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THE POLICY RELEVANCE OF RECENT RESEARCH ON THE ECONOMICS OF THIRD WORLD MILITARY EXPENDITURES

Robert E. Looney
Naval Postgraduate School, Monterey, California

Until the early 1970s, third world policy makers received clear guidance from economists: the production (or purchase) of more guns must come at the sacrifice of butter. This all changed with the 1973 publication of Emile Benoit's seminal work[1]. Benoit's analysis was the first quantitative assessment of the manner in which third world defense expenditures affect overall rates of economic growth. Needless to say, his counter-intuitive finding that defense expenditures do not necessarily hinder or help growth stimulated a deluge of critical, follow on papers.[2]

Concurrent analysis by Charles Wolf,[3] however, suggested that in certain situations, particularly those present in the newly industrializing countries of South East Asia, defense expenditures, through creating a more stable economic environment, stimulated rates of investment, technological progress, technology transfer and hence increased overall growth.

In contrast, much of the quantitative research in the early 1980s – largely undertaken in England by Saadat Deger[4] and associates and using large samples of developing countries – brought the debate full circle, through lending considerable

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1. Emile Benoit, *Defense and Economic Growth in Developing Countries* (Lexington, Mass: Lexington Books, 1973).
2. For an excellent summary and assessment of this literature Cf. Steve Chan "Military Expenditures and Economic Performance," in United States Arms Control and Disarmament Agency, *World Military Expenditures and Arms Transfers* (Washington: ACDA, 1987), pp. 29-38.
3. Charles Wolf, "Economic Success, Stability and the 'Old' International Order," *International Security* (1981), pp. 75-92.
4. See in particular Saadat Deger, *Military Expenditures in Third World Countries: The Economic Effects* (London: Routledge and Kegan Paul, 1986).

support to the conventional wisdom that increased defense expenditures retard growth. Here, it is important to note that the magnitude of these effects was so small as to suggest that only marginal increases in growth could be obtained through disarmament and or restraint in expanding defense expenditures.

Given these somewhat contradictory findings it is little wonder that third world policy makers continue to increase or decrease defense expenditures for reasons largely unrelated to potential economic gains or losses. This is somewhat in contrast to the situation in developing countries where increasing evidence exists that military expenditures, particularly in those countries with an indigenous arms industry, have been used by several governments as a form of "Military Keynesianism" to stabilize domestic economic performance.[5]

Should the state of research on third world military expenditures lead third world policy makers (and aid donors) to abdicate responsibility for advising either increased or decreased military expenditures on purely non-strategic grounds? We submit that more recent quantitative evidence on third world military expenditure has largely reconciled previous contradictory findings, thus permitting fairly unambiguous guidelines as to the likely economic consequences of increased defense expenditures in less developed countries.

Resent Research on the Defense-Growth Controversy

Subsequent to Deger's efforts, research in the United States has focused on various topologies of developing countries.[6]

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5. As for example in the case of Canada as documented in John Treddnick, "The Arms Race and Military Keynesianism," *Canadian Public Policy* (1985), pp. 77-92. See also Robert E. Looney, "Military Keynesianism in the Third World: An Assessment of Non: Military Motivations for Arms Production," *Journal of Political and Military Sociology* (Spring 1989), pp. 43-64.

6. The rationale for this approach is given in P.C. Frederiksen and Robert E. Looney, "Defense Expenditures and Economic Growth in Developing Countries," *Armed Forces and Society* (Summer, 1983), pp. 633-646; P.C. Frederiksen and Robert E. Looney, "Another Look at the Defense Spending and Development Hypothesis," *Defense Analysis* (September 1985), pp. 205-210; and Robert E. Looney and P.C. Frederiksen, "Defense Expenditures, External Public Debt and Growth in Developing Countries," *Journal of*

The philosophy underlying this approach implicitly assumes that the ramifications of defense expenditures will be largely conditioned not by their dollar amount, or share of GNP *per se*, but instead by the economic environment in which they are undertaken. Similarly it is assumed that third world economic environments vary sufficiently to warrant classifying countries into two or more relatively economically homogenous subgroupings for purpose of analysis.

Also implicit in this research is the underlying assumption that defense expenditures make both positive and negative contributions to economic growth. The positive impacts stem from the factors originally observed by Wolf – technological spin-offs, Keynesian type demand linkages to sectors operating at excess capacity, and the transference of skills acquired in the military to civilian activities. Negative impacts are related to the opportunity cost of resources pre-empted from the private sector.

The methodology largely follows the structuralist macroeconomics approach to development pioneered by Hollis Chenery.[7] More specifically this approach implicitly assumes along linear programming type lines that growth in developing countries is constrained by various resource limitations – most often foreign exchange or domestic savings. It follows that given the relative differences between countries as to the extent to which resources are binding, defense expenditures should have a varied impact depending upon the resource endowments of the countries in which they are undertaken.

This appears to be precisely the case.[8] Significant differences between developing countries (Table 1) were found with regard to a wide spectrum of resource indices. In countries where foreign exchange and or savings are relatively abun-

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Peace Research (December 1986), pp. 197-211.

7. Hollis Chenery and A. Strout, "Foreign Assistance and Economic Development," *The American Economic Review* (September 1966), pp. 679-733: and H. Chenery, "The Structuralist Approach to Economic Development," *The American Economic Review* (May 1975).

8. Cf. the studies cited in note # 6. Country grouping based on resource constraint are listed in Table 2.

dant, its opportunity cost in terms of lost non-military output appears to be low enough so that empirically the positive impacts derived from increased military expenditures have tended to predominate.[9] The opposite was found for countries experiencing relatively severe shortages of foreign exchange and or domestic savings.

Table 1

Comparisons of Constrained and Unconstrained Developing Countries

(means)	Constrained Group	Unconstrained Group
Gross Inflow of Public Loans/Exports, 1982	0.94	0.26
External Public Debt, 1982	2629.30	11786.90
International Reserves, 1982	583.80	6138.80
External Public Debt/GDP, 1982	44.30	19.20
Growth in Imports, 1970-82	1.09	9.50
Debt Service/Exports, 1982	15.00	12.50
External Public Debt/GDP, 1982	21.20	10.40
Growth in Public Sector Consumption, 1970-82	7.40	8.70
Public Consumption %GDP, 1982	18.10	15.70
Private Consumption %GDP, 1982	70.00	62.20
Government Expenditures %GDP, 1981	26.90	25.40
Government Expenditures %GDP, 1972	20.50	19.50
Gross Investment %GDP, 1982	18.00	26.30
Government Surplus (deficit) %GDP, 1981	- 6.20	- 2.90
Government Revenue % GNP, 1981	19.90	22.90
Public Borrowing Commitments %Exports, 1982	1.20	0.31

9. Perhaps, however at the expense of a deteriorating distribution of income. Cf. Robert Looney, "Impact of Arms Production on Third World Distribution and Growth," *Economic Development and Cultural Change* (October 1989), pp. 145-54.

Public Borrowing Commitments %GDP, 1982	6.88	0.04
Debt Service % Exports, 1982	15.00	12.50
Debt Service % GDP, 1982	4.10	2.90
Gross Inflow Public Loans/GDP, 1982	5.74	0.04
Gross Inflow Public Loans/Exports, 1982	0.94	0.26
Net Inflow Public Loans/Exports, 1982	0.70	0.15
Total Government Revenue % GDP, 1972	16.80	19.40
Growth in GDP, 1970-82	5.60	3.70
Increase in Public External Debt to GNP, 1970-82	23.10	8.80
Military Expenditures % GNP, 1981	3.60	5.10
Military Expenditure per capita, 1981	57.70	223.30

Sources: Economic Data World Bank, *World Development Report*, various years (New York: Oxford University Press). *Military Expenditure Data: World Military Expenditures and Arms Transfers*, various issues (Washington: United States Arms Control and Disarmament Agency.

Extending this analysis to the determinants of defense expenditures, it is again apparent that third world countries are not homogenous with regard to the factors affecting arms imports, overall military expenditures. Again it appears that access to foreign exchange is the common thread in accounting for fundamental differences with regard to both the production[10] and importation of arms.[11] In fact there is an overlap between the resource unconstrained countries and those with a domestic arms industry[12] (Table 2). A similar overlap exists

10. Robert E. Looney and P.C.Frederiksen, "Profiles of Latin American Miliary Producers," *International Organization* (1986), pp. 745-752.
11. Robert E. Looney, "Economic Factors Affecting the Third World Arms Trade," *International Trade Journal* (Summer 1988), pp. 377-408.
12. As defined in Stephanie Neuman, "International Stratification in Third World Military Industries," *International Organization* (Winter 1984), pp. 167-198. Arms

between countries that are constrained and those that do not have an indigenous arms industry. As one might expect, many of the same structural contrasts characterizing resource constrained and unconstrained countries also apply to the arms producers/non-producers[13] (Table 3).

Recent research[14] also indicates[15] that it is possible that a large group of relatively debt free (debt as a percentage of GDP) resource unconstrained countries have contained arms imports within the limits imposed by their self-financing rather than risk jeopardizing their overall credit-worthiness. On the other hand it is possible that a large proportion of the debt accumulated by the resource constrained group of less developed countries (LDCs) has stemmed from military expenditures. Apparently, the perceived need to expand defense expenditure by this group in the face of foreign exchange shortages has resulted in relatively high levels of external indebtedness measured either as a percentage of exports or GNP.

Budgetary analysis[16] indicates that the constrained countries have increased military expenditures largely at the expense of economic allocations. Non-constrained countries show no apparent tradeoff between defense and economic

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producers are defined by her as those countries producing at least one major weapons system.

13. Robert E. Looney "Economic Environments Conducive to Indigenous Third World Arms Production," *The Singapore Economic Review* (October 1988), pp. 63-78.

14. See Robert Looney, "Impact of Military Expenditures on third World Debt," *Canadian Journal of Development Studies* (1987); and Robert E. Looney, "The Influence of Arms Imports on Third World Debt," *Journal of Developing Areas* (January, 1989), pp. 221-232.

15. This research produced nearly identical findings for arms producer and non-producing countries as was found or the resource constrained and unconstrained countries. Cf. Robert E. Looney "Socio-Economic Environments and the Budgetary Allocation Process in Developing Countries: The Case of Defense Expenditures," *Socio-Economic Planning Sciences* (1988), pp. 71-82.

16. Robert E. Looney, "Military Expenditures in Latin America: Budgetary Analysis," *Journal of Economic Development* (1986); Robert E. Looney, "Budgetary Impacts of Third World Arms Production," *International Journal of Public Administration* (1988), pp. 601-623; and Robert E. Looney, "Financial Constraints of Potential Latin American Arms Producers," *Current Research on Peace and Violence* (1987), pp. 159-68.

expenditures.

The results obtained from time series, country specific studies[17] have provided further insights into this process:

1. It appears that negative impacts stemming from increased defense expenditures are not so much a function of increases in the share in GDP (as assumed in the cross sectional studies), but instead, are the result of short term surges.

2. The impact of increased allocations to defense tends to vary significantly from sector to sector (agriculture, industry, investment), being positive in some instances and negative in others (during the same time interval).

Table 2

Country Sample

Arms Producers		Non-Producers			
Israel	c	Nicaragua	c	Panama	c
India	u	Cameroon	c	Uruguay	c
Nigeria	u	Tanzania	c	Uganda	c
Indonesia	u	Sudan	c	CAR	c
Egypt	u	Costa Rica	c	Ghana	c
S. Korea	u	Bolivia	c	Burma	c
Singapore	u	Senegal	c	Jamaica	c
Venezuela	u	Somalia	c	Trinidad	c
Mexico	u	Togo	c	Papua	c
Brazil	u	Tunisia	c	Zimbabwe	c
Philippines	u	Burundi	c	Honduras	c
Ecuador	c	Guatemala	c	Kenya	c
Colombia	u	Malawi	c	N. Yemen	c

17. Robert E. Looney and P.C. Frederiksen, "Economic Determinants of Latin American Defense Expenditures, *Armed Forces and Society* (Spring 1988), pp.459-471; Robert E. Looney and P.C. Frederiksen, "The Economic Determinants of Military Expenditures in Selected East Asian Countries," *Contemporary Southeast Asia* (forthcoming, 1990); Robert E. Looney "The Role of Military Expenditures in Pre-Revolutionary Iran," *Iranian Studies* (1988), pp. 52-83; and Robert E. Looney "Impact of Defense Expenditures on the Saudi Arabian Economy," *Journal of Arab Affairs* (Fall 1987), pp. 198-229.

Thailand	u	Niger	c	Jordan	u
Malaysia	u	El Salvador	c	Liberia	c
Peru	c	Paraguay	c	Algeria	u
Chile	c	Haiti	c	Ivory Coast	c
Sri Lanka	c				
Turkey	u				
Peru	c				
Dominican Republic	c				

Data Sources: Economic data was taken from the World Bank, *World Development Report*, New York: Oxford University Press, various issues. Military expenditure data was taken from the United States Arms Control and Disarmament Agency, *World Military Expenditures* (Washington: United States Government Printing Office), various issues. The classification of countries as arms and non-arms producers is from: Stephanie Neuman, "International Stratification in Third World Military Industries," *International Organization* (Winter 1984), pp. 167-198.
u = resource unconstrained; c = resource constrained

Table 3

Structural, Performance and Defense Expenditure Differences: Third World Arms/Non-arms Producers
(means)

Symbol/Variable	Arms Producers	Non-producers
EXTERNAL/BALANCE OF PAYMENTS		
Resource balance	-4.7	-11.6
Growth in imports 1960-70	5.4	6.0
Growth in imports 1970-80	5.8	3.2
Growth in exports 1960-70	5.7	9.6
Growth in exports 1970-80	4.9	-0.7
Current account balance	-2,593	791.5
EXTERNAL DEBT		
Outstanding external debt	1,987	154.8
Debt as share of GDP	18.2	35.1
External borrowing commitmen	2975.4	381.6
Net inflow public capital	1463.9	98.7

FISCAL/SAVINGS (%GDP)		
Average national savings	20.7	15.2
Average marginal savings	19.5	8.6
Government consumption	16.7	14.5
Gross domestic investment	14.8	17.3
COMPOSITION OF GDP		
Share of agriculture	18.5	29.4
Share of Manufacturing	18.1	10.2
Share of Exports	32.8	24.9
DEFENSE EXPENDITURES		
Military expenditures	1,597.9	936.7
Armed forces	220.3	68.3
ME share of GNP	4.1	5.5
ME per capita	110.5	147.2
PERFORMANCE VARIABLES		
Export instability (1967/71)	8.6	10.8
Growth GDP, 1960-70	5.8	5.4
Growth GDP, 1970-80	5.2	3.7
Gross international Reserves	476.3	122.6
Per capita income	1,749.6	1,795.0
SIZE VARIABLES		
Area	1,280.2	502.8
Gross Domestic Product	47,835.9	9,529.8
Population	67.9	10.9

Note: Unless otherwise specified, figures are average values for the 1970-80 period.

3. The impact of defense expenditures on the economy appears to also be closely related to the budgetary priority process. Increases in defense financed by reductions in social expenditures and or domestic borrowing tend to impact positively on the economy. In contrast increased defense financed by reductions in economic expenditures or increased external borrowing tend to impact negatively on the economy.[18]

In short, the research summarized above demonstrates a consistent pattern whereby a specific group of some twenty Third World states – generally the more successful economi-

18. Robert E. Looney, "Austerity and Military Expenditures in Developing Countries: The Case of Venezuela," *Socio-Economic Planning Sciences* (1986), pp. 161-165.

cally, and/or those with the greatest access to foreign exchange (either through exports and or capital inflows) – produce arms and at the same time derive positive impacts from military spending. A larger group of some forty countries less successful economically, or with limited access for foreign exchange do not produce arms and, in addition fail to derive any positive economic impacts from defense expenditures. These countries experience lower growth and higher external debt burdens following an expansion in defense expenditures.

Implications for Public Policy

The studies summarized above suggest the importance of economic variables in affecting the impact of defense expenditures, and their method of financing. The fact that a much larger group of countries experiences negative impacts from increased defense expenditures (as opposed to a smaller group that obtains positive benefits) explains why weak negative impacts are found when both sets of countries are analyzed as a combined group. However, because Deger's studies indicated only marginal gains to growth from reduced allocations to defense, her findings were thought to have little relevance for public policy.

The major implication of the empirical work summarized here is that it may be more feasible than previously thought to develop models for predicting and monitoring the various aspects of third world economic performance as they pertain to changes in military expenditures. For example, because the more recent analyses suggest fairly significant increases in growth associated with reduced levels of military expenditures in resource constrained countries, these studies suggest ways to improve the United States Agency for International Development's reporting to the Congress on implementation of Section 620 of the Foreign Assistance Act. In this report, A.I.D. must identify recipient countries which have exceeded a comparative norm for military expenditures and advise whether each such country should be ruled out for four kinds of U.S. assistance as a result of Section 620 considerations.

Similarly, and perhaps because of the lack of strong

empirical evidence as to the detrimental economic effects associated with defense expenditures, the International Monetary Fund (IMF) has been somewhat reluctant to set limits to military expenditures as part of its standard stabilization program for problem borrowers. The findings summarized above suggest that reduced military expenditures would not only increase growth in these countries, but perhaps more importantly would facilitate increased economic activities while freeing up foreign exchange for debt servicing. The IMF's programs while often ineffective in the past, might be considerably strengthened if credit linked to targets in military spending were made an integral part of its policy on conditional lending.

On the other hand, it is not completely apparent what if any public policy prescriptions are implied for the set of less resource constrained countries obtaining positive benefits from defense expenditures. Is there an optimal level of defense expenditure after which additional expenditures exhibit falling productivity in contributing to growth? Clearly the rate of return on defense expenditures is positive for these countries, but is it higher than for alternative forms of public expenditures? Considerably more in depth country studies will have to be undertaken before this issue can be resolved.