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The Future Demand for Military Expenditure in Argentina

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INTRODUCTION

As R.P. Smith[1] observed, many models of national defense assume that social welfare depends both on civilian output and on security. Overall security is in part a function of military expenditures. As Smith noted, 'The role of the state is then to balance the welfare benefits of extra security derived from military expenditures with its opportunity cost in forgone civilian output.'[2]

Implied in this model is that, *ceteris paribus*, the level of military expenditures will in large part be a function of economic conditions on the one hand and the regime type (as a proxy for defense/non-defense priorities) on the other hand. The purpose of this paper is to forecast military expenditures in a major developing country, Argentina. Argentina was chosen largely because of its importance as a major Third World arms producer and military power. In addition it has experienced marked changes in regime type and wide fluctuations in both economic activity and military expenditures during the last decade. Thus the country would appear ideal for the type of analysis described below.

METHODOLOGY

Several steps are involved in forecasting the optimal path of the Argentinean economy and the subsequent budgetary allocations between defense and non-defense activities. First, a macroeconomic model was developed which was capable of forecasting 1990 values. Parameters for external impacts (such as foreign debt) were established assuming a set of national economic priorities. A policy package was formulated which would be acceptable to the Argentine authorities and which would also be consistent with International Monetary Fund (IMF) austerity guidelines. As a next step, the most efficient optimal growth paths were simulated under various assumptions regarding the country's external debt situation. In addition, military expenditures were forecast through 1990 consistent with the model just described. Finally, to illustrate the political dimension of Argentina's budgetary process and priorities, we estimated

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changes in the level of military expenditures if a Peronist regime were to come back into power during the 1987–90 time period.

The Macroeconomic Model

The macroeconomic model used to forecast the Argentine economy was statistically estimated using a two-stage least squares procedure to establish the parameters of the model and to correct for any simultaneous bias in the estimates. The model, consisting of 66 equations,[3] was estimated for the period 1970–83 from data published by The World Bank and the International Monetary Fund.[4] Lack of comparable data made longer term estimates of real (constant price) aggregates impossible.

The model depicts the major financial and national account flows in the economy and the various Central Government budgetary items. The model is 'closed' with 14 national income and balance of payments identities. One of the major elements of the model is the estimation of military expenditures. They are assumed to be a function of (a) military expenditures in the previous year, (b) the political regime in power, and (c) whether a Falklands/Malvinas type conflict existed. The latter two variables were included in the model through the use of dummy variables.

With regard to the political regime in power, two sets of dummy variables were tested using the following values:

Years	*Regime Type*	*First Dummy*	*Second Dummy*
1970–72	1st Military	0	1
1973–75	Peronists	1	0
1976–83	2nd Military	2	2

The second dummy variable was found to be highly significant in explaining the impact of regime change on military expenditures.[5] Everything else equal, the second military regime was most inclined to allocate funds to defense, followed by the first military regime, and finally the Peronists. The other dummy variables included in the overall model took into account the increase in public consumption in 1983, the austerity programs of 1982 and 1983, and the Falklands/Malvinas war in the same two years.

The other major features in the model are that import prices are linked to world inflation and export prices and linked to imports. In addition, the volume of Argentine exports was a function of the expansion of the US economy. The financial equations were driven primarily by the nominal credit to the public sector. The money supply is assumed to increase with increases in public sector credit, and inflation is linked to the growth in the money supply.

With regard to budget allocations by the central government, the model assumes that the share for debt servicing is dependent on the government's external debt and deficit, whereas the amount for economic development is a function of debt servicing. Since several functional areas (development, social services, health, social security and welfare, and other social services) contract, as debt servicing obligations increase, a political constraint could have been introduced to limit the extent to which debt servicing (and therefore total public sector debt) could expand without major opposition. It was not included however since the Alfonsin government has given no clear indication as to the limits beyond which it is unwilling to cut basic services to resume service to the debt.

In sum, the model is designed to examine Argentina's growth prospects over the 1984–90 period. It is policy-oriented in that it can examine the impact of various policy tools and the subsequent impact on the economy. It is capable of depicting the trade-offs usually associated with macroeconomic policy-making and indicating the most efficient policy package to resolve the trade-offs.

Policy Assumptions

The policy design open to the Argentine authorities over the forecast period is based on many of the ideas developed within the World Bank,[6] and by Kiel,[7] and the conclusions of others,[8] that traditional orthodox monetarist and Keynesian policies cannot be implemented in Argentina at the present time. Five main policy assumptions have been built into our model. First, inflation must be gradually reduced to create some sort of stable environment for output to expand; it is assumed that inflation can only be controlled by reducing increases in the money supply. Second, the government must gradually reduce its deficit without precipitating a major recession. Third, real external public debt is not allowed to expand between now and 1990. Fourth, external balance must be achieved so that the country can service its foreign debt. Finally, given the present state of industry, it is assumed that no major expansion in industrial output is likely to take place at least in the near future.

It follows from these five points that private consumption and private investment must expand relative to that of the public sector if Argentina is to have any hope of reducing inflation and avoiding the concomitant recession stemming from the lack of aggregate demand. What is suggested therefore is a policy mix which gradually contracts the government sector and at the same time expands the private sector toward the existing but underutilized industrial capacity.

In terms of specific policy tools, the government could control real

investment and/or consumption, and real or nominal credit from the banking system to the public sector.[9] In a country with annual inflation levels over 100 per cent, the prospect of controlling any real variables makes little sense since the magnitudes of the variables are unknown until after the fact. Forecasts of the inflationary impact of government policy are at best hazardous in a hyperinflationary environment. The instability in Argentina and the difficulty in predicting the public's inflationary expectations makes the process of estimating a futile task.

ECONOMIC FORECASTS

From this discussion, it appears that the only remaining viable policy tool is the amount of nominal bank credit. In the initial forecast made below it is assumed that the Central Bank (with full support from the IMF) will gradually reduce nominal bank credit to the public sector by approximately 10 per cent each year from the 1984 level.[10] Furthermore, it is assumed that the dummy variables take on values to reflect (a) a continuation of the present regime, (b) continuing austerity, (c) a return to a non-conflict situation, and (d) government consumption remaining at its high 1983 level. Finally, it is assumed that external public debt is held constant at its 1983 level (i.e. approximately $20,501 million) for the entire period.

The 1990[11] results of this initial forecast in which 1990 GDP was maximized – given the above credit and debt constraints – is shown in Table 1, Col. (1). Real GDP can grow without a recession but only at an average annual rate of 2.8 per cent. While private sector investment is still nearly one-half its 1980 level, it expands at 5.5 per cent annually. Due to inflation, real bank credit to the government contracts at 5.8 per cent per annum. Military expenditures, which fell sharply in 1984, gradually expand to their 1982 level in 1987 and it is forecast that they expand at 2.3 per cent annually over the period. Both the current account and the external gap move from large deficits in 1983 to forecast moderate surpluses in 1990.

The forecast results if external public debt were to decline at an average annual rate of 5 per cent are shown in Table 1, Col. (2). The benefits which would accrue to Argentina through a successful effort to reduce external debt is clear – increased GDP growth, higher private consumption and investment, and a more favorable balance of payments situation. However, given the current economic situation, in our opinion it is unlikely that substantial progress will be made in reducing this debt. More likely, the *status quo* (Col. (1)) is the best that can be hoped for.

TABLE 1

FORECASTS OF THE ARGENTINIAN ECONOMY

		FORECASTS		
		(1)	(2)	(3)	(4)
			1990 Value		
	1983 Value[a]				
External Public Debt	20,501	20,501	14,317	20,501	20,501
Current Account, Balance of Payments	-2,057	806	6,544	243	1,366
External Gap	-4,013	2,242	7,286	1,263	3,215
Inflation rate % (CPI)	433	38	38	96	9
			Average Annual Growth: 1983-1990		
Real Gross Domestic Product		2.8	3.9	2.5	3.2
Government Expenditures		1.5	1.5	1.0	2.3
Private Expenditures					
Consumption		2.4	3.4	2.3	1.7
Investment		5.2	6.3	5.1	5.2
Bank Credit to Government		- 5.8	- 5.8	- 3.1	- 8.8
Deficit/GDP Ratio		-17.3	-18.2	-13.1	-28.6
Military Expenditures		2.3	3.9	1.9	2.7

[a]All values in million of 1974 Pesos, except External Public Debt in Millions of US$.

As a next step, the effects of 'mild' and 'severe' stabilization programs were examined for their impact on the economy and defense expenditures. Both forecasts assume that external public debt remains constant at the 1983 level over the period. The mild and severe programs reduce the central bank credit to the government by 3.1 per cent and 8.8 per cent, respectively. The results (Table 1, Cols. (3) & (4)) indicate the tangible benefits to be derived from austerity. Real GDP can grow at 3.2 per cent annually with a severe austerity program, although the growth in private consumption is slightly lower under the severe program than the mild program. Interestingly, the government, through the tight credit control to itself, can gain a larger share of resources since inflation is reduced. Similarly, military expenditures grow at a 1.9 per cent annual rate under a mild program and at a 2.7 per cent rate under a severe program of austerity. Politically, the stimulating effects of the latter program might well not be worth the costs; as noted above the private sector would not have a marked improvement in its standard of living to compensate for the likely short-run increase in unemployment.

It seems as if the forecasts made assuming a moderately austere program (Col. (1)) appear superior in terms of the policy goals outlined above – a reduction in inflation, the expansion of the public sector, and the improvement in the balance of payments. Most importantly, holding the nominal external debt constant at the approximate 1983 level is feasible.

The estimated budgetary implications of the moderately austere program are shown in Table 2. There is a slight decline in military expenditures and a significant increase in social services, with the largest increases being in health and housing services. Finally, we have compared the level of military expenditures if a Peronist type regime were to come into power in 1987 with the level assuming no change in regime (both under the assumptions of the moderate program). As can be seen in Table 3, there would be an immediate reduction in defense expenditures in 1987 on the assumption that the Peronists would assume the populist programs which characterized the 1973–76 period. By 1990 we estimate that the level of military expenditures would be just under the 1983 level. With no change in regime, expenditures would grow 2.3 per cent annually.

CONCLUSIONS

Forecasts made under a wide range of alternative austerity and external debt assumptions indicate that the prospects are good that Argentina can pull itself out of the current crisis. While it is impossible to predict the precise economic program which the government will enact, it is possible to narrow down the scope of change which is available to the authorities.

TABLE 2

SHARE OF BUDGET--MODERATE AUSTERITY

Budgetary Item	1983 Actual	1990 Forecast	Average Annual Growth in Share 1983-90
Debt Service	37.1	29.3	-3.3
Defense	14.2	10.8	-3.8
Domestic Security	4.2	4.6	1.3
General Administration	4.4	6.7	6.2
Social Services	17.4	24.4	4.9
Education	7.6	5.3	-5.0
Health	1.4	4.2	17.0
Housing	1.1	3.2	16.5
Social Security	5.3	8.6	7.2
Other	2.0	3.1	16.0
Economic Development	20.5	15.5	-3.9
Other	2.2	8.7	21.7
	100.0	100.0	

Note: External public debt held constant.

The results obtained above clearly indicate that the best that can be hoped for is a moderately austere economic program where the external public debt is held constant and the real central bank credit to the public sector declines at an average annual rate of nearly 6 per cent. This will lead to non-recessionary rate of real growth in the GDP of 2.8 per cent. Private sector consumption and investment will grow at 2.4 and 5.2 per cent respectively. At the same time, the inflation rate will be dramatically reduced, the balance of payments will improve, and the government deficit will decline.

For purposes of this study, the most significant result appears to be that the model shows that, given the political environment, military expenditures are largely influenced by economic conditions and the resources available to the authorities. A main implication is that it is extremely hazardous to forecast defense expenditures in developing countries without explicitly taking into account the macroeconomic priorities of the government, the policy constraints facing the authorities and the timing of their policy responses. The study also indicates that

TABLE 3

MILITARY EXPENDITURES[a]--MODERATE AUSTERITY

	1986	1987	1990	Average Annual Growth % 1983-90
No Change in Regime	94.4	99.3	117.8	2.3
1987 Change in Regime	94.4	80.0	98.5	-0.3

[a]Millions of 1974 Pesos

sufficient bounds can be placed on allocations to the defense sector so as to permit realistic forecasts of future defense budgets.

NOTES

1. R.P. Smith, 'The Demand for Military Expenditures', *The Economic Journal* 90, Dec. 1980, pp. 811–20.
2. Ibid., p. 811.
3. Available from the authors upon request.
4. Data for the model is from The World Bank, *Argentina: Economic Memorandum, Volume 2, Statistical Appendix* (Washington, D.C.: International Bank for Reconstruction and Development, 1985) and International Monetary Fund, *International Financial Statistics Yearbook: 1985* (Washington, D.C.: International Monetary Fund, 1986).
5. See Robert E. Looney and P.C. Frederiksen, 'Consequences of Military and Civilian Rule in Argentina: An Analysis of Central Government Budgetary Tradeoffs, 1961–82', forthcoming in *Comparative Political Studies*.
6. The World Bank, *Argentina: Economic Memorandum, Volume 1, The Main Report* (Washington, D.C.: International Bank for Reconstruction and Development, 1985).
7. 'The Real Kiel Plan for Argentina', *Latin American Regional Reports, Southern Cone*, 2 Aug. 1985, p. 5.
8. In particular see M. Diamond and D. Naswewski, 'Argentina's Foreign Debt: Its Origin and Consequences', in M. Wionczek, ed., *Politics and Economics of External Debt Crisis: The Latin American Experience* (Boulder, Colorado: The Westview Press, 1985), pp. 231–76.
9. The policy of controlling inflation through (pre-announced) devaluations has been ruled out following the problems encountered in the late 1970s.
10. Diamond and Naswewski, op. cit., for some other assumptions in the model.
11. In all forecasts, only the 1990 value is given although annual results were estimated between 1985 and 1990. These are available upon request from the authors as are values of many other variables which were forecast but not included in the published tables.