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Determinants of the Share of Government Budgets Allocated to Defense in Developing Countries

ROBERT E. LOONEY
Naval Postgraduate School
Monterey, California

INTRODUCTION

Relatively few studies have examined the patterns of government spending in developing countries and, in particular, the share of central government budgets allocated to defense. In fact, the only major study to date analyzing the share of military expenditures in the total government budget was undertaken by the International Monetary Fund (Tait and Heller, 1982). That particular study found a total correlation coefficient of only 0.15 between military and three other variables:

1. The share of population in urban areas;
2. The percentage of population aged 14 years and older;
3. The share of total public expenditures (net of defense) in gross domestic product.

In general, the study found that the same variables as those influencing general administrative expenses proved to be significant for defense. The most striking difference was that whereas urbanization had a negative impact on the share of general administrative expenditures in gross domestic product, it had a positive relationship with defense.

The IMF study concluded:

> While numerous influences not tested in this study (and indeed, impossible to test) must influence defense spending, and while the low correlation coefficient (0.15) suggests a large amount of "unexplained" defense expenditure, the significant variables mentioned above are interesting. It seems reasonable to consider that

> urbanized societies must spend more on defense and are willing to do so. Likewise, it is reasonable to expect that many authorities who are prepared to run a large public sector are also likely to accept the idea that a substantial part of the national budget is being spent on defense (Tait and Heller, 1982:9).

It should be noted that the IMF study included a large number of advanced industrial countries as well as developing countries.

The general hypothesis tested in the analysis below is that previous inconclusive results concerning the determinants of the share of military expenditure in developing countrys' budgets stem from a neglect of the manner in which government spending decisions were subject to revenue constraints and, in particular, the role played by external financing.

In particular, it is argued that developing countries can be divided into two main groups — those that are relatively resource-constrained and those that are relatively unconstrained,[1] and more importantly that patterns of military expenditure vary considerably between these two types of economies. The net result is that analysis of constrained groups separately yields a much clearer pattern between defense expenditures and their underlying determinants than that obtained by examining developing countries as a whole.

In short, in the analysis that follows an attempt will be made to gain some understanding of the effects of revenue constraint and external sources of funding on the patterns of military expenditure in a sample of developing countries, through examining countries with a more homogenous economic environment.

METHODOLOGY

The data base used for the cross section analysis differs from those used in previous expenditure studies in two important respects. First the sample is much larger — the initial data base included 96 countries. Second, the data base comprises both economic and socio-political variables. Economic variables were taken from the World Bank,[2] the International Monetary,Fund[3] and the Yale data base on political and social indicators (Taylor and Jodice, 1983). Data on defense expenditures was taken from the United States Arms Control and Disarmament Agency.[4]

The steps taken in the analysis[5] involved:

1. An initial factor analysis of the total sample of countries in order to delineate the main trends in the data, and to serve as the basis of variables for a discriminant analysis.[6]

2. A discriminant analysis to delineate the two broad groups of developing countries based on relative degrees of resource constraint.

3. A final factor analysis of each group of countries separately, with the share of defense in the government budget added to the analysis.[7]

FACTOR AND DISCRIMINANT ANALYSIS

Thirty-three independent variables were chosen for the factor analysis. The variables were selected to depict a country's external debt in 1970 and 1982, its structural condition (share of public and private consumption in GDP and the openness of the economy), its growth movements in the last decade (growth of exports, imports, private and public consumption) and its balance of payments position.[8]

Ninety-nine percent of the observed variance was accounted for by the following seven linear combinations of factors:[9]

1. Those facilitating public consumption such as gross inflow of public loans, external borrowing commitments and the resource balance;
2. Those contributing to the absolute level of extermal debt in 1982 such as the level of total public debt in 1982, past inflows of pubic loans, past extermal debt, and the current account deficit;
3. Those depicting the level of gross internatonal reserves;
4. Public external debt as a percent of GDP, 1982;
5. The growth in imports 1970-82;
6. External debt service in 1982;
7. Public external debt as a percent of GDP, 1970.

As can be seen, four of the seven factors depict "external debt as the phenomenon of external capital flows to developing countries in the 1970s and 1980s. Clearly omitting this phenomenon would result in a failure to capture a major influence on economic performance and decision making in both defense and non-defense sectors in many developing countries.

A discriminant analysis (Jones, 1980) was performed using the seven independent variables with the highest loading on each of the seven factors. With only minor exceptions there was a high probability of correct placement of the sample countries (Table 1) and a distinct grouping based on the external debt situation resulted. The first group of countries included several of the major oil

exporters and a number of newly industrializing nations such as Mexico, Greece, India, Korea, Spain, Algeria, and Malaysia. Interestingly enough, Turkey was classified (albeit only at a 66.95 percent probability of correct placement) in this group. These countries were tentatively classified as relatively resource unconstrained. The other group of countries includes those that appear to be poorer and economically less dynamic countries — typically many of the poor African and Latin American countries.

Table 1: Discriminant Analysis Of Total Sample Countries Based on Economic Factor Analysis With High Loadings

Group I		Group II	
Country	Probability of correct placement	Country	Probability of correct placement
1. Israel	69.34	1. Greece	57.78
2. Honduras	83.48	2. India	84.91
3. Cameroon	60.73	3. Nigeria	89.07
4. Sudan	66.47	4. Indonesia	90.67
5. Costa Rica	92.64	5. Egypt	68.20
6. Bolivia	86.27	6. Korea	89.95
7. Somalia	86.46	7. Rwanda	69.08
8. Tunisia	68.31	8. Turkey	66.95
9. Morocco	73.06	9. Spain	51.89
10. Guatemala	54.91	10. Venezuela	80.26
11. Malawi	91.40	11. Mexico	99.69
12. El Salvador	65.90	12. Brazil	99.02
13. Mali	97.12	13. Algeria	76.44
14. Pakistan	86.98	14. Philippines	55.78
15. Paraguay	60.02	15. Libya	75.69
16. Ecuador	56.61	16. Colombia	54.63
17. Dominican Rep.	74.12	17. Thailand	60.95
18. Liberia	94.77	18. Malaysia	65.16
19. Ivory Coast	84.42	19. Argentina	66.09
20. Mauritania	96.04	20. Saudi Arabia	94.65
21. Sierra Leone	86.05	21. Kuwait	81.31
22. Panama	94.37	22. Syria	63.95
23. Chile	70.09	23. Jordan	50.81
24. Chad	87.18		
25. Uruguay	67.87		
26. Tanzania	79.87		
27. Uganda	88.76		
28. Ethiopia	70.24		
29. Cen. Afr. Rep.	76.89		
30. Ghana	78.72		
31. Burma	82.91		
32. Sri Lanka	75.39		
33. Jamaica	90.66		
34. Trinidad	77.62		
35. Zambia	95.88		
36. Peru	71.67		
37. Zimbabwe	85.68		
38. Kenya	86.61		

The mean values of the seven discriminating variables (and other related variables) for the two groups (Table 2) confirm that the distinct structural external public debt and external capital flows have played a major role in financing government expenditures. Their debt service ratio is higher than is the case for the unconstrained countries as is the inflow of external public loans relative to exports. In addition, the external public debt as a percent of GDP was considerably higher in both 1970 and 1982. On the other hand, the constrained group of countries have had easier access to external funds, and have relied more heavily on internal sources of funding for government expenditures. For example, the external public debt is five times higher than for the constrained countries, but at the same time the level of international reserves is approximately ten times higher. The growth of imports is also significantly higher, and this group of countries has relied less heavily on deficits to finance military expenditures, government consumption or total government expenditures. While the unconstrained countries have spent larger amounts for military purposes in the absolute sense, the burden of defense (as a percent of the budget) has been smaller.

Table 2: Means of Discriminant Analysis Variables

Variable	Total Sample	Group I	Group II	Latin America	Non Latin America
Discriminating Variables					
ECIBE	0.70	0.94	0.26	0.46	0.80
PDB	5932.00	2629.30	11786.90	8041.90	3860.10
GIRB	2587.20	583.80	6138.80	2024.30	2411.70
PDPB	35.00	44.30	19.20	35.90	37.47
ZB	4.10	1.09	9.50	2.10	5.10
DSEB	14.10	15.00	12.50	18.30	10.60
PDFA	17.30	21.20	10.40	14.70	38.40
Variables	4.20	3.60	5.10	2.12	6.31
MEY	1793.20	1066.70	3048.20	1861.40	1971.60
GNPPER	117.90	57.70	223.30	39.70	179.20
MEP	14.10	13.40	15.30	9.90	18.10
GEDB	1318.10	389.10	2943.90	571.20	1541.90
ME					

ECIBE Gross Inflow Public Loans 1982 Divided by Exports 1982
PDB External Public Debt 1982
GIRB Gross International Reserves 1982
PDPB External Public Debt as a Percentage of Gross Domestic Product 1982
ZB Average Annual Growth in Imports 1970-82
DSEB Debt Service as a Percentage of Exports 1982
PDPA External Public Debt as a Percentage of Gross Domestic Product 1970

MEY Military Expenditure as a Percentage of Gross National Product 1981
GNPPR Per Capita Gross National Product 1982
MEP Military Expenditure Per Capita 1981
GEDB Defense Expenditures as a Percentage of Total Government Expenditure
ME Total Military Expenditure 1981

Next, military expenditure as a share of the government budget in 1981 was analyzed using the total sample of countries, followed by a similar individual analysis of each group of countries. The factor results for the total sample of countries obtained through including military expenditures as a share of the government budget show (Table 3) that this measure of defense expenditures loads fairly high at 74 on export growth, but has little correlation with the other main trends in the data. Group I countries however (Table 4) load heavily at 91 on a factor including a number of debt variables — the total external public debt in 1970, total external debt in 1982, and several measures of the inflow of external loans. Gross domestic product and gross national product per capita are also included in this factor. In contrast, Group II countries load fairly heavily at 86 (Table 5) on a factor that does not contain debt variables — Factor 5, which largely incorporates the effect of export growth.

In general these results are consistent with other studies examining the foreign exchange costs of military expenditures. As a basis of comparison, a recent study (Tehral, 1982) on the foreign exchange costs of the Indian military indicated that, despite the explicit long term goal of minimizing the defense claim upon foreign exchange earnings in order to further economic growth, military claims on foreign exchange were certainly not negligible. It appears, for example, that total foreign exchange requirements for defense were equivalent in value to nearly half of the Indian imports of machinery and equipment. During the 1960-70 decade, the level of these foreign exchange requirements oscillated between 8 percent and 42 percent of the deficit on the balance of payments, with an average of about 20 percent (Tehral, 1982: 156). Similarly, Brzoska has estimated that 20-30% of external public debt of developing countries in the late 1970s was due to military-related imports.

Table 3
Oblique Rotated Factor Pattern (Standard Regression Coefficients):
Economic Variables, % Defense Expenditure in Total Government Budget, Total Sample

	Factor					
Variables	1 Factors Facilitating Public Consumption	2 Factors Influencing Total External Debt 1982	3 Foreign Reserves	4 Factors Influencing Share of Military Expen. in Gvt. Budget	5 Debt Ratio 1982	6 Growth in Private Consumption
Gross Inflow Public Loans, a % of GDP 1982	99*	0	-1	-5	-4	0
Resource Balance as % of GDP 1982	96*	1	-8	-6	-4	5
Gross Inflow Public Loans as % of Exports 1982	98*	14	7	-30	7	-3
Public Borrowing Commitments as % of Exports 1982	98*	2	-5	-8	-2	5
Public Debt as % of Exports 1982	97*	0	-6	-6	-6	5
Growth in Public Consumption 1970-82	83*	6	-8	-3	-13	-
Public Consumption as % of GDP 1982	82*	-6	11	26	33	32
Public Consumption as % GDP 1960	70*	-13	-7	26	7	-8
External Public Debt as % of GDP 1970	68*	5	-26	20	16	17
Terms of Trade 1982	-78*	21	12	7	14	-2
Private Consumption as % of GDP 1982	83*	-13	-23	-5	-30	11
Private Consumption as % of GDP 1960	93*	10	-28	21	-7	-9
External Public Debt 1982	1	98*	-2	0	7	-1
Interest Payments on External Public Debt 1970	9	94*	2	-12	-1	14
Repayment of Principal on External Public Loans 1970	8	94*	2	-12	10	-29
Gross Inflow Public Loans 1982	-4	94*	-3	-8	10	-28
Public Borrowing Commitments 1982	-6	92*	4	-4	-1	24
Gross Inflow Public Loans 1970	6	91*	5	17	-4	31
Interest Payments on Public Debt 1982	-2	90*	-1	-15	19	-22
Repayment of Principal on Public Loans 1982	-3	86*	8	1	21	22
External Public Debt 1970	9	74*	2	23	-23	19
Net Inflow Public External Loans 1970	4	73*	7	37	-15	-31
Current Account Balance 1970	7	88*	15	-27	-4	-14
Gross International Reserves 1982	4	-9	93*	4	-30	-15
Gross International Reserves 1970	5	4	91*	1	-18	7
Gross National Product Per Capita 1982	-1	-11	83*	10	27	-2
Gross Domestic Product 1982	1	50	52*	-7	-33	-6
Average Maturity of External Public Debt 1982	23	-10	-59*	21	-29	5
Current Account Balance 1982	-2	-16	81	-3	3	3
Percent of Defense Expenditures in Total Government Expenditures 1981	-7	8	0	74*	0	1
Export Growth 1960-70	-4	-1	0	69*	4	0
Export Growth 1970-82	-21	25	24	42*	10	23
Public External Debt as % of GDP 1982	37	1	-23	12	65*	-3
External Debt Service as % of GDP 1982	-8	35	-15	-18	61*	-10
Exports as % of GDP 1982	7	-11	21	37	55*	-30
Growth in Private Consumption 1970-82	21	4	-3	10	-4	22
Growth in Imports 1970-82	43	19	3	12	-23	76*
						68*

Table 4: Oblique Factor Pattern (Standard Regression Coefficients): Economic Variables, % Defense Expenditures in Total Government Budget, Group I Countries

Variables	Factors 1 Facilitating Public Consumption	2 Influencing Share of Military pend. in Gvt. Budget	3 Servicing External Debt Ex-1982	4 Export Position	5 External Public Debt 1982	6 Growth in Exports
Gross Inflow Public Loans as % of GDP 1982	100*	-2	4	-4	-7	4
Public Borrowing Commitments as % of GDP 1982	100*	-3	3	-3	-9	1
Gross Inflow Public Loans as % of GDP 1982	100*	-3	5	0	-9	0
Public Debt as % Exports 1982	98*	-3	0	-3	-7	-2
Resource Balance 1982	95*	-18	20	6	-1	-1
Growth in Public Consumption 1970-82	93*	-14	-6	0	12	4
Growth in Imports 1970-82	80*	0	-19	-4	13	37
Public Consumption as % of GDP 1982	77*	36	-6	28	2	-6
Public Consumption as % of GDP 1970	76*	15	-9	18	-22	-1
External Public Debt as % of GDP 1970	76*	18	-9	11	-5	-16
Private Consumption as % of GDP 1982	-79	0	0	-32	-17	-17
Terms of Trade 1982	-92*	3	-16	20	22	13
Private Consumption as % GDP 1960	-97*	-7	-4	8	0	0
Gross International Reserves 1982	4	98*	6	-18	-6	22
Net Inflow Public External Loans 1970	4	95*	5	10	-5	-9
Gross National Product Per Capita 1982	-10	92*	-6	4	-12	33
Percent of Defense Expenditures in Total Government Expenditures 1981	3	91*	-43	-16	1	-1
External Public Debt 1970	9	85*	31	1	- 2	-12
External Public Debt 1982	-5	82*	-14	8	37	-8
Gross Inflow External Loans 1970	6	81*	35	10	-1	4
Gross International Reserves 1970	2	74*	26	-15	9	13
Interest Payments on External Debt 1982	-3	72*	0	0	45	2
Repayment of Principal on Public Loans 1982	-1	63*	0	3	60	-3
Gross Inflow Public Loans 1982	2	56*	23	8	49	0
Gross Domestic Product 1982	-6	46*	29	-41	18	-31
Current Account Balance 1982	-10	-75*	-25	21	-3	-28
Current Account Balance 1970	10	-89*	40	-10	25	0
Repayment of Principal on Public External Loans 1970	7	12	90*	4	9	10
Interest Payments on External Debt 1970	7	16	89*	-1	7	0
Growth of Private Consumption 1970-82	46	5	-57*	-5	28	33
Exports as % of GDP 1982	0	2	15	88*	16	18
Public External Debt as % of GDP 1982	18	-16	4	83*	16	1
Growth in Exports 1960-70	-4	8	-28	69*	—	-17
External Debt Service as % of Exports 1982	-21	1	1	14	75*	2
Public External Borrowing Commitments 1982	5	53	22	3	53*	-2
Growth in Exports 1970-82	-21	42	38	30	-26	42*
Average Maturity of External Public Debt 1982	32	-16	-29	11	-22	41*

Table 5: Oblique Factor Pattern (Standard Regression Coefficients): Economic Variables, % Defense Expenditures in Total Government Budget, Group II Countries

Variables	Factors 1 Factors Influencing Total External Debt	2 Determinants of Growth in Public Consumption	3 Factors Influencing Share of Public Consumption	4 Growth in Imports	5 Factors Influencing Share of Military Expend. in Gvt. Budget
External Public Debt 1982	99*	2	-5	7	-4
Gross Inflow Public Loans 1982	96*	5	8	18	-8
Interest Payments on External Public Debt 1982	94*	-3	11	10	-16
Repayment of Principal on Public External Loans 1970	92*	-11	2	23	-3
Public External Borrowing Commitments 1982	92*	12	-9	35	-13
Repayment of Principal on Public External Loans 1982	87*	-5	-1	-39	14
Debt Service on Public External Debt as % of Exports 1982	84*	-7	28	-18	-12
Interest Payments on External Public Debt 1970	84*	-3	-18	-34	4
Gross Inflow Public Loans 1970	79*	0	-39	-9	15
Resource Balance as % of GDP 1982	69*	-51	-6	-15	1
Gross Inflow Public Loans as % of Exports 1982	67*	56	24	-29	-15
Terms of Trade 1982	60*	-48	-31	41	-16
Current Account Balance 1970	-88*	-7	11	-10	-19
Public Borrowing Commitments as % of Exports 1982	5	92*	-6	-7	-24
Average Maturity of Public External Debt 1982	-31	87*	-15	-6	3
Current Account Balance 1982	-10	80*	-16	26	0
Average Annual Growth in Public Consumption 1970-82	-7	71*	-2	61	-10
Public External Debt as % of Exports 1982	50	59*	-6	-47	-9
Gross International Reserves 1982	-25	-73*	-40	9	-21
Gross International Reserves 1970	-9	-83*	-20	-26	0
Gross National Product Per Capita 1982	-5	-83*	8	-5	-19
Gross Inflow Public Loans as % of Exports 1982	38	11	72*	30	10
Public External Debt as % of GDP 1982	64	15	66*	12	15
Public Consumption as % of GDP 1982	-22	2	65*	-10	-1
Exports as % of GDP 1982	-4	-24	62*	49	28
Gross Domestic Product 1982	42	-49	-55*	-13	-4
External Public Debt 1982	49	-7	-57*	-15	17
Private Consumption as % GDP 1982	-44	45	-62*	1	-3
Net Inflow Public External Loans 1970	57	6	-64*	17	13
Growth in Private Consumption 1970-82	17	-1	13	88*	-14
Growth in Imports 1970-82	10	37	-3	80*	-13
Public Consumption as % of GDP 1982	-16	-3	23	66*	26
Public External Loans as % of GDP 1970	39	9	-24	55*	38
Percent of Defense Expenditures in Total Government Expenditures 1981	-13	14	5	7	86*
Growth in Exports 1970-82	12	-14	8	-21	83*
Growth in Exports 1960-70	-17	-2	6	12	75*
Private Consumption % of GDP 1960	3	48	-37	-8	54*

IMPLICATIONS FOR THE FUTURE

With this background, and in terms of the future, there are several general conclusions that can be drawn from existing forecasts of likely foreign exchange earnings of developing countries during the rest of the 1980s. One such study for Latin America (cf. Inter-American Development Bank, 1985), develops two alternative economic growth scenarios. In these it appears that for the region as a whole, interest on foreign debt will continue to be a heavy burden on export income and the main determinant of the current account deficit in the balance of payments.

For example, under a low growth scenario, with a gross domestic product increase of about 2.7 percent per year (equivalent to population growth) and expansion of the region's exports at a rate of about 11 percent a year — the prospects are relatively favorable. In this scenario, the drain on export earnings caused by the debt interest payments tends to decline. The projected economic picture assumes the continuation of disciplined public and private expenditure policies that will make it possible to maintain a moderate import growth which, together with a vigorous expansion in exports, would lead to an increased foreign trade surplus. The Bank's simulation exercise shows, however, that the growing trade surplus would reach the level of interest payments only at the end of this decade. If, in addition, a low foreign debt growth rate of 4 percent annually is attained, the net transfer of foreign savings received by the region would continue to be negative and growing in the upcoming years. Certainly, the rate of growth of real imports would in no way approach the levels reached by the unconstrained group of countries during the 1970-82 period.

Under the alternative scenario of a 5.4 percent annual economic growth rate and with the same conditions of export expansion assumed in the previous scenario, imports would rise faster, and the trade surplus would decline. The viability of this growth scenario depends, among other things, on the unlikely possibility of the Latin American countries being able to attract a growing net external financing estimated at $73 billion toward the end of the decade (which would be more than double the net disbursement of foreign loans in 1982).

Again given the fact that the constrained group of countries already have a higher debt burden in terms of external debt/GNP, it seems highly unlikely that major inflows of external funds will be directed to any of the members of this group of countries, especially if one of the intended uses of the additional inflow of funds was to increase military expenditures.

In summary, analysis of the process by which foreign debt has accumulated in Latin America indicates clearly the constraints imposed by foreign debt on the prospects for the region's economic development. Even under conditions of low economic growth assumed in the first scenario, the foreign exchange earnings generated by exports would only cover interest payments and imports of consumer goods and intermediate inputs. The cost of merchandise and capital imports would have to be supported by the new inflow of external savings. All of this also assumes that the international financial community will respond favorably to the need for long-time refinancing of debts maturing in the coming years, a rather heroic assumption given the existing near default position of most of the countries in the region.

While we have concentrated our forecast on the Latin American countries, it is fairly safe to generalize that similar scenarios apply to the African countries and most of the oil exporters.

CONCLUSIONS

In short, the results indicate the relative importance of external public debt in affecting the share of defense expenditures in the budgets of the resource constrained countries. These countries, everything else equal, have utilized external public debt as a major means of increasing relative allocations to the defense sector.

External public debt does not seem to have been a major factor responsible for affecting the relative share of resources allocated to defense by the relatively resource unconstrained countries. Instead, this group expanded the share of resources devoted to defense as export receipts increased.

While it is always difficult to make projections out of a cross-sectional framework, we can probably safely anticipate that given the relatively slim prospects of increased external borrowing throughout the rest of the 1980s on the part of less developed countries as a whole, and particularly those in the constrained group of countries, together with correspondingly bleak prospects for a major acceleration in exports in the unconstrained group (many of whose members are oil exporters), defense expenditures are unlikely to increase their relative share in the budgets of developing countries during the foreseeable future.

NOTES

1. Here resource constraint refers to the relative availabilities of savings and foreign exchange. This distinction between developing countries has yielded

some useful results in the analysis of the impacts of defense expenditures on economic growth. See for example, Frederiksen and Looney, 1982; 1983; 1985. In general, defense expenditures have a positive impact on overall growth in countries that have relative abundant foreign exchange and savings rates, while its impact is negative in those countries with relative shortages of these resources.

2. The World Bank, *World Development Report,* (New York: Oxford University Press). Various issues and the World Bank, 1983.

3. The IMF data consists of government expenditure by category and is taken from the Internatonal Monetary Fund, *Government Financial Statistics Yearbook* (Washington; The International Monetary Fund), various issues.

4. United States Arms Control and Disarmament Agency, *World Military Expenditures and Arms Transfers* (Washington: USACDA), various issues.

5. Computations were made using the programs designed by SAS Institute. See SAS Institute (1983) for a description of the program and accompanying statistics.

6. For a detailed explanation of this procedure see Looney and Frederiksen, 1986. An interesting application of discriminate and factor analysis along the lines adopted here is given in Jones, 1980.

7. A similar methodology was used in Adelman and Morse, 1965 where per capita was added to an initial factor analysis of social, political and economic variables. The factors that per capita income loaded most heavily on were interpreted as having the greatest influence on the level of development.

8. The complete list of variables and the orthogonally rotated factor pattern (to assure that the variables with high loadings on each factor were relatively uncorrelated) can be obtained from the author upon request.

9. The extent of correlation between each factor and each variable is indicated by the coefficients of the linear combinations — the factor loadings. The program used specified that at least 99 per cent of the variance in the independent variables be accounted for by the factors. See SAS Institute (1983) for a description of the factor analysis program and discussion of the associated statistics.

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ÖZET

Bu yazının amacı, gelişmekte olan ülkelerdeki ekonomi çevrelerini savunmaya ayrılan bütçe payı üzerindeki olası etkilerini incelemektir. Yazının genel tezi, bu alanda daha önceden yapılan çalışmaların kesin bir çözüme ulaşamamasının, hükümetin harcama kararlarının hükümeti gelir sınırlarına — özellikle elde mevcut olan döviz kaynağının oynadığı role — göre alınması yönteminin gözardı edilmesinden kaynaklandığıdır.

Özellikle, gelişmekte olan ülkelerin iki ana gruba ayrılabileceği gösterilmiştir. Bir grup göreceli olarak döviz kıtlığı ile sınırlandırılırken, diğer grubun bu konuda bir sıkıntısı yoktur. Bu yüzden iki grubun askeri harcamalarının şekilleri oldukça değişiktir. Daha ayrıntılı bir şekilde belirtmek gerekirse, göreceli olarak döviz sıkıntısı çeken ülkeler savunmanın bütçedeki payını dışarıya borçlanarak arttırmışlardır. Döviz sıkıntısı ile sınırlandırılmayan ülkeler ise, bütçeden savunmaya ayrılan payı artan ihracat gelirleriyle karşılamışlardır.

Çalışmamızdan, 1980'lerin geri kalan bölümünde, birçok gelişmekte olan ülkenin artmış olan ihracat gelirleri ve ilerisi için dış borç sağlayabilme olanakları konularındaki belirsizliklere dayanarak, gelişmekte olan ülkelerin bütçelerinden daha küçük bir payı savunmaya ayırmalarını beklememiz gerektiği sonucunu, çıkarmış bulunmaktayız.