CAN WE LEARN SOMETHING FROM
THE DEBT-TO-EXPORT RATIO BEHAVIOR? **

1. Theoretical background

Concern over the unexpected changes of the country credit worthiness prompt to find more and more reliable indicators of the potential problems. Though the issues involved are clearly linked to macro economic relations a micro economic terminology was adopted to facilitate analysis of the problems considered. Hence it is accepted that the country can suffer from the temporary decrease of foreign exchange earnings causing acute liquidity problems but there is also a possibility that some other kind of difficulties take place. These problems being of more long-term nature are referred as solvency issues. In common banking practice as the best description of the situation in this area is the debt-to-export ratio.

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Such a ratio has to comply with the requirements being set for all external debt indicators. It must fulfill two functions: descriptive and predictive. The descriptive function makes sure that the ratio reflects in its area of relevance the evolution of the terms, structure and the scale of the past borrowing. Actually debt-to-export ratio has to deal mostly with the scale of the past borrowing. In a normal course of successful economic development one can expect that such a ratio will first increase, next stabilize and at the end decline. However the single stages of development may be excessively long and the detailed schedule can vary from country to country depending on underlying economic conditions.

In regard to predictive function which is of crucial importance for country risk analysis there is an ongoing discussion at what level are the value of this ratio, which one could read as a kind of long term warning signal. Often simple criteria or rules of thumb have been used in this regard. With application of modern statistical techniques it was sometimes possible to establish these level with a bigger degree of accuracy (R.Cline, 1984). However such models involved not only behaviour of one solvency but took into account other relations and indicators.

The ratio considered takes as its denominator the size of the export earnings. The reason is that the export earnings represent foreign exchange resources which can be utilized to service external debt obligations. This cannot be said about the alternative of scaling external debt by the size of GDP. Still the argument has not been settled finally because two countries with the same debt-to-export ratios but with the different import payments would have different external debt positions. The problem is that the nominator reflects the events from the past when the debt was accumulated and nobody can guarantee that the previous trend of debt and export development will continue.
There were the suggestions by (B. Nowzad & R.C. Williams, 1981) to scale the external debt to the size of the traded goods sector. However, in the longer run, even this sort of scaling factor may be inappropriate, since the foreign exchange constraint may also be lessened by the growth in the nontraded goods sector. An expansion in nontrade goods production would result in some of the increased supply of nontraded goods being used to satisfy a part of aggregate demand that would otherwise be directed toward the traded goods sector. The supply of exportable goods would rise, providing there is for them a demand abroad, and this would improve the balance of payments situation since also a demand for foreign goods can to some extent be satisfied by domestic production.

Several other ratios combine measures of flows whereas the debt-to-export ratio takes the stock position of the external debt and expresses it in the flow of current year export earnings. Such an indicator can be used as a display of foreign presence in the economy, because external debt represents past reliance on contractual foreign capital inflows. A high ratio indicates that a country has had high inflows in the past but it does not necessarily reflect a dependence on continuation of such inflows or potential servicing difficulties. Depending on the maturity and interest terms of borrowing a high external debt ratio may not imply a high debt service ratio.

As mentioned earlier the process of the external debt accumulation in general will in its initial stage lead to a rise of this ratio. This means that apart from the level of debt accumulation there is a need for close monitoring the annual changes of the ratio belong its nominal size. It should contribute to the acquiring a proper picture of the current situation and possible but no certain directions of its change.

The statistical studies conducted in the area of country risk analysis and the possibilities of constructing early
warning models find the debt-to-export ratio a significant independent variable, but as such were evaluated plenty of other variables too (H. Kharas, 1984). This together with the well known drawback of such models, which mostly suffer from the multicollinearity phenomenon, suggest a rather cautious treatment of its results.

One major statistical advantage of this ratio is an avoidance of all problems connected with converting GDP expressed in national currencies to their hard currency equivalent. There is always a fear of using either undervalued or overvalued exchange rate for this purpose. Besides of this the data necessary to compute this ratio can be easily found in the internationally acknowledged statistical periodicals issued by different organizations (IMF, World Bank, BIS, OECD) and there is no need to resort to the often not too reliable domestic sources.

2. Procedure description

From the theoretical point of view one can expect a casual relation between the behavior of the debt-to-export ratio related factors for the prospects of the given country in the field of the external indebtedness. In order to make a practical use of such a theory there is an immediate need for the reliable check of this postulate.

One possible approach, which was adopted in this analysis, is to follow the causalities between the occurrences of the debt service disruptions, such as interest and principal arrears or agreed reschedulings and performance of this ratio in the past. For the purpose of encompassing all possible channels of influence exerted by the phenomena included in this ratio the attention was focused on the following three areas:

a) nominal size of the debt-to-export ratio in a given year;
b) annual change of this ratio within one year;
c) average annual change of this ratio in last three years.

Three time-series specified in this way were taken for the sample of 35 countries faced by the debt problems and confronted with the record of these countries' repayments arrears and rescheduling within the decade of 1980's.

The debt-to-export ratio used as a basis for this analysis was the ratio used in summary sheets of the country reports prepared by The International Division of The Rabobank Economic Research Department. The ratio used in has as its numerator Gross External Debt i.e. it is not netted off by the size of the official gross external reserves (excluding gold) and gross external assets of commercial banks. They are all external liabilities of the country's institutions and individuals irrespective of whether they are owed to multinational organizations, bilateral agencies or pure commercial sources.

This is a rather cautious and conservative approach but preventing from drawing too optimistic conclusion in the current situation. Some authors however (P.Nagy, 1984; S.A.Heffernan, 1986) suggested the use of the Net External Debt but then arises the difficulty of the proper identification of all relevant foreign assets of a given country.

First reason for sticking to Gross External Debt is that foreign reserves and external assets may be not as liquid as one could wish once there is a need of making use of them (D.Duff & I.Peacock, 1977). Nevertheless this argument is more related to the short term liquidity analysis. A second reason is related to the way the denominator is constructed. It consists of the sum of both export of goods and invisible services. Such an approach enables the combination of the most widely understood country's external liabilities with all possible sources of foreign exchange inflows excluding resorting to the short and long term capital assistance.

The obvious drawback of this settlement is that since the ratio is very general because it deals with quite
substantial macro economic aggregates one should not expect
ey very specific and impressive results of using it, at least in
a short period of time.

As a basis for the calculation, the data concerning
debt-to-export ratio provided by the Washington based
Institute of International Finance (IIF), were used. Only in
few cases when either the country was not included in the IIF
database or there was a need to go back beyond 1978 database
of the Economist Intelligence Unit, the World Debt Tables
were used. The details concerning the rescheduling were taken
from the Survey of Debt Restructuring by official Creditors
and Commercial Banks issued by the IIF on 20th September

Data on the first occurrence of repayment arrears or
rescheduling agreements were included in the sample selected.
Also its reoccurrence is considered in a new case of
rescheduling, only if the time span between the previous one
and the last one was at least three years. Next, if there was
a sequence of the arrears without a rescheduling agreement in
force these years together with the value of the
debt-to-export ratio factors should be included in the final
sample.

The reasoning behind it is that rescheduling introduces
to the system some kind of the artificial solution and
distorts otherwise real proportions in which country
long-term servicing ability should be perceived. Just only
after a few years (three in the foregoing analysis), the
country should be able to absorb fully the consequences of
the rescheduling arrangements and proceed with further normal
development of its external financial relations.

There is also a suggestion that to some extent arrears
do not constitute such an outright worsening of debt country
international financial standing as debt rescheduling. Hence
the cases of the countries which did not reschedule but were
in constant arrears in regard of their international
obligations (for example Egypt) were still included in the final calculations.

In case of the arrears the value of the nominal size of the ratio, its annual growth and average annual growth over the last three years, calculated for the end of the given year, were taken. Then they were checked whether the size of the first was above 200 per cent, the annual growth rate was above 20 per cent and the same cutoff level was used for the average annual growth rate. In case of rescheduling taking place in December of the given year the values for the relevant factors for this year were reassessed. In any other case (different rescheduling timing) the values for the preceding year were taken.

The above specified cut off levels were adopted after checking with the relevant literature (J. Calverley, 1990) and it took into account suggestions of the analysts working at the department.

Beside this selection method, which enabled to select a group of 84 cases where some kind of the payment problems took place, the next step was an attempt to identify the cases where development of the debt-to-export ratio seemed to indicate that arrears were likely although still payments were in order. While maintaining all previously described criteria concerning the timing of such events 28 cases of nonrescheduling were identified. There was only one major difference in selection procedures between rescheduling and nonrescheduling cases.

The rescheduling selected were subdivided into eight separate nonoverlapping groups. These were:

a) arrears and rescheduling cases where all three factors were above critical level;

b) arrears and rescheduling cases where two factors: nominal size and annual growth were above critical level;

c) arrears and rescheduling cases where two factors: nominal size and average annual growth were above critical level;
d) arrears and rescheduling cases where two factors: annual growth and average annual growth were above critical level;
e) arrears and rescheduling cases where only one factor — nominal size was above critical level;
f) arrears and rescheduling cases where only one factor — annual growth was above critical level;
g) arrears and rescheduling cases where only one factor — average annual growth was above critical level;
h) arrears and rescheduling cases where none of the considered factors was above the critical level.

In case of nonreschedulings there was no attention paid to the events where only one of the factors was above the critical level. There had to be at least simultaneous occurrence of two factors in order to be included in the second group. Hence the number of different subgroups was decreased to four:

a) group of events where all three factors were above critical level;
b) group of events where two factors: nominal size and annual growth were above critical level;
c) group of events where two factors: nominal size and average growth were above critical level;
d) group of events where two factors: annual growth and average annual growth were above critical level.

For the sake of time and space in the further considerations a group of the former 84 cases should be referred as reschedulings, though they consist of both reschedulings and arrears, whereas group of the latter 28 cases should be named nonreschedulings.

After separating rescheduling and nonrescheduling cases divisions according to the country's membership in agreement with specifications set out in the World Debt Tables Edition 1990-91 were made. These are area criterion, income level criterion and combined income level cum debt burden criterion.
According to the area criterion in the sample picked it was possible to distinguish the following five regions:

a) Sub-Saharan Africa;
b) South-East Asia;
c) North Africa and the Middle East;
d) Eastern Europe;
e) Latin America.

With regard of the income level criterion the group was split into two blocks:

a) low-income countries.
b) middle-income countries.

In respect of the combined income level cum debt burden criterion there was a following division:

a) severely indebted low-income countries (SILIC's);
b) severely indebted middle-income countries (SIMIC's);
c) moderately indebted low-income countries (MILIC's);
d) moderately indebted middle-income countries (MIMIC's).

The detailed proportions of each of these subgroups in the nonrescheduling and rescheduling cases can be observed in the Table No.1 and Figures from No. 2A to No. 4D. Short description of each of these groups are given below together with the assistance of the attached Figures.

3. Results description according to a given criterion

3.1. Income Level Criterion

With the attention being given to Figures No. 2A-2C one can pick some contradictory points.

On the one hand looking at the lower part of Figure No.2A can bring a suspicion that since there is no one single case among nonrescheduling of lower income group associated with the occurrence of these factors being positive the countries considered are more vulnerable and are not able to endure the simultaneous coincidence of this factors. Such a
conclusion would even stay in agreement with a rule of thumb ways of reasoning and simplistic approach.

On the other hand after examining Figures No. 2B and 2C one sees that the lower income countries can accommodate much harder ways of the factors development than this is the case of the middle income countries. All three average values for nominal, annual and average factors are higher in case of the lower income countries.

There is a difficulty in proper interpretation of the graphs depicting factors distribution both in case of reschedulings and nonreschedulings. One can say that because of the bigger sample of reschedulings there is some trace of regularity with the declining density of the nominal size factor among the middle income countries. It starts at the top density of about 17.5 per cent at the range between 100 and 150 per cent and foes step by step down to the density of 2 per cent for the two ranges first between 550 and 800 and next between 700 and 750 per cent. At the same time, 60 per cent of the value for the same factor in case of lower income countries reschedulings is concentrated in the range between 300 and 350 per cent. This fact together with the observation made on base of the top part of Figure 2A, that there are some other factors not discussed here which cause problems for the middle income countries whereas for the lower income countries only relatively small fractions of the reschedulings cannot be connected with a behavior of the debt-to-export ratio, point into the direction of the bigger homogeneity label for the lower income countries in this regard.

3.2. Area Criterion

Since the country sample was not random the most significant conclusions in regard to the rescheduling cases can be drawn after having a closer look at what is depicted
in Figures No. 3A, 3B and 3C.

The most striking impression which we can get from an attempt to trace any regularities in the top part of Figure No. 3A is some kind of the gradual change in diversification of rescheduling causing factors. There is only a small difference between the composition of the rescheduling factors for the group of Latin America and Sub-Saharan countries. The former do not have among themselves cases where four of the combinations considered are positive:

a) group of events where nominal size and average annual growth were above critical level;
b) group of events where annual growth and average annual growth were above critical level;
c) group of events where only annual growth was above critical level;
d) group of events where only average annual growth was above critical level.

In the latter group only one combination is not present. The one missing is the case where both annual growth and average annual growth were above critical level. However it should be stressed that there is no such case in a group of reschedulings whereas there is about 29 per cent share of such a combination in a group of nonreschedulings.

Latin America and Sub-Saharan countries have got two things in common. They are the only groups with the presence of three factors being positive and even at the similar proportional level. They also represent the same share of the most dangerous cases when none of the factors is positive but still some kind of undesirable even is taking place. This should be assigned to the appearance of some kind of liquidity problems.

This combined together with what can be seen in the lower part of Figure No. 3A, which is strong presence of three factors being positive in case of nonreschedulings for both groups can lead to the conclusion that data on debt-to-export ratio behavior for these countries can be very misleading.
The possible similarities get distorted after having a look at Figures No.3B and 3C. Though the average values of the nominal size for the ratio are not very much different for both areas there is substantial difference in average size of annual and average annual growth rate in case of reschedulings, whereas both of them are at least twice higher in favor of Sub-Saharan countries. The possible explanation for this phenomenon is that the Sub-Saharan countries started to accumulate debt relatively late when the other countries were already more advanced in this field and for this reason they were still recording substantial changes in this area within the analyzed period of time.

Taking into account the size of the Sub-Saharan economies they gathered nonproportional big burden of foreign indebtedness.

It can be observed on the basis of the concentration of the nominal size of debt-to-export ratio within the range between 350 and 400 per cent for the rescheduling of this countries. This range is taking exactly 40 per cent of all cases, whereas in Latin American countries biggest share of above 25 per cent goes for the range of the nominal debt-to-export ratio between 200 and 250 per cent. The one of reasons is that the debt of Sub-Saharan area has been contracted in large part on the concessional soft terms which was thought should enable to bear the burden of it. This can further lead to the fact that the distributions of all factors in reschedulings of Latin American countries are better balanced since there was not such an extensive interference of nonmarket forces.

The same conclusion about the existence of nonmarket forces can be drawn in case of Eastern European countries where about 50 per cent of the reschedulings or arrears occurrences were not at all associated with any of the factors considered.
At last there should be some mentioning of the strange case of South-East Asia countries where all reschedulings considered happened together with the nominal size of the ratio being above 200 per cent. It could be assumed that these events should be linked with economic mismanagement or political turbulence.

3.3. Combined Income Level and Debt Burden Criterion

The most interesting conclusions can be drawn upon Figures 4A, 4B, 4C, 4D and they are going to be focus of the following considerations.

First, there is a confirmation of the thesis about the bigger relevance of the ratio behavior for the lower income, more indebted countries where the share of the absence of any factors combinations is the smallest. At the same time, they are characterized by the bigger proportion of the cases where the combination of three factors being positive had occurred. This can mean that both Severely Indebted Middle Income Countries and Severely Indebted Lower Income Countries are more exposed to any changes related with the debt-to-export ratio. A much higher share of the most common case which is the nominal size of the ratio being positive can be also treated as a some kind of a proof in this regard. That is enough to compare just only about 20 per cent of them being represented in reschedulings of Moderately Indebted Medium Income Countries with more than 50 per cent being present in case of reschedulings of severely Indebted Middle Income Countries and Severely Indebted Lower Income Countries. Again there is an encounter of homogeneity among Severely Indebted Lower Income Countries. Almost 60 per cent of the reschedulings among them is connected with the nominal size of the ratio being within the range from 300 to 350 per cent. If compared with the results for two other groups and after considering a lack of any other combination than nominal and annual factor being positive in nonreschedulings of SILIC
group one could be convinced that in the case of this group the behavior of the ratio considered has a lot of significance.

The final confirmation of the difference between the countries with lower and middle level of income is an almost 20 per cent presence of three factors being positive in case of nonrescheduling among MIMIC's and SIMIC's which can raise doubts about kind of links between the performance of these countries and the ratio behavior.

4. Final conclusions

Having examined the results of the analysis undertaken one can obtain at least some vague idea about the influence exerted by the debt-to-export ratio performance on the countries' service of their external debt.

Together with summary Figures No. 1A - 1C one should notice that there were more rescheduling than nonrescheduling cases possible to identify on the base of the procedure prescribed. It is a positive sign, which means that though some of the information carried by this ratio can be misleading it can contribute when it comes to predict defaults.

The best use of the debt-to-export ratio is obtained when the following points are taken into consideration:

a) the ratio is most suitable for an inquiry about the credit worthiness of lower income country, with very little diversified economy and already heavily dependent on the external financing of its affairs;

b) such country is rather not able to sustain the ratio taking into account the cutoff level discussed and is even more vulnerable to any rapid changes of it;

c) the more sophisticated and mature is the economy of the country considered the less likely is the impact of the debt-to-export ratio and this could be possible explanation why more than 20 per cent of nonreschedulings
are connected with occurrence of even 3 factors being positive at the same time;

d) from the study conducted can be said that although the average annual growth rate of the ratio is of the same importance it is overshadowed by the prevailing importance of two former factors:
- nominal size of the debt-to-export ratio in a given year;
- annual change of this ratio within one year.

A paradoxical message is being carried by average values of the factors investigated. One can expect that there is a difference in favor of average value of the nominal size of the ratio for the rescheduling cases but at the same time the average values of the annual growth and average annual growth rates are higher for the nonrescheduling cases. It can be further observed that there is a bigger volatility of the size of these two factors among rescheduling group. This can suggest that not only upward movements of the ratio are not having too much positive results but also excessive fluctuations of this ratio can be a partial explanation of the future problems.

The likely explanation of the relatively big share of nonreschedulings (20 per cent) in the total sample can be too low level of threshold values for the factors considered. It concerns mostly nominal size of the ratio.

The suggested way of using the results of analysis can be cross-checking of the country's ratio characteristics with the proper classification group. Enough attention should be paid to both area group and income level together with debt burden group classification.

Finally, it must be stressed that although there are some conclusions about collinearity of the debt-to-export behavior and occurrence of debt servicing problems the overall evaluation of the usefulness of this ratio cannot be very positive. The proof for this is an inability to present distributions of the factors considered among the
reschedulings and nonreschedulings along any groupings, let it be income level criterion, area criterion or debt burden together with income level criterion in a way making possible to trade significant regular differences between these distributions.

The fact that earlier statistical studies found the behavior of the debt-to-export ratio meaningful for the country risk assessment can be explained by the timing of these investigations. The latest of them had been made in the middle of the last decade and they had relied on data gathered both for the period before the debt crisis and period of its initial stages. That could lead to the bias because there was qualitative and quantitative change of the problems being faced and those analyses, had been referring mostly to the time of that change. The analysis done now has a better overview of the development in these area within the last decade and beside of these it encompasses more homogeneous period of the permanent debt crisis for majority of countries considered.

In my opinion there should be an introduction of the maturity problems into the nominator of this ratio. Simply there is not much use of connecting debt with longer maturity to the current year export. To avoid these hampering it would be helpful to separate the debt with shorter maturity periods and then by including it as a new ratio nominator confront the current foreign exchange earnings possibilities with the potential need for them. Another way to circumvent that problem is to replace the total of the current year export with the sum of foreign earnings for a few years. In both cases the nominal value of the ratio would for sure go down but hopefully its relevance to the everyday life of economy would be strengthened. However, such an approach gives a way to the more extensive use of the liquidity describing indicators. It means that the proper country risk analysis is not possible without including both short and long term points of view.
REFERENCES


Country Database of the Economist Intelligence Unit

Country Database of the Institute of International Finance

TABLE No.1 List of countries included in the sample selected for the purpose of testing the predictive power of the debt-to-export ratio.

FIGURE No.1
A Rescheduling and Nonrescheduling cases of the entire sample.
B Distributions and descriptive values of the debt-to-export ratio characteristics for all eighty four rescheduling cases.
C Distributions and descriptive values of the debt-to-export ratio characteristics for all twenty eight nonrescheduling cases.

FIGURE No.2
A Rescheduling and Nonrescheduling cases grouped according to countries income levels.
B Reschedulings of Low Income Countries.
C Reschedulings of Middle Income Countries.

FIGURE No.3
A Reschedulings and Nonreschedulings grouped according to the area criterion.
B Reschedulings of Latin American Countries.
C Reschedulings of African Subsaharian Countries.

FIGURE No.4
A Rescheduling and Nonrescheduling cases grouped according to income level cum debt burden criterion.
B Reschedulings of Moderately Indebted Middle Income Countries.
C Reschedulings of Severely Indebted Low Income Countries.
D Reschedulings of Severely Indebted Middle Income Countries.
**TABLE No. 1**

List of the countries included in the sample selected for the purpose of testing the predictive power of the debt-to-export ratio

<table>
<thead>
<tr>
<th>Country</th>
<th>Area</th>
<th>Income level</th>
<th>Income level &amp; debt burden</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cote d'Ivoire</td>
<td>Sub-Saharan Africa</td>
<td>middle</td>
<td>SIMIC</td>
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<tr>
<td>2. Senegal</td>
<td>Sub-Saharan Africa</td>
<td>middle</td>
<td>SIMIC</td>
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<tr>
<td>3. Cameroon</td>
<td>Sub-Saharan Africa</td>
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<td>4. Zimbabwe</td>
<td>Sub-Saharan Africa</td>
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<td>5. Gabon</td>
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<td>6. Ghana</td>
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<td>SILIC</td>
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</table>
FIGURE No 1A
84 Rescheduling Cases of the entire sample

- nom & avg positive 1%
- nom & ann positive 13%
- nominal is positive 44%
- 3 factors positive 9%
- none is positive 20%
- annual is positive 9%
- average is positive 3%

28 Nonrescheduling Cases of the entire sample

- nom & ann positive 36%
- 3 factors positive 21%
- nom & avg positive 14%
- ann & avg positive 29%
Descriptive values of the debt/exp ratio characteristics for all eighty four rescheduling cases:

<table>
<thead>
<tr>
<th></th>
<th>Nominal size (%)</th>
<th>Annual growth rate (%)</th>
<th>3-year annual average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average value</td>
<td>283.0</td>
<td>14.9%</td>
<td>9.4%</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>123.9</td>
<td>36.3%</td>
<td>13.9%</td>
</tr>
<tr>
<td>Maximal Value</td>
<td>716.5</td>
<td>180.2%</td>
<td>61.6%</td>
</tr>
<tr>
<td>Minimal Value</td>
<td>100.3</td>
<td>-40.2%</td>
<td>-18.2%</td>
</tr>
</tbody>
</table>
Descriptive values of the debt/exp ratio characteristics for all twenty eight nonrescheduling cases:

<table>
<thead>
<tr>
<th></th>
<th>Nominal size (%)</th>
<th>Annual growth rate (%)</th>
<th>3-year annual average (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average value</td>
<td>248.9</td>
<td>34.8</td>
<td>24.1</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>124.5</td>
<td>18.9</td>
<td>13.0</td>
</tr>
<tr>
<td>Maximal Value</td>
<td>712.9</td>
<td>84.3</td>
<td>55.3</td>
</tr>
<tr>
<td>Minimal Value</td>
<td>56.2</td>
<td>6.3</td>
<td>-0.4</td>
</tr>
</tbody>
</table>

Distribution of the nominal debt/exp ratio (%) among all nonreschedulings.

Distrib. of the annual growth rate of debt/exp ratio among all nonreschedulings.

Distrib. of the average annual growth rate of the debt/exp in all nonreschedulings.

3-year average annual growth of debt/exp.
FIGURE No 2A
Rescheduling & Arrears Cases

Nonrescheduling & Nonarrears Cases

INCOME LEVEL GROUP

middle income group low income group

middle income group low income group

INCOME LEVEL GROUP
FIGURE No 2B - Rescheduling of Low Income Countries

Descriptive values of the debt/exp ratio characteristics for twenty rescheduling cases of the low income countries:

<table>
<thead>
<tr>
<th></th>
<th>Nominal size (%)</th>
<th>Annual growth rate</th>
<th>3-year annual average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average value</td>
<td>311.1</td>
<td>23.6%</td>
<td>11.6%</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>106.1</td>
<td>52.2%</td>
<td>18.0%</td>
</tr>
<tr>
<td>Maximal Value</td>
<td>551.6</td>
<td>164.4%</td>
<td>61.6%</td>
</tr>
<tr>
<td>Minimal Value</td>
<td>108.3</td>
<td>-36.7%</td>
<td>-14.0%</td>
</tr>
</tbody>
</table>

Distribution of the nominal debt/exp (%)

Annual growth rate distribution of the debt/exp ratio

Average annual growth distribution of the debt/exp ratio

3-year average annual growth of debt/exp
FIGURE No 2C - Reschedulings of Middle Income Countries

Descriptive values of the debt/exp ratio characteristics for sixty four rescheduling cases of the middle income countries:

<table>
<thead>
<tr>
<th></th>
<th>Nominal size (%)</th>
<th>Annual growth rate</th>
<th>3-year annual average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average value</td>
<td>274,3</td>
<td>12,2%</td>
<td>8,7%</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>127,8</td>
<td>29,0%</td>
<td>12,4%</td>
</tr>
<tr>
<td>Maximal Value</td>
<td>716,5</td>
<td>180,2%</td>
<td>57,0%</td>
</tr>
<tr>
<td>Minimal Value</td>
<td>100,2</td>
<td>-40,2%</td>
<td>-18,2%</td>
</tr>
</tbody>
</table>
**FIGURE No 3B - Rechedulings of Latin America Countries**

Descriptive values of the debt/exp ratio characteristics for twenty seven rescheduling cases of Latin America countries:

<table>
<thead>
<tr>
<th>Nominal size (%)</th>
<th>Annual growth rate</th>
<th>3-year annual average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average value</td>
<td>272,8</td>
<td>10,2%</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>100,7</td>
<td>24,4%</td>
</tr>
<tr>
<td>Maximal Value</td>
<td>521,4</td>
<td>73,4%</td>
</tr>
<tr>
<td>Minimal Value</td>
<td>115,8</td>
<td>-40,2%</td>
</tr>
</tbody>
</table>

Distribution of the nominal debt/exp (%)

![Graph of nominal debt/exp ratio]

**Annual growth rate distribution of the debt/exp ratio**

![Graph of annual growth rate]

**Average annual growth distribution of the debt/exp ratio**

![Graph of average annual growth]

**3-year average annual growth of debt/exp**

![Bar chart of 3-year average annual growth]
FIGURE No 3C - Reschedulings of African Sub-Saharan Countries

Descriptive values of the debt/exp ratio characteristics for thirty rescheduling cases of African Sub-Saharan countries:

<table>
<thead>
<tr>
<th></th>
<th>Nominal size (%)</th>
<th>Annual growth rate</th>
<th>3-year annual average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average value</td>
<td>258.9</td>
<td>26.0%</td>
<td>12.6%</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>114.8</td>
<td>51.7%</td>
<td>17.6%</td>
</tr>
<tr>
<td>Maximal Value</td>
<td>551.4</td>
<td>180.2%</td>
<td>61.6%</td>
</tr>
<tr>
<td>Minimal Value</td>
<td>108.3</td>
<td>-36.7%</td>
<td>-14.0%</td>
</tr>
</tbody>
</table>

Annual growth rate distribution of the debt/exp ratio

Average annual growth distribution of the debt/exp ratio

Distribution of the nominal debt/exp (%)
FIGURE No 4A
Rescheduling & Arrears Cases

Nonrescheduling & Nonarrears Cases
Descriptive values of the debt/exp ratio characteristics for twenty one rescheduling cases of Moderately Indebted Middle Income Countries:

<table>
<thead>
<tr>
<th>Nominal size (%)</th>
<th>Annual growth rate (%)</th>
<th>3-year annual average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average value</td>
<td>175,6</td>
<td>16,3%</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>50,8</td>
<td>42,1%</td>
</tr>
<tr>
<td>Maximal Value</td>
<td>258,2</td>
<td>180,2%</td>
</tr>
<tr>
<td>Minimal Value</td>
<td>100,3</td>
<td>-24,0%</td>
</tr>
</tbody>
</table>

Annual growth rate distribution of the debt/exp ratio

Average annual growth distribution of the debt/exp ratio
Descriptive values of the debt/exp ratio
characteristics for nineteen rescheduling cases
of Severely Indebted Low Income Countries:

<table>
<thead>
<tr>
<th></th>
<th>Nominal size (%)</th>
<th>Annual growth rate (%)</th>
<th>3-year annual average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average value</td>
<td>309.9</td>
<td>25.9%</td>
<td>12.5%</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>108.7</td>
<td>52.6%</td>
<td>18.1%</td>
</tr>
<tr>
<td>Maximal Value</td>
<td>651.6</td>
<td>164.4%</td>
<td>61.6%</td>
</tr>
<tr>
<td>Minimal Value</td>
<td>108.3</td>
<td>-36.7%</td>
<td>-14.0%</td>
</tr>
</tbody>
</table>
FIGURE No 4D - Reschedulings of SIMIC's

Descriptive values of the debt/exp ratio characteristics for forty three rescheduling cases of Severely Indebted Middle Income Countries:

<table>
<thead>
<tr>
<th>Nominal size (%)</th>
<th>Annual growth rate (%)</th>
<th>3-year annual average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average value</td>
<td>322,9</td>
<td>10,2%</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>126,4</td>
<td>19,4%</td>
</tr>
<tr>
<td>Maximal Value</td>
<td>716,5</td>
<td>50,8%</td>
</tr>
<tr>
<td>Minimal Value</td>
<td>109,7</td>
<td>-40,2%</td>
</tr>
</tbody>
</table>

Distribution of the nominal debt/exp (%)

Annual growth rate distribution of the debt/exp ratio

Average annual growth distribution of the debt/exp ratio