

# Determinants of Third World Mineral-Oil Economies External Debt

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Third World mineral economies have experienced considerable problems in recent years in servicing their external debt. The question asked in this paper is whether or not these economies are inherently more prone to defaults and reschedulings than developing countries in general, and if so for what reason.

The main thesis of the paper is that developing countries have not been uniform in their accumulation of debt, and that in fact the mineral-oil economies have borrowed in international markets for reasons quite different from those of other developing countries. Furthermore, they have used their debt in ways distinctively different from non-mineral/oil countries. The analysis undertaken in the study tends to confirm these patterns. It appears that mineral-oil countries have not only higher levels of debt per level of gross domestic product than other developing countries, but have in many ways used this debt more productively. Thus it appears that the relatively large number of defaults experienced by this group of countries appears to be as much the fault of the international financial community as of the countries themselves.

## I. Introduction

The increasing indebtedness of the developing countries has attracted much attention in recent years (Nowzad and Williams; Bravand and Williams; Dillon, et al.; and Griffith-Jones and Sunkel). The main focus of that attention has been the rapid in-

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crease in external debt and the capacity of the developing countries to service that debt.

Surprisingly, international banks as well as public lenders have, over the past decade, suffered some of their major disappointments with regard to their loans to mineral and oil exporting countries — countries whose marketable exports would, on the surface, seem to assure an above average ability to service these obligations (Looney 1987a; Looney and Knouse 1987). This has not been the case. In fact of the 78 international bank debt restructuring cases and bank financial packages between 1978 and June 1985, 36 were undertaken by third world mineral and oil exporters. Of these, 27 were mineral exporters, and 9 by oil exporters (Dillon, et al.).

Similarly, of the 64 official multilateral debt restructuring cases undertaken between 1975 and 1985, 29 were by mineral and oil exporting countries, with 25 by mineral exporters and 4 by oil exporters (Dillon, et al.).

Nankani has shown that mineral economies are fundamentally different than other developing countries with regard to a number of structural and performance characteristics. Do these differences extend to the manner in which they have accumulated and serviced external debt?

In order to throw some light on this important topic, the analysis undertaken below attempts to identify and assess the patterns of external indebtedness of developing countries. The specific purposes of the paper is to identify the main differences in the determinants of external debt between mineral and non-mineral third world countries.

A deeper understanding of the motives for third world mineral country borrowing and international bank lending to the mineral countries should provide insights into the manner in which the current third world debt crisis has evolved, and an identification of those types of countries likely to encounter the most severe difficulties in servicing their external obligations.

## II. Methodology

The determinants of mineral economy indebtedness are exam-

ined through the development of a basic supply and demand model of international lending. The model developed here is a modified version of the one developed by Heller and Frenkel capable of determining the equilibrium level of debt. This equilibrium debt level is solved for by a reduced form equation. The major supply and demand elements of the model are isolated using ordinary least squares regression estimation on a cross section sample of countries.

It is important to note that the analysis below is concerned with the volume of external indebtedness rather than the price of the debt. Actual decisions of the volume of debt are usually based on an assessment of measurable indices such as country limits, micro economic factors and project profitability. On the other hand, price decisions are considered on the bases of a less quantifiable set of factors. These include: conditions in the international capital markets, prevailing premia, and the economic policies in effect in currency countries. These factors more often than not tend to dominate developments in local and regional financial markets.

### III. Patterns of Mineral/Non-Mineral Development

Data for the analysis below were taken largely from the World Bank, with the country sample consisting of 94 developing countries, 23 of which were mineral-oil exporters.<sup>1</sup>

External debt figures are from the World Bank (1984), and are defined as public external debt owed to non-residents and having a maturity over one year and payable in foreign currency.

An examination of the structural and performance differences between mineral and non-mineral developing countries (Table 1) provides a valuable frame of references for the analysis that follows. As might be expected mineral economies have:

1. a much more concentrated export structure;

<sup>1</sup> For the purposes of this study mineral-oil exporters were defined as any developing country where mineral and/or oil exports accounted for over forty percent of their merchandise exports, a figure originally proposed by Nankani. The countries classified as mineral/oil on this basis were: Nigeria, Indonesia, Bolivia, Togo, Tunisia, Morocco, Venezuela, Iran, Mexico, Chile, Angola, Zaire, Jamaica, Trinidad, Zambia, Peru, Papua-New Guinea, Saudi Arabia, Iraq, Kuwait, Syria, The UAE, and Egypt.

Table 1  
STRUCTURAL AND PERFORMANCE DIFFERENCES BETWEEN MINERAL-NON  
MINERAL AND OIL EXPORTING DEVELOPING COUNTRIES

Symbol	Variable	Total Sample	Mineral, Oil	Non Mineral	Mineral	Oil	Non- Mineral, Non-oil	(Means)
Export-External Variables								
CIX	Commodity Concentration Ratio	54.6	71.7	46.0	66.8	75.0	46.8	
EI	Export Instability, 1968-71	10.1	10.0	10.1	9.7	10.5	10.0	
ZGB	Growth in Imports, 1970-82	4.3	7.7	2.4	2.1	12.5	2.3	
EGB	Growth in Exports, 1970-82	1.3	1.0	8.1	0.2	-3.8	3.7	
EGA	Growth in Exports, 1960-70	8.5	9.4	8.0	8.3	13.1	7.3	
EB	Share in Exports GDP, 1982	27.3	32.2	24.9	30.7	35.4	24.9	
CAA	Current Account Balance, 1970	-131.6	103.7	-144.1	-29.2	-162.6	-147.0	
CAB	Current Account Balance, 1982	-452.1	1,073.0	-1,204.7	-854.5	3,496.9	-1,201.3	
OPCEB	Share of Other Primary Commodities in Exports, 1982	42.2	12.7	52.5	19.4	2.4	52.0	
IMPFb	Share of Local Imports in Merchandise Imports, 1982	14.5	17.2	13.2	21.1	14.2	17.6	
External Debt Variables								
PDA	Public External Debt, 1970	621.7	706.9	580.7	581.7	831.6	583.0	
PDB	Public External Debt, 1982	4,986.6	6,493.3	4,337.1	3,898.4	9,828.7	4,330.9	
PDPA	Public External Debt as % GDP, 1970	32.0	68.7	14.0	120.3	10.3	14.6	
PDPB	Public External Debt as % GDP, 1982	36.8	37.9	36.3	61.2	15.4	34.9	
DSEA	Public External Debt as % Exports, 1970	7.6	8.5	7.1	10.6	6.1	7.2	
DSEB	Public External Debt as % Exports, 1982	12.9	16.2	11.5	21.2	12.3	11.4	
ECIBE	Gross Inflow Public External Debt as % Exports, 1902	0.6	0.3	0.8	0.4	0.1	0.8	

Table 1 (continued)

Symbol	Variable	Total Sample	Mineral, Oil		Non Mineral	Mineral	Oil	Non- Mineral, Non-oil	
			Mineral,	Oil				Mineral,	Non-oil
<u>Fiscal-Savings Variables</u>									
AS	Average National Savings, 1970-81	16.9	25.2		12.9	14.3	35.9	13.1	
MS	Average Marginal National Savings, 1970-81	12.7	21.3		8.4	10.2	33.3	8.4	
RTOPYB	Government Revenues as % GDP, 1982	21.2	26.0		19.1	25.8	26.7	19.2	
GETYB	Government Expenditures as % GDP, 1982	26.3	29.9		24.9	32.6	26.6	15.1	
GDB	Government Deficit as % GDP, 1982	-4.8	-3.1		-5.5	-7.1	2.0	-5.6	
<u>Composition of GDP</u>									
AB	Share of Agriculture in GDP, 1982	24.4	14.4		22.9	18.1	9.4	29.6	
IB	Share of Industry in GDP, 1982	29.9	40.3		24.5	32.4	49.3	24.6	
MB	Share of Manufacturing in GDP, 1982	13.9	12.0		14.9	13.3	10.5	14.9	
SB	Share of Services in GDP, 1982	45.7	45.3		46.0	49.4	41.3	43.4	
<u>Performance Variables</u>									
GDICB	Growth in GDP, 1970-82	4.3	4.2		4.3	3.3	5.4	4.4	
INFB	Inflation, 1970-82	14.5	20.2		13.2	24.0	15.5	17.6	
GDIGB	Growth in Investment, 1970-82	6.3	7.4		5.8	3.1	12.9	5.8	
GDIB	Share of Investment = GDP, 1982	22.9	24.9		22.0	24.6	27.2	21.7	
ACOR	Incremental Capital - Output Ratio	4.0	4.0		3.9	5.1	2.9	3.9	
GIRA	Gross International Reserves, 1970	288.1	330.4		270.6	171.3	452.2	275.3	
GIRB	Gross International Reserves, 1982	2,389.7	3,835.8		1,776.9	728.2	7,213.8	1,774.6	
AGB	Growth in Agriculture, 1970-82	2.5	2.6		2.5	2.1	3.4	2.5	

Source: World Bank, 1983 and 1984.

2. a more rapid increase in exports over the 1960-1970 period, but slower during the 1970-1982 period;
3. stronger current account position;
4. a higher proportion of food in total merchandise imports;
5. higher levels of public external indebtedness, public external indebtedness as a percent of GDP, and external public debt service as a percent of exports;
6. higher average and marginal savings;
7. higher government revenues and expenditures as a percent of GDP;
8. lower government deficits as a percent of GDP;
9. a smaller percent of output devoted to agriculture, and services;
10. higher rates of inflation;
11. a higher proportion of GDP allocated for investment and a higher growth in investment; and
12. a higher level of international reserves.

On the surface, therefore, the mineral economies seem to have both relative strengths — higher savings and investment rates, together with a tendency to generate stronger current account positions. These advantages are, however, offset by the fact that they also possess a less diversified export sector, lower rates of export growth in recent years, higher rates of inflation, and lower productivity of investment.<sup>2</sup> In terms of external debt, the mineral economies have, by all standard indices, higher levels of outstanding external obligations and resulting servicing commitments. The relatively high ratios of debt service to export earnings or debt to gross domestic product contracted for by the mineral economies do not however imply that this group of countries will necessarily encounter severe debt servicing and or liquidity problems. Historically, countries with similar debt burdens have succeeded in not only avoiding default (or rescheduling), but also in pursuing a successful debt based development strategy (Abreu and Fritsh).

What the debt burden indicators do reveal, however, is that the countries with exportable commodities are inclined to believe that they can service relatively high levels of external debt, and

<sup>2</sup> Productivity is defined here simply as the growth in real GDP over the 1970-1982 period divided by the growth in capital formation over the same period.

that foreign lenders will be more than ready to grant them *ceteris paribus* relatively large amounts of external credits. Clearly, if the mineral-oil developing countries are experiencing relative difficulty in servicing these debts, it must stem not so much from their possession of minerals and oil *per se*, as from the fact that countries with exportable resources may be inclined to over-borrow and/or waste external resources (Schattner).

#### IV. Determinants of Total Debt

The model developed below analyzes the basic supply and demand of total public external indebtedness in the third world. As a first step in constructing the model, it is reasonable to assume that a country's economic size will have a direct relationship on its external indebtedness and the capacity to service that debt.

A large country in terms of GDP will have more financial and commercial interactions with the rest of the world economy, and therefore be more likely to accumulate a relatively larger volume of debt. At the same time, the debt servicing capacity of a large country is apt to be greater than that of a smaller nation, and consequently, a larger external debt can be accumulated at relatively lower risk. In general, therefore, the larger the developing economy as measured by GDP, the greater its demand for external indebtedness (Heller and Frenkel).

Second, it is obvious, and almost true by definition, that a country's external debt will be related to its current account balance. Clearly, current account deficits can not exist without external financing. Hence, *ceteris paribus*, a country's indebtedness will be higher as its current account deficits increase.

Third, international reserve holdings are another factor likely to influence the amount of external indebtedness. Here, however, the relationship is likely to be more complex and less straightforward than in the case of economic size and the current account balance. On the one hand, it is apparent that as a country's reserves increase, its ability to service a growing external debt will also increase. In a portfolio model both assets and liabilities will tend to increase simultaneously. On the other hand, *ceteris paribus*, one might expect a richer country to hold more international and have less need to incur external indebtedness. Clearly,

therefore, it is important to differentiate carefully between the simple relationship between reserves and debt and the more complex relationship between reserves and debt in a situation in which all other variables are controlled for.

Finally, the use of external debt will ultimately determine the debt servicing capacity of a country. Obviously, the availability of exportable resources alone does not determine a country's capacity for successfully pursuing a debt-incurring development strategy (Looney 1987b). International banks do not, after all, grant loans to enterprises merely because the company has developed a competitive product. Instead, the banks expect that the credits will be used for investments designed to enable the enterprise as a whole to earn additional revenues sufficient to ensure the servicing of the accrued debt. The investments of a national economy too must be efficient and yield an increase in output, some of which can be earmarked for debt servicing. Of course, it goes without saying that sufficient growth of domestic product can fail to materialize if foreign capital employed of profitable projects releases domestic capital for unproductive purposes (Schattner).

A second condition for a successful debt-incurring process is the transformation of foreign capital funds into productive investment and not consumption. Obviously, if foreign loans are consumed, either wholly or partially, then no yield, or only an insufficient one can be generated for meeting scheduled interest and principal commitments.

In an attempt to incorporate items reflective of allocations to unproductive (in terms of generating a high rate of return) activities into our model, public sector expenditures for military, education and health<sup>3</sup> were added to the model. Presumably expansion in expenditures in any or all of these areas in conjunction with expanded external indebtedness will, *ceteris paribus*, reduce the borrowing nation's overall debt servicing capacity. It should be noted, however, that the relationship between military expenditures and growth is not as straight forward as it might appear (Frederiksen and Looney; Ball).

<sup>3</sup> Military expenditure data are from 1981 and were taken from United States Arms Control and Disarmament Agency (1984); Government expenditures on education and health are for 1980 and are taken from Sevard (1983).



## V. Model Specification

The next step in our analysis is to isolate the main supply and demand influences on total mineral/non-mineral country indebtedness through the development of a reduced form equation capable of measuring the influence of all relevant independent variables simultaneously. Following Heller and Frenkel, GDP and the current account deficit are assumed to be the main demand variables, while the international reserve position of the country is the main factor affecting supply.

More precisely:

- (a) Total debt (PDB) supply =  $f_1$  (reserves(GIRB))
- (b) Total debt (PDB) demand =  $f_2$  (gross domestic product (GDPB), current account balance (CAB), military expenditures (ME), health expenditures (SH), and education expenditures (SE))

- (c) Total debt supply = total debt demand

Dividing equations (a) and (b) by the equilibrium level of total debt as specified in (c) we obtain:

- (d)  $x_1 (f_1/\text{Total debt}, f_2/\text{Total Debt}) = 0$   
 $x_2 (\text{Total Debt}, \text{GDPB}, \text{CAB}, \text{ME}, \text{SE}, \text{SH}, \text{GIRB}) = 0$

The implicit form of the reduced form equation being:

- (e) Total debt =  $f_3$  (GDPB, CAB, ME, SE, SH, GIRB).

## VI. Results

The results<sup>4</sup> for our total sample of countries (Table 2) indicate that over 67% of the fluctuation in third world debt can be explained by only two variables, gross domestic product (GDPB), and international reserves (GIRB). In terms of individual demand components, increased military expenditures were not associated

<sup>4</sup> The debt variable in the analysis is for the year 1982. This year was selected largely because it is the terminal year of a decade of rapidly increasing borrowing by third world countries. The debt crisis in the summer of 1982 brought on by the *de facto* Mexican default resulted in a marked change in the volume international borrowing thereafter. Since hardly any new debt has been created after, the results obtained below would most likely be similar to those found for the early 1980s. Several other years were also examined — 1979, 1980, and 1981. The results were essentially the same as those presented here for 1982.

**Table 2**  
**DETERMINANTS OF PUBLIC EXTERNAL DEBT (1982) TOTAL COUNTRY SAMPLE**  
**(MINERAL — NON MINERAL EXPORTING COUNTRIES)**  
 (Standardized Estimates)

	Independent Variables							Statistics			
	GDPB	GIRB	ME	CAB	PDA	CIX	SE	SH	r <sup>2</sup>	F	DF
External Public Debt =	0.73 (9.69)								0.540	93.90	81
	0.99 (12.39)	-0.44 (-5.54)							0.671	78.71	79
	1.00 (11.98)	-0.43 (-3.44)	-0.02 (-0.16)						0.679	50.26	74
	0.83 (6.39)	-0.36 (-2.65)	0.19 (1.05)	-0.25 (-1.56)					0.688	35.28	68
	0.77 (7.73)	-0.29 (-2.35)	-0.09 (-0.75)		0.30 (3.49)				0.728	44.82	71
	0.77 (7.49)	-0.30 (-2.32)	-0.08 (-0.69)			-0.03 (-0.43)			0.726	33.41	68
	0.28 (1.61)	-0.44 (-5.60)			0.26 (3.46)		0.57 (3.13)		0.756	55.91	76
	1.36 (15.12)	-0.44 (-6.70)						-0.50 (-6.13)	0.780	90.06	79
	1.18 (9.88)	-0.39 (-5.75)			0.17 (2.27)			-0.43 (-4.99)	0.794	69.59	76
	1.36 (15.12)	-0.44 (-6.70)						-0.50 (-6.13)	0.780	90.06	79
	1.18 (9.88)	-0.39 (-5.75)			0.17 (2.27)			-0.43 (-4.99)	0.794	69.59	76

Notes: Independent variables, GDPB, 1982 (millions of dollars); GIRB, 1982 (millions of dollars); ME, 1981 (millions of dollars); CAB, 1982, (millions of dollars); PDA, 1982 (millions of dollars); CIX, 1970-1980; SE, 1980 (millions of dollars); SH, 1980 (millions of dollars).  
 DF = degrees of freedom; F = F statistics; r<sup>2</sup> = correlation coefficient; ( ) = t statistic

with increases in external public debt, but increased educational expenditures were.

Health expenditures, however, had a negative sign, indicating perhaps that health is an area where public cutbacks occur during periods of austerity associated with high over all levels of public external indebtedness. Interestingly enough, third world countries as a whole do not appear to have a direct causal link between balance of payments deficits (CAB) and public external debt.

In addition to the variables specified in the model developed above, several additional independent variables were added to the regression equation — public external indebtedness (PDA) in 1970, and an export concentration index — CIX (World Bank 1983). The export concentration index was used to control for several of the major OPEC countries such as UAE, Saudi Arabia and Libya, all having extremely concentrated export earnings together with little or no external public debt. The results with these variables included indicate that:

1. Public external indebtedness (PDA) in 1970 appears to be a good predictor of external public debt in 1982.
2. Increasing the concentration of exports (CIX) does not, however, affect public external indebtedness in any statistical sense.

The results (Table 3) for the mineral-oil sub-group of countries indicate several interesting patterns:

1. The standardized coefficient for gross domestic product (GDPB) is consistently higher than that obtained for the total sample. Apparently, given a level of GDP, mineral countries are able to obtain a higher volume of external indebtedness than developing countries as a whole.
2. The coefficient for the international reserves term (GIRB) is nearly the same magnitude as that of the total sample.
3. For both mineral exporters and the total sample of countries, international reserves had a positive sign when regressed individually on external public debt. In both cases, if one corrects for the influence of gross domestic product, countries with high reserves tend to receive less external funds. This result supports that theory that a country in a relative comfortable financial position (as evidenced in high reserve holdings) is less likely to incur external indebtedness.
4. Military expenditures (ME) were statistically significant with a

**Table 3**  
**DETERMINANTS OF PUBLIC EXTERNAL DEBT (1982): IN MINERAL EXPORTING COUNTRIES**  
 (Standardized Estimates)

	Independent Variables							Statistics			
	GDPB	GIRB	ME	CAB	CIX	PDA	SE	SH	r <sup>2</sup>	F	DF
External Public Debt =	0.68 (4.63)								0.471	21.43	25
	-1.18 (11.24)	-0.80 (-7.51)							0.852	63.39	24
	1.24 (13.85)	-0.44 (-2.78)	-0.43 (-2.74)						0.910	64.12	22
	1.34 (12.64)	-0.55 (-3.25)	-0.74 (-2.93)	0.37 (1.51)					0.920	51.79	22
	1.22 (14.37)	-0.38 (-2.55)	-0.43 (-2.89)		-0.13 (-1.90)				0.925	55.68	22
	1.02 (7.13)	-0.30 (-1.95)	-0.38 (-2.89)		-0.10 (-1.52)	0.18 (1.64)			0.936	49.34	22
	1.04 (5.43)	-0.42 (-2.72)	-0.44 (-2.92)		-0.14 (-2.05)		0.72 (1.04)		0.929	44.98	22
	1.27 (10.78)	-0.29 (-1.39)	-0.51 (-2.61)		-0.14 (-1.94)			-0.08 (-0.63)	0.926	43.12	22
	1.00 (6.75)	-0.32 (-2.03)	-0.37 (-2.48)			0.23 (2.02)			0.926	56.94	22
	0.73 (2.99)	-0.35 (-2.24)	-0.37 (-2.50)				0.27 (1.31)		0.934	47.69	22

Notes: Independent variables, GDPB, 1982 (millions of dollars); GIRB, 1982 (millions of dollars); ME, 1981 (millions of dollars); CAB, 1982, (millions of dollars); PDA, 1982 (millions of dollars); CIX, 1970-1980; SE, 1980 (millions of dollars); SH, 1980 (millions of dollars).  
 DF = degrees of freedom, F = F statistics; r<sup>2</sup> = correlation coefficient; ( ) = t statistic

negative sign in all the regressions. On the other hand, health (SH) and educational expenditures (SE) did not prove to be statistically significant.

These results, together with the higher overall savings rates characterizing mineral economies, (Table 1) tend to refute the notion that mineral exporting countries as a group tend to incur increased external indebtedness to facilitate increased consumption. According to this argument (Schattner), periods of mineral and/or oil price increases are accompanied by an increased government revenues, much of which is used for expanded social programs and or military expenditures (Whynes, chapter 2).

Increased expenditures in these areas during periods of expanding revenues are assumed to create rising expectations, particularly among urban groups (Hirschman and Rotschild). During periods of declining government revenues, the authorities often attempt to stave off political and social unrest through maintaining these expenditures by running down reserves and/or stepped up levels of external borrowing (Looney 1987c). Iran in the mid 1970s was a classic example of this phenomena (Looney 1982).

At least in the areas of defense, education, and health, the results presented above tend to contradict this theory. Contrary to this notion, mineral producers apparently choose instead to reduce military expenditures during periods of austerity as a means of increasing external credit worthiness. The oil countries with a high degree of export concentration do not appear to affect the above conclusion significantly. The sign on the export concentration (CIX) term is not highly significant; nor does the introduction of this variable cause a marked change in the coefficients for gross domestic product (GDPB), reserves (GIRB), or military expenditures (ME).

In the case of the mineral economies public external debt (PDA) in 1970 appears to be a weaker predictor of public external debt in 1982 than the sample as a whole (both in terms of the size of its coefficient and degree of statistical significance). This result may, in part, reflect the reduction in public external debt of several of the major oil exporters during the 1970-1982 period. In sum, the introduction of the level of debt in 1970 in the regression equation does not significantly affect the overall coefficient of determination. Finally, the mineral exporting countries do not ex-

hibit a systematic relationship between their current account balances (CAB) and their levels of public external debt.

In market contrast to the mineral economies, the non-mineral economies (Table 4):

1. Tend to have lower external indebtedness for a given level of GDP (coefficient of 0.78 on GDPB versus 1.24 for the mineral exporting countries);
2. Tend to support a higher level of indebtedness for a given level of reserves;
3. Tend to be characterized by external indebtedness highly associated with military expenditures, and most importantly;
4. Are characterized by the fact that a large proportion of their external indebtedness has been used to finance current account deficits.

For non mineral economies, the current account deficit (CAB) in 1982 explains nearly 75% of the fluctuations in public external debt in 1982. The relationship between current account deficits and the public external indebtedness is so strong that gross domestic product is no longer statistically significant when left in the regression equation.

In summing up, it appears that the public external debt accrued by non mineral countries has been contracted for financing balance of payments deficits more than on the basis of over all country ability to service the debt (as proxied by the current account deficit).

The strong negative sign on health expenditures may indicate that these programs are major causalities during austerity programs designed to increase credit worthiness. The strong and consistent sign on military expenditures is hard to explain — other than the fact that many of these countries may rely fairly heavily on foreign military assistance programs, whereas many of the oil exporting countries do not qualify or opt to participate in these programs.

Finally, public external debt appears a bit more stable for the non-mineral economies than for their mineral counterparts in that for the former, public external debt in 1970 tends to be a strong predictor of 1982 levels of public external debt. This is not the case for mineral economies.

**Table 4**  
**DETERMINANTS OF PUBLIC EXTERNAL DEBT (1982): IN NON MINERAL EXPORTING COUNTRIES**  
 (Standardized Estimates)

	Independent Variables							Statistics			
	GDPB	GIRB	ME	CAB	CIX	PDA	SH	SE	r <sup>2</sup>	F	DF
External Public Debt =	0.77 (8.96)								0.598	80.37	55
		0.33 (2.66)	0.60 (5.47)	-0.86 (-11.78)					0.114	7.12	56
	0.78 (6.55)	-0.31 (-2.69)	0.27 (2.33)						0.743	138.98	49
	-0.21 (-1.68)	-0.31 (-4.66)	0.55 (7.32)	-0.97 (-9.81)					0.663	31.52	51
		-0.35 (-4.77)	0.46 (5.97)	-0.83 (-13.80)	-0.04 (-0.51)				0.897	89.71	45
		-0.32 (-4.87)	0.24 (2.68)	-0.77 (-14.14)	-0.08 (-1.15)	0.27 (3.68)			0.891	78.16	42
		-0.20 (-3.78)	0.42 (6.44)	-0.89 (-18.43)		0.14 (2.49)	-0.28 (-4.95)		0.921	84.44	41
		-0.29 (-4.84)	0.35 (3.72)	-0.84 (-8.91)		0.26 (3.68)		-0.11 (-0.88)	0.951	148.06	43
									0.921	88.83	43

Notes: Independent variables, GDPB, 1982 (millions of dollars); GIRB, 1982 (millions of dollars); ME, 1981 (millions of dollars); CAB, 1982, (millions of dollars); PDA, 1982 (millions of dollars); CIX, 1970-1980; SE, 1980 (millions of dollars); SH, 1980 (millions of dollars).  
 DF = degrees of freedom; F = F statistics; r<sup>2</sup> = correlation coefficient; ( ) = t statistic

## VII. Conclusions

The main purpose of this paper was to gain some understanding of the main determinants of third world mineral country's external indebtedness, with the hope at eventually gaining insights as to the relative ability of this important group to service their external debts. The mineral countries were shown to have a higher level of debt, a higher debt burden in terms of debt to GDP, and a higher servicing burden (as measured in terms of debt service to exports). The recent (1970-1982) export growth was considerably below that of the non-mineral economies. On the other hand, the mineral countries as a group had higher levels of savings and investment and better overall balance of payments position.

The regression results indicate that the possession of minerals — or oil increases the credit worthiness of this group of countries and that they tend to have lower levels of debt associated with their international reserves. In terms of the use of external debt, the mineral countries tended to avoid large allocations towards consumption and that external loans had not been incurred to increase unproductive military expenditures (as in the case of the non mineral countries).

Based on these considerations, one can conclude that the relatively high debt burden accrued by the mineral countries is not inherently the consequence of an inappropriate investment strategy, but perhaps more the result of simply having tangible assets upon which banks are willing to extend relatively high volumes of credits. In this sense, the relatively large number of defaults and/or reschedulings experienced by this group of countries appears to be as much the fault of the international financial community as of the countries themselves.



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