	2,087.8	6,141.1
Percent of TME	55	57	57	63
Total monetary expansion ^b	230.2	1,181.3	3,631.0	9,771.6
Variation in TME during year (percent) ^c	147	305	232	188
Price increase (percent) end of each period				
a. Cost-of-living index	171	444	176	170
b. Wholesale price index (domestic component)	189	485	152	152

Source: Central Bank of Argentina and INDEC. Total Monetary Expansion equals cash and demand deposits, interest-bearing and other illiquid deposits in saving institutions termed *recursos monetarios de particulares* by the Central Bank.

^aCredit minus deposits; for 1977 this item includes the monetary regulation account of the Central Bank, which amounted to 6.4% of total monetary expansion. In this table the sum representing the monetary regulation account is presented separately.

^bThe balance between loans in local and foreign currency and private sector credit is made up of changes in net worth and others not shown here. Items may not add up to total because of other nonclassified sources of monetary expansion.

^cThe total stock of M₃ at the end of each year, on which this calculation is based was (in billion pesos):

	end 1974	1975	1976	1977	1978	1979 (end June)
M ₃	156.5	386.7	1,568	5,199	14,971	25,596
ΔM ₃		230.2	1,181.3	3,631	9,772	10,625

supply accelerated, was not comforting, given the close relationship between this source of finance of the public sector deficit and inflation. The close relationship between the money supply, the wholesale price index, and the cost of living index is apparent in Table 7.

It is almost axiomatic that inflation and the cost of living will only respond to a sharp reduction in the growth of the money supply. Evidence from Table 7, supported by the flow-of-funds accounts, demonstrates that the burden of

controlling inflation must be shared through greater stringency by both the public *and* private sectors. External sources of liquidity alone are not sufficient to account for the hyperinflation that continued to plague Argentina at the end of the 1970s. One approach that could have lessened the pain of a "cold bath" of restrictive monetary and fiscal policy would have been to encourage a greater flow of private financial savings into investment so as to expand capacity, relieving the pressure of aggregate demand on the price level. However, because of expansion of the monetary base, the "liberalized" post-Peron financial system induced just the opposite, as we have seen. Short-term lending and borrowing were encouraged, while direct and indirect finance for capital formation were discouraged. Since banks were increasingly permitted to expand the range of their financial activities and allowed to go beyond what would have been the legal limits in other countries, one must look at lending incentives and borrowing constraints for the reasons for the short-term bias of financial sector activity. One problem was the rate of inflation itself, combined with the need for extremely high nominal peso interest rates to maintain equilibrium in credit markets. Depositors were offered nominal rates that fluctuated widely and tended to be below the expected rate of inflation, while lending rates were often excessively high and fluctuating as well, owing to a large spread because of high reserve requirements (Gaba, 1981). Borrowers were simply unwilling or unable to commit themselves to debt obligations of longer than a year when nominal lending rates exceeded 8 percent a month.

One alternative was to secure credit in dollars. This was in fact a recourse of the larger domestic firms as well as multinational enterprises with access to external sources of funds. It was also an option for exporters who were able to secure dollar loans by receipts in foreign exchange. Loans were indexed to the wholesale price index, but the high and uncertain rate of inflation made borrowers highly vulnerable to the composition of the wholesale price index and the effects of relative price changes on costs and sales. The fact that the price index itself was undergoing revision at the time (1979), that a new index was being proposed in which beef prices would be excluded, and that there was no official GDP deflator made such indexing extremely risky.

Similar problems faced ultimate lenders. The high rate of inflation and the experimental character of financial policy, with new instruments and approaches continually being introduced, made lenders unwilling to tie up their assets for very long periods. Moreover, it became possible to earn extremely high nominal rates of interest on short-term deposits (30, 60, and 90 days), which, notwithstanding the price level changes, gave positive yields in many periods. Keeping most financial savings in short-term balances led to a severe term transformation problem for financial intermediaries who might otherwise have extended credit for longer periods, contributing to the eventual collapse of a number of key Argentine banks. One alternative taken by lending institutions in other inflationary economies, Brazil is an example, is to secure external lines of credit. While this tends to favor the larger banks, it remains an important option. It is, of course, an additional source of inflationary pressure.

THE PAUTA SYSTEM: ITS REAL AND FINANCIAL CONSEQUENCES

A system of preannounced guidelines for exchange rate adjustment (*pauta*) that was in effect in Argentina from December 1978 to March 1981 tended to shorten the term structure of external borrowing. Dealers in foreign exchange markets had perfect certainty and zero exchange risk during the period of the *pauta*. The *pauta* system was introduced to lower the relative cost of imports and thus to provide a brake on inflation for those goods and services that might otherwise experience price increases beyond the announced rate of devaluation plus the rate of dollar inflation (Blejer and Matthieson, 1981, pp. 760-792). The approach involved an inversion of the theory underlying the monetary approach to the balance of payments. That theory argues that in equilibrium a purely competitive economy with a fixed exchange rate, high degree of foreign trade, and no water in the tariffs (that is, tariffs just sufficient to cover the marginal cost of production without permitting excess profits) would have a domestic price level for tradeable goods set by the external rate of inflation plus the rate of devaluation. Any increase in domestic inflation beyond the "imported" level would be offset by competition from cheaper imports. Any deflation would result in increased exports raising the price level.

Advisors to Argentine policymakers, with what must be called misguided faith in the compelling simplicity of the model, encouraged its use as an attempt to slow inflation. By combining measures to free up imports with the introduction of the *pautas* (a de facto "fixed" exchange rate, since devaluation is preannounced), it was hoped that Argentine inflation would be constrained through increased import competition. Such an approach did work reasonably well in Chile in the late 1970s (McKinnon, 1981). However, it was apparent that in Argentina considerable water remained in the tariffs affecting a number of key imports (especially in those industries that have strong political support for protection, such as autos, steel, paper, chemicals, and heavy industries run by the military). In addition, the reduction in tariffs going forward on a number of fronts was offset by increases in indirect taxes; continued vigorous application of nontariff barriers; rising peso costs of importing including insurance, freight, and other charges levied by those protected under Argentine law against foreign competition; plus congestion and inefficiency in the ports, which were taken over by the Navy for "security reasons." Finally, a large percentage of Argentina's production and an even larger share of employment remained in services and other nontradeables sectors, the prices of which were for all practical purposes indexed to past rates of inflation. These factors helped keep the domestic price level rising well beyond the international price of tradeables.

The result of this situation was that domestic inflation throughout the *pauta* regime (from December 1978 into 1981) was well in excess of the preannounced rate of devaluation plus external inflation rates. As of April 6, 1979, the *pauta* rate for 1979 was set at 61½ percent, while the price level promised

to increase by more than 170 percent. Some Argentine economists attempted to re-estimate external inflation by applying domestic expenditure weights for foreign prices and ended up with a rate of considerably more than 20 percent. If this factor for foreign inflation is added to the devaluation rate of 61½ percent, the monetary approach to the balance-of-payments model would suggest that an open economy in equilibrium without relative price changes could have produced a domestic rate of inflation of no more than 100 percent. However, Argentina's inflation actually accelerated during the pauta period and hit a monthly rate of more than 11 percent in August 1979.

While imports grew rapidly in 1979, they were clearly unable singlehandedly to offset the inflationary impact of massive increases in the money supply. This, combined with the Argentine consumer's understandable tendency to buy before prices rose still further, kept inflation soaring. The government's approach was perhaps least credible to those very businesses and households who were the potential key to its success. There was a widespread disbelief in the ultimate willingness to shift to a fully open trade policy, since this would send a large number of businesses to the wall and would disemploy a significant share of the work force, at least until the "cold bath" of adjustment had led to a rebirth of efficiency and recovery in the production process.

Meanwhile, as the relative cost of imports declined, many firms were already dismantling their most vulnerable lines of production and shifting from manufacturing to commerce, as had occurred earlier in Chile. Hence their credit demands were increasingly for short-term working capital and commercial credit rather than for investment loans. The rapid revaluation of the peso was also penalizing exports. This especially hurt the export of manufactures, although favorable international prices for beef, wheat, and other traditional exports helped to support the balance of payments through 1979.

The irony is that the more effective the pauta model, the more rapid should be the increase in competing imports and the shortfall in exports. Ultimately the model would predict a reversal of the balance of trade from strong surplus to strong deficit, at least until import competition forced an end to domestic inflation. This rather new variation on the traditional stop-go policies of Argentina is worth noting. Previously when the government pursued a growth-oriented approach and heated up the economy, expansion in imports of capital and intermediate goods led to balance-of-payments problems and ultimately forced a "stop" phase. By the late 1970s policy makers appeared to be attempting a slowdown, even though exports still led imports, in order to reduce inflation and force a restructuring of the economy toward greater efficiency. Instead of taking advantage of an initial trade surplus to accumulate foreign exchange earnings during the recent export boom, which would have permitted a steady growth of investment and productive capacity, policy makers appeared to be encouraging imports of every kind, especially tourism and luxury consumer goods, in order to "deflate" the economy. This, together with an across-the-board attack on "inefficiency", wound up discouraging that very expansion of capacity through productive new investment that should have been taking place to sustain growth and diversify the export base.

Argentina seems to have learned little from generations of dependence on a few traditional exports, the terms of trade of which have always varied with vicissitudes of international markets (Díaz-Alejandro, 1981). The 1970s trade boom provided an opportunity to pursue growth with improved efficiency of resource allocation, provided that (a) financial markets remained in equilibrium, (b) medium and long-term credit and direct finance of investment were encouraged, (c) the exchange rate reflected true international purchasing power parity of the peso, (d) the government dedicated itself to a program of efficient growth with stability (rather than just static efficiency), (e) projects were encouraged that would be able to take advantage of the extremely favorable long-term comparative advantage of Argentina, and (f) the infrastructure of the country (roads, power, communications, port facilities, and education) was brought up to a level reflecting the country's high growth potential. Such a set of approaches would permit the economy to weather future fluctuations in the terms of trade for traditional exports while establishing a more efficient and internationally competitive industrial and agro-industrial base. In addition it would favor the expansion of investment in rent-generating raw material and primary product exports in areas that have until recently been subjected to "disprotection" by policies that taxed rents to subsidize inefficient import-competing industries. Financial policy might play a key role in such a process, but it was not doing so at this writing. Nor was it bringing about the short-term objective of price stability.

THE REAL CONSEQUENCES OF PARTIAL FINANCIAL REFORM

By the late 1970s Argentina had developed one of the most active money markets in the world for a country at its (intermediate) level of development. But its market for medium and long-term capital had become one of the least healthy. This condition did not appear to arise from any lack of potential for long-term growth on the part of the economy as a whole. Rather it reflected uncertainties stemming from short-term exchange rate and financial policies, from recent rapid reversals in the most basic underlying economic strategies, from a history of severe political instability, and from a growing recognition that for Argentina, with its immense resource base, to fit into the world of the future, it must carry out a major assessment at all levels of society that would challenge many of its most traditional values and institutions. This study suggests that Argentina's recent, almost hypnotic, fascination with short-term money-market problems as a consequence of partial economic liberalization distracted decision makers from the kinds of medium and long-run policies that could help resolve the financial problems themselves through dynamic changes in the real structure of the economy.

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APPENDIX A

FLOW OF FUNDS FOR ARGENTINA, 1970 TO 1978

The Argentine flow-of-funds tables for the 1970s are based on the "Financial Transactions" accounts prepared by the Central Bank plus adjustments and estimates made by the author for the years 1976 to 1978. In earlier years these accounts were published in the *Memoria Anual*, but this practice was discontinued when the new financial system was introduced in 1977¹. Bank officials claim that to provide published accounts would be misleading because (1) net changes in financial asset and liability balances may have been distorted during recent rapid inflation, (2) real savings and investment estimates in current prices are not being generated by the Central Bank owing to the lack of satisfactory price deflators, and (3) data on the foreign sector are difficult to convert to current peso values because of rapid disproportional changes in the price level and exchange rate. Moreover, summary figures on actual rather than budgeted public-sector savings and investment are appearing only with a considerable lag. The accounts as they stand do not cover most nonbank financial intermediaries, contractual savings programs, private direct investment (except in certain financial institutions), or the informal credit market, which played an important role in financial intermediation before the reforms in May 1977. Also, the failure to disaggregate the private sector into business and households somewhat limits the usefulness of the accounts and analysis. Notwithstanding these reasonable reservations about the accuracy and comprehensiveness of the financial transactions data and related real flow estimates, an attempt has been made to piece together the available information, since the

¹ For a pioneering set of papers on the Argentine financial system and flow-of-funds estimates for 1967 to 1971, see Dagnino Pastore et al. (1972).

figures shed important light on the real financial relationships between the private and public sectors and the rest of the world as intermediated through the formal credit market. This information benefits from the accounting framework itself, which requires that real and financial flow data be reconciled giving the opportunity to cross-check both real savings and investment and net financial flow estimates and to compare them with other indicators of real and financial behavior of the economy.²

The accounts as presented in Table A.1 are taken from the published Financial Transactions Tables through 1976. In that year official estimates of real saving and investment of the private and public sector were not published in the flow-of-funds tables, so government investment expenditure in current pesos from another official source was used for the public sector investment figure. This then was deducted from the Central Bank's recently revised gross real investment estimate (in 1960 pesos, reflatd to current values by the domestic component of the wholesale price index), net of investment of the financial sector.³ The residual provides the estimate of private investment in the accounts. The government savings figure is then derived by summing the totals for real and financial (-) investment of the public sector. Private sector savings are estimated as a residual of gross investment less rest-of-world savings and the savings of financial institutions and the public sector as explained above. Needless to say, the real flow data are precarious, to be regarded as only broadly indicative of general trends in flows. For example, the government current account surplus for 1976, which was reported in the same source that was used for public sector investment, was 93 billion pesos rather than 461 as estimated by the residual method. Hence if the real and financial sector flows are to be reconciled, an amount of 368 billion pesos in additional government savings must be accounted for (in the real accounts) or additional net government borrowing unreported in the flow-of-funds statistics would have to be presumed. The figure for the consolidated government current account surplus is compared with that from the flow-of-funds Table A.1 for each of the years 1971 through 1978 in Table A.2.

Since all years but 1978 show a negative "errors and omissions" item, it would appear that the financial flow statistics underestimate the amount of net government borrowing, especially during the most inflationary year, 1976. This is quite possible since supplier and other credits to government are not covered in the flow-of-funds accounts. Another possible explanation for the discrepancy is that there may be inconsistencies between the reported real investment figures for the public sector prepared from consolidated government accounts and its financial investment figure. The latter is the sum of net changes in outstanding public securities and net financial asset and liability positions of financial institutions and the rest of the world with respect to the public sector. Since the two methods of estimation differ, one relying on changes in balance sheet and the other flow data, the residual may be biased.

² See Reynolds (1974).

³ Readers interested in these detailed estimates are invited to write to the author for a copy of the Statistical Annex.

TABLE A.I—FINANCIAL TRANSACTIONS OF ARGENTINA
(000 million pesos)

	1970				1971			
	Private sector	Public sector	Financial sector	Rest of world	Private sector	Public sector	Financial sector	Rest of world
A. Gross saving ^a	12.8	4.8	.4	.8	20.2	4.4	.7	2.0
Real investment	12.6	6.2	.1		18.1	8.9	.2	
B. Financial investment ^b	.2	-1.3	.3	.8	2.0	-4.5	.5	2.0
Money	2.4	.5	-2.9		5.4	.7	-6.1	
Other deposits	2.3	-.1	-2.2		4.1	-.1	-4.0	
Public securities	.1	-1.8	1.7		.1	-2.9	2.7	
Rest of world	-1.1	-.4	.8	.8	1.1	-2.0	-1.1	2.0
Debt with financial sector	-3.4	.6	2.8		-9.0	-.2	9.1	
Other	-.1	-.1	.1		.3	.0	-.1	
	1972				1973			
A. Gross saving ^a	34.2	7.8	1.6	2.6	70.1	7.5	2.3	-5.2
Real investment	29.4	16.3	.5		46.3	27.2	1.1	
B. Financial investment ^b	4.8	-8.5	1.1	2.6	23.8	-19.8	1.2	-5.2
Money	8.7	1.4	-10.1		27.8	6.6	-34.4	
Other deposits	9.2	.2	-9.3		21.6	1.5	-23.1	
Public securities	.0	-3.9	3.9		1.3	-14.8	13.6	
Rest of world	-.6	-3.0	1.0	2.6	.5	-1.0	5.7	-5.2
Debt with financial sector	-15.1	-2.7	17.8		-29.9	-9.8	39.6	
Other	2.6	-.5	-2.2		2.4	-2.3	-.1	

	1974				1975			
	Private sector	Public sector	Financial sector	Rest of world	Private sector	Public sector	Financial sector	Rest of world
A. Gross saving ^a	97.5	11.1	4.3	- 2.3	295.6	- 45.5	9.1	30.8
Real investment	70.1	40.2	.2		187.1	99.7	3.2	
B. Financial investment ^b	27.4	- 29.1	4.1	- 2.3	108.5	- 145.2	5.9	30.8
Money	32.9	10.6	- 43.5		164.3	46.1	- 210.4	
Other deposits	25.8	2.0	- 27.9		50.5	- 1.7	- 48.8	
Public securities	2.9	- 22.2	19.3		14.3	- 142.8	128.5	
Rest of world	.9	- 2.9	4.3	- 2.3	- 15.0	- 7.6	- 8.2	30.8
Debt with financial sector	- 43.9	- 13.8	57.7		- 143.5	- 25.1	168.5	
Other	8.7	- 2.8	- 5.7		37.8	- 14.1	- 23.6	
	1976				1977			
A. Gross saving ^a	1,090	(461) ^c	222	- 263	2,443	(1,730)	883	- 453
Real investment	445	991	74		1,605	2,760 ^d	237	
B. Financial investment ^b	645	- 530	148	- 263	838	- 1,030	646	- 453
Money	669	266	- 935		1,171	670	- 1,841	
Other deposits	609	49	- 658		3,150	211	- 3,360	
Public securities	284	- 527	243		- 79	- 720	798	
Rest of world	- 46	- 79	387	- 263	35	- 469	887	- 453
Debt with financial sector	- 1,041	- 200	1,241		- 3,804	- 454	4,258	
Other	169	- 39	- 129		364	- 268	- 96	

TABLE A.I. — continued on next page

TABLE A.I. — *continued*

	1978			
	Private sector	Public sector	Financial sector	Rest of world
A. Gross saving ^a	6,962	(3,036)	1,883	- 1,692
Real investment	3,070	6,475 ^e	644	
B. Financial investment ^b	3,893	- 3,439	1,238	- 1,692
Money	3,589	1,136	- 4,726	
Other deposits	7,753	487	- 8,240	
Public securities	0	(- 1,122)	1,122	
Rest of world	(1,481)	(- 1,153) ^e	1,364	- 1,692
Debt with financial sector	- 9,317	- 1,363	10,680	
Other	386	- 1,424	1,038	

^aGross savings and gross investment for 1970 total 18.9 billion pesos; for 1971, 27.3; for 1972, 46.2; for 1973, 74.7; for 1974, 110.6; for 1975, 290.0; for 1976, 1,510; for 1977, 4,602; for 1978, 10,189. Rows do not always reconcile due to rounding.

^bReported consumer credit obligations are too small to be significant.

^cFigure for government saving (calculated as a residual) seems high; perhaps the figure for government financial investment should be more negative owing to borrowing unreported in the flow of funds accounts (such as supplier credits to public sector institutions).

^dFigures for 1977 and 1978 government real investment are from the "definitive budget" (adjusted for actual outlays through Oct.-Nov. of the reporting year).

^eBased on "net external financing" figure from data on Argentine public sector operations 1970-78, National Office of Budgeting and Programming; Ministry of Economy, Argentina.

TABLE A.2. — GOVERNMENT SAVINGS FROM THE CONSOLIDATED PUBLIC SECTOR OPERATIONS ACCOUNT AND THE RESIDUAL FROM THE FINANCIAL TRANSACTIONS ACCOUNTS, 1971-78

	1971	1972	1973	1974	1975	1976	1977	1978
Government current account surplus from public sector operations accts.	4.1	5.6	-.4	1.7	-96.3	93	1,529	3,385
Government savings from financial transactions accounts	4.4	7.8	7.5	11.1	-45.5	461	1,730	3,036
Errors and omissions ^a	-.3	-2.2	-7.9	9.4	-50.8	-368	-201	349

Source: Government of Argentina, National Office of Budgeting and Programming, Ministry of Economy and author's estimates plus Central Bank sources in Table A.1.

^aErrors and omissions are government current account surplus from public sector operations accounts less government savings from financial transactions accounts.

Finally, the public sector investment figures are from disaggregated expenditure data in current values, whereas national gross domestic investment figures are estimated independently by the Central Bank from composite indexes by type of investment good, expressed in constant (1960) pesos. Hence, private and public sector investment in the accounts are not entirely comparable.

Financial flow data for 1977 and 1978 are unofficial and have been assembled for this study based on partial accounts provided by the Central Bank plus the author's estimate of the breakdown of rest-of-world financial flows. The real flow data for those years were estimated using the most recent gross investment data from the Central Bank National Accounts Department (in 1960 pesos), reflatd using the same procedure as above for 1976. Hence the real investment and gross savings estimates of the private sector in the flow-of-funds Table A.1 for the years 1976 to 1978 differ in their base from that used by the Central Bank for its earlier estimates of real investment and savings for 1970 to 1975. To determine the residually estimated private investment and savings figures that might have been obtained using the most recently revised gross investment and savings estimates of the Central Bank for the earlier years 1970 to 1975, Table A.3 has been prepared.

Note that in each case gross private saving is the residual of a residual, since it results from the summation of real investment and financial investment figures for the private sector, the former being a residual of gross domestic investment less investment in the financial sector (as reported in the financial transactions accounts) and investment in the public sector (reported from government expenditure data). An alternative approach would have been to

TABLE A.3.—GROSS SAVING, REAL INVESTMENT, AND FINANCIAL INVESTMENT OF THE PRIVATE SECTOR
AS A RESIDUAL OF ALTERNATIVE GROSS DOMESTIC INVESTMENT ESTIMATES
(billion pesos)

		1970	1971	1972	1973	1974	1975	1976	1977	1978
Private Sector										
Gross saving	A	12.8	20.2	34.2	70.1	97.5	295.6	—	—	—
	B	13.2	22.8	43.4	77.2	88.2	276.6	1,090	2,443	6,962
Gross investment	A	12.6	18.1	29.4	46.3	70.1	187.1	—	—	—
	B	13.0	20.8	38.6	53.4	60.8	168.1	445	1,605	3,070
Financial investment		.2	2.0	4.8	23.8	27.4	108.5	645	838	3,893
Other Sectors										
Gross saving		6.1	7.1	12.0	4.6	13.1	- 5.6	420	2,159	3,227
Gross investment		6.3	9.1	16.8	28.4	40.5	102.9	1,065	2,997	7,119
Financial investment		- .2	- 2.0	- 4.8	- 23.8	- 27.4	- 108.5	- 645	- 838	- 3,982
Total Domestic										
Gross saving	A	18.9	27.3	46.2	74.7	110.6	290	—	—	—
= Real investment	B	19.3	29.9	55.4	81.7	101.2	271	1,510	4,002	10,189
Wholesale price index (1960 = 100) ^a										
		569	789	1,404	2,098	2,501	7,220	42,250	106,344	268,125

Sources: Figures for A from Central Bank Financial Transactions Accounts (Table A.1). Figures for B based on most recent Gross Domestic Investment. Estimates of Central Bank National Accounts Division related by Domestic Component of Wholesale Price Index (above).

^aDomestic Component of Wholesale Price Index, Ministry of Economy National Institute of Statistics and Commerce.

estimate gross private savings directly from the real flow figures as a residual of rest-of-world savings (imports less exports), financial sector gross savings (from the financial transactions accounts), and the government current account surplus (from government expenditure data, a figure that differs in each year, 1970 to 1975, from the figure reported in the financial transactions accounts), all deducted from the Central Bank gross domestic investment figure. This alternative method would lead to an estimate of financial investment as the difference between gross savings and gross investment by sector, which would have differed from that of the financial transactions accounts, since the latter is the sum of independently reported changes in financial asset and liability positions of financial institutions, compared with the various sectors plus international financial flow data from the balance of payments.

This procedure would lead to "errors and omissions" items similar to those in Table A.2 that would serve to reconcile the real and financial flows in the flow-of-funds accounts. Note that in Table A.1 real and financial flows are automatically reconciled in the gross saving figures for each sector. In view of the exaggerated rates of inflation in the 1970s, it was felt that the errors from reflation of real flow data in 1960 pesos and financial flow data from changes in stocks of financial assets and liabilities in current pesos would swamp any such inconsistency in the underlying estimates for most years except 1975 through 1977, when it is clear that government borrowing exceeded the reported figures in the financial transaction accounts.

Continuing with an explanation of the methodology used in preparation of the Financial Transactions accounts (Table A.1), the figures for changes in holdings of public securities (*títulos públicos*) in 1978 are based on the annual net change in *deuda instrumentada en títulos valores del gobierno nacional* [public securities debt represented by securities of the national government] prepared by the Division of Public Finance of the Central Bank between December 31, 1977, and December 31, 1978, reduced by a factor of 30 percent for the assumed share of increases of public debt held by public sector institutions (the share for previous years varied between 29 and 33 percent). Since this figure exactly matched reported net increases in holdings of public securities by the financial sector (1,122 billion pesos), no net change is entered in the private sector accounts. Note that public sector obligations denominated in foreign currencies are not included in this item. The figure in 1978 for net public sector obligations to the rest of the world is taken from the aforementioned data on public sector operations, 1970 through 1978, and represents the figure on net external financing of the public sector (borrowing less amortization). Here again the figures from this source for earlier years are not precisely comparable with those on Assets and Liabilities for the rest of the world. However, the discrepancies are generally not large and make little difference to sectoral financial flow balances.