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Arno Bäcker*

# A Politico-Economic View of the Debt-Servicing Capacity of Emerging Economies

*While there are a multitude of approaches to analysing a country's debt-servicing capacity, these display a number of weaknesses, notably as regards the integration of political and economic risk factors. This article presents a stylised politico-economic model that highlights a number of determinants which have so far been neglected in the literature.*

Unlike the debt crisis of the 80s, which erupted in Latin America, the 1997 crisis in Southeast Asia has been more a currency and bank crisis. However, the fact that it also had a severe impact on the debt-servicing capacity of different countries is reflected in the balance of payments statistics of the current IMF World Economic Outlook:[1] As a result of the crisis and the partially self-fulfilling expectations in the risk evaluation of international investors, substantial capital outflows and capital flight were triggered. These could not be completely covered by foreign exchange reserves nor by a reduction of high current account deficits.

Direct investments and other non-debt creating capital flows in Asia (excluding China and India) diminished relatively moderately from US$ 19.5 billion in 1996 to US$ 18.5 billion in 1997, and US$ 12.7 billion in 1998. As against that, the net external borrowing (net credit inflows) dried up completely in 1997, whereas it had amounted to about US$ 45 billion in 1995 and 1996. In 1998 net capital outflows (net credit repayments) of more than US$ 24 billion are expected. The reason for this is mainly a withdrawal of bank and private credits, which (according to IMF estimates) will both turn into net outflows of about US$ 23 billion, after record inflows of US$ 23 billion and US$ 15 billion, respectively, in 1996. Even the drastic contraction of the current account deficits which correspond with the dramatic currency devaluations (from about US$ 40 billion in the years 1995 and 1996) to less than US$ 28 billion in 1997 (estimates for 1998 indicate a deficit of only US$ 4.6 billion) cannot compensate for this exodus of capital. As a result, the payment arrears and debt reschedulings, which are reflected in the Exceptional Financing, of the South-East Asian countries (from under US$ 0.2 billion in each of the years between 1995-97) are estimated to rise to US$ 13.4 billion in 1998.

Public and private sectors are both hit by these payment problems. However, the public sector has a special role because of its debt volume and regulatory power. Indeed, the biggest part of the debt in developing countries consists of public or state guaranteed debt. Its share amounted to a ratio of between 62 and 67 per cent in the years 1980, 1996 and 1997; in 1990 it reached about 78 per cent (see Table 1). Moreover, the debt-servicing capability of a private debtor depends not only on his own economic situation, but also on the foreign reserves in the country and other factors beyond his control. In this respect, the international financing of private sector projects has to take into account the danger that payments cannot be transferred abroad because of the general economic situation of the country or government interventions (transfer risk in addition to the private credit risk). For the fundamental evaluation of a country and potential external economic crises its debt-servicing capacity comes into perspective (not only before, but also after a crisis when the question of reducing its debt to a sustainable level has to be addressed).[2]

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[1] International Monetary Fund: World Economic Outlook, May 1998, p. 196.

[2] See The World Bank: Global Development Finance 1998, Washington D.C. 1998, pp. 54-57.

### Methods of Analysing Debt-servicing Capacity

The roots of the academic literature on debt-servicing capacity lie in the growth and development theory which discusses poorer countries' development possibilities with foreign capital (growth cum debt). With the problem of debt sustainability the issue of country risk, too, is addressed. At the beginning, though, this was discussed only in the framework of simple growth models which are of only limited use for practical country risk evaluation.[3] On the basis of such models it can be shown that Emerging Economies can develop with appropriate foreign indebtedness, and that they can run through a debt cycle from net capital importers to net capital exporters. But debt-servicing problems inevitably arise if the growth rate of output on average does not exceed the real interest rate, or, if the roll-over financing of debt is interrupted because of a loss of trust in the international capital markets such that the debtor suddenly has to raise high real transfers for debt service.

How debt-service payments can be raised or become unsustainable under changing economic conditions like the terms of trade, trade perspectives, world interest rates, etc. is the topic of transfer theoretic approaches. From this perspective, a country's debt-servicing capacity can be described as a function of its expected maximum primary current account balances. The behaviour of international creditors depends in this framework especially on the risk-free world interest rate, on a risk premium as well as on the expected volatility of the debt-servicing capacity, and the expected sunk costs of a payment interruption.[4] In particular, expectations about the behaviour of other creditors and investors can render the capital supply unstable very quickly (herd behaviour), as shown in past crises.

**Table 1**
**External Debt of the Developing Countries**
**(billion US$)**

| | 1970 | 1980 | 1990 | 1996 | 1997 |
|---|---|---|---|---|---|
| total | .. | 603.3 | 1443.9 | 2095.4 | 2171.4 |
| long term | 59.2 | 445.3 | 1167.9 | 1650.1 | 1728.5 |
| public or state guranteed | 44.0 | 377.0 | 1107.8 | 1397.1 | 1428.8 |
| **per cent** | | | | | |
| total | .. | 100.0 | 100.0 | 100.0 | 100.0 |
| long term | .. | 73.8 | 80.9 | 78.7 | 79.6 |
| public or state guranteed | .. | 62.5 | 76.7 | 66.7 | 65.8 |
| **growth rates against previous period** | | | | | |
| total | .. | .. | 293.3% | 145.1% | 103.6% |
| long term | .. | 752.2% | 262.3% | 141.3% | 104.8% |
| public or state guranteed | .. | 856.8% | 293.8% | 126.1% | 102.3% |

Data source: The World Bank: Global Development Finance 1998, p. 160. (Data for 1997 preliminary).

The experience with the threatening of and deliberate debt-service interruptions during the debt crisis in the 80s made the literature focus on the debtors' willingness to honour their debt-service obligations (political risk).[5] Most approaches in that strand of the literature take as their starting point a "social planner" not specified in detail, who maximises his country's expected utility by deciding for or against honouring its debt contracts (default vs. non default) as a benevolent dictator.

In the empirical country-risk literature, payment interruptions are explained with multivariate risk indicators.[6] Choosing them does not, in general, reflect a theoretically sound explanation model, but rather plausibility considerations. Among the econometrical tools applied, e.g. cluster analysis and discriminant analysis, in particular qualitative regressions on the basis of logit or probit models have shown to be useful.[7] They permit us, inter alia, to estimate the probability of a particular event like rescheduling, etc.

The debt crisis of the 80s and the bigger political risk involved made credit institutions, insurance companies, regulatory authorities, and rating agencies think more seriously about country risk and its quantification. The spectrum of methods they use includes plain description as well as econometrical forecasts. The need for practitioners to make country risk analysis transparent and easily understandable has supported the widespread use of scoring models. These are evaluation models, in which the numerical realisations of different risk indicators are aggregated under a specific weighting scheme into a general risk score.

[3] Donogh C. McDonald: Debt Capacity and Developing Country Borrowing: A Survey of the Literature, IMF Staff Papers 29, 1982, pp. 603-646.

[4] M. Klein: Die Bewertung von Länderrisiken – Ein makroökonomischer Ansatz, Universität Bonn, Habil. 1992, ch. 6.3.

[5] Anthony Saunders: The Determinants of Country Risk – A Selective Survey of the Literature, Studies in Banking and Finance, 3, 1986, pp. 1-38.

[6] See A. Bäcker: Politische und ökonomische Länderrisiken – eine theoretische und empirische Analyse, Overseas Publishers, Berlin 1998, ch. 4 and 5.

[7] Reinhart Schmidt: Early Warning of Debt Rescheduling, in: Journal of Banking and Finance, No. 8, 1984, pp. 357-370.

Socio-political elements play a bigger role in practitioner models than in the academic literature. But in general, standardised economic data (e.g. from the national accounts or the balance of payments) can be made available in more detail, in a more timely manner and at a lower cost than demographic, social and political data. In principle, the following practical approaches to risk evaluation can be distinguished: those which map the political risk by subjective evaluation into one or a few indicators (e.g. implicitly in the Institutional Investor, explicitly in Euromoney); verbal risk analyses (e.g. by the Frankfurter Allgemeine Zeitung INFORMATIONSDIENSTE GmbH and The Economist Intelligence Unit (EIU)) as well as standardised evaluations in scoring models (EIU and Business Environment Risk Information Institute: BERI-Index, FORELEND-Index; International Reports Group: International Country Risk Guide; Schweizerischer Bankverein, NordLB).[8] Here some examples:

Whereas the Institutional Investor publishes only a global country risk index (i.e. the credit rating $\in$ [0, 100]; 100 means no risk), the ratings of Euromoney include both the general indicator and the subindicators like the political risk indicator, whose weight in the general index amounts to 15 per cent. It depends on opinion polls among risk analysts, risk insurers, and credit experts at banks, who can allocate a subjective risk evaluation $\in$ [0, 10] (0 and 10 signify no chance or no risk, respectively, for repayments). The Economist Intelligence Unit's Country Risk Service is supposed to depict political and policy risks involved, in addition to the general economic risk determinants which influence a government's ability to decide on the necessary measures for debt-servicing and to guarantee the necessary political stability. Moreover, it comprises a scoring model which includes a subjectively evaluated factor "politics" which is weighted 40 per cent in the general index.

The Norddeutsche Landesbank (NordLB) uses a scoring model which has hardly been modified since 1980.[9] It consists of eight political and fourteen economic indicators. The economic indicators are means to measure internal and external economic power as well as the foreign exchange reserves of a country; the political indicators measure the general system of values, politics and social structure. Special emphasis is placed on internal and external political tensions which could undermine the willingness to repay debts. Subjective assessments and mathematical relations, respectively, map the different criteria on certain scales and then into indicators for the political and economic risk. Political and social indicators are: the social climate, power of the political opposition, foreign policy relations, flexibility of economic policy, administrative efficiency; urbanity, human capital (people in higher education), unemployment.

The different explanation approaches and risk indicators in the literature and among the practitioners certainly provide us with useful tools. But there is a weakness with regard to the integration of political and economic risk models. Moreover, models in the literature are generally too abstract, whereas practitioner models are usually not based on a sound theoretical model, but on a multitude of indicators, which are only loosely connected and which cannot describe the process of a country's sliding into debt-servicing problems as a whole. Finally, the results of scoring models in particular are heavily influenced by subjective evaluations such that even risk indications of standard models can deviate substantially from each other.[10]

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[8] A. Bäcker, op. cit., ch. 2.

[9] Sabine Johannsen, Hans-Hermann Steinbeck: Länderrisikobeurteilung in der NordLB, in: Sparkasse, 112, 10, 1995, pp. 482-486.

[10] Nadeem Ul Haque, Donald Mathieson, Nelson Park: Die Beurteilung der Kreditwürdigkeit von Staaten auf dem Prüfstand, in: Finanzierung und Entwicklung, March 1997.

Christian Dräger/Petra Pissulla (eds.)

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### Correspondence with the Politico-economic Theory

The academic country-risk literature has so far hardly been affected by results of the political or new political economics. This kind of literature throws the assumption of a benevolent dictator overboard and investigates the question as to how a government's dependency on the electorate or lobby groups influences economic and financial policies.[11] Basically, there are two strands: one assumes that the government behaves opportunistically in order to stay in office as long as possible, the other that government follows a partisan goal to support a special clientele. It can be shown that these conditions imply a political business cycle. Considering this background, it seems plausible to analyse the impact that political processes and institutions have on the stabilisation and adjustment measures of Emerging Economies with external imbalances. The fact that almost every policy measure has certain distributional consequences should be taken into account. Adjustment measures can therefore affect different population groups differently:

"... interest-based explanations assume that policies are the result of exchanges between politicians and their constituents. Politicians respond to constituent demands in order to advance their personal, electoral, and ideological goals. Interest groups deploy resources in order to gain particularistic benefits, whether through lobbying, threats, the donation of funds, or the promise of votes... Studies of economic policies generally define the range of relevant interests in terms of factor of production (labor vs. capital) or by sector (urban vs. rural, export-oriented vs. domestic, etc.), and deduce actor preferences from the income and distributional consequences of different policy outcomes ... Policy choice is then explained by reference to the balance of power among competing groups or by reference to the composition of support base of the ruling coalition or party in power."[12]

Looking at the debt-servicing capacity, situations can arise in which certain interest groups (e.g. employers, employees, urban population) oppose necessary adjustment measures. The following additional aspects must also be taken into account: lobby interests can change over time, economic agents are not fully informed about the consequences of certain policy measures, they can also be myopic even with regard to their own long-term interests, and the consequences of policy measures like taxation, exchange-rate policy or trade policy are not assessed in the same way by different groups of the population.[13] Therefore, the question arises as to how internal political pressure of lobby or interest groups can lead to debt-service problems (e.g. opposition of influential parts of the population to adjustment measures recommended by the IMF, public protest against foreign banks).[14]

### A Politico-economic Approach

Both the (new) political economics literature and the country-risk literature point to modelling government as the competent decision-making unit when analysing debt-servicing capacity.

Moreover, the facts suggest that it is important to interpret the debt-servicing capacity as a result of a politico-economic maximisation approach against the background of the general economic and social situation. However, existing considerations on the concrete structure of a government's decision-making process are hardly complete and satisfying. A major caveat consists of the lack of a model that incorporates how the government of a highly endebted country is influenced in that respect by the electorate or an alternative power base. That is why existing academic models are unable to explain how patriotism, prestige feelings, etc. can hamper debt-service payments, even though factors such as these can be of major importance for political risk.

Government, independent of the political regime, cannot exist without a power base, and, as experience shows, cannot permanently act against the wishes of the majority of the electorate. Starting from this hypothesis, a politico-economic maximisation approach can be derived which explains the macroeconomic aggregate debt-servicing capacity in the final analysis as a function of evaluations and a cost benefit analysis in the population.[15] The underlying idea is that a country's maximum debt

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[11] W. Nordhaus: The political business cycle, in: Review of Economic Studies, Vol. 42, 1975, pp. 169-190; Inge Stalder: Staatsverschuldung aus Sicht der Neuen Politischen Ökonomie, in: K.-D. Grüske (ed.): Forum Finanzwissenschaft, Vol.. 2, Munich 1992.

[12] Stephan Haggard, Robert Kaufmann: The Politics of Stabilization and Adjustment, in: J. D. Sachs (ed.): Developing Country Debt and Economic Performance, Vol. 1: The International Financial System, Chicago and London 1989, p. 221.

[13] S. Haggard, R. Kaufmann, op. cit., p. 248.

[14] Peter Nunnenkamp, Hartmut Picht: Wilful Default by Developing Countries in the 1980s: A Cross-Country Analysis of Major Determinants, in: Weltwirtschaftliches Archiv, 1989, pp. 696-697.

[15] A. Bäcker, op. cit., ch. 6.

service is reached, when the marginal political cost of a further increase of payments exceeds the marginal political benefit.

Citizens are affected in many ways by their government's external obligations and the adjustment measures they imply. In the framework of the balance of payments and excluding asset transactions, the external debt service has in the end to be raised by primary current account surpluses. That implies a corresponding reduction of internal absorption. From an alternative point of view, current account surpluses of an open economy entail a surplus of savings over investment (private savings and/or a public budget surplus). This means that, other things being equal, higher external debt-service payments lead to heavier burdens through taxation, reductions of public investment, social expenses and public services. Additionally, from the perspective of a private citizen it is not just material burdens which count. General political and psychological factors (status thinking etc.) also play a role: "Perhaps almost as painful as the economic deprivation that befalls a nation that has gone too deeply into debt to foreigners is the loss of autonomy that is sometimes brought home in small but humiliating ways."[16]

On an individual's cost side, it is mainly the necessary real resource transfers for debt-service (e.g. higher taxes) or indirect costs because of economic adjustment measures (e.g. income or utility losses) that count. From a contract theoretical view, among the benefits of a punctual fulfilment of debt contracts the unhampered participation in world trade and saved sanction costs, which otherwise must be paid to creditors, have to be mentioned. That such benefits are actually appreciated by the population can be deduced, inter alia, from reports on the debt crisis in Latin America.[17] There, foreign trade partners reacted to debt-service problems with limitations on export credits and general trade which also hit private normal day-to-day consumption. Moreover, there are always population groups which depend especially on foreign trade and which feel trade disruptions immediately (e.g. employees in the tradable-goods sector). Comparing costs and benefits, most benefits accrue more in the medium and long term (growth advantages because of unrestricted trade, etc.).

The novel approach in this paper is the introduction of a stylised politico-economic model which takes all of these observations into account.[18] As a rough basis for the individual evaluation of the debt service, the debt service per capita can be used. The population is divided into distinct groups which assess the advantages and disadvantages stemming from debt service differently. Their subjective reactions determine the individual support or opposition of the group members for or against the government's (debt service) policy. This results in an individual net support, which can be translated into the probability of an individual's voting for the government's policy. The government, therefore, chooses a debt-service level such that the total support of its policy by the population (measured as a weighted sum of support probabilities) reaches a maximum.

Debt-servicing capacity can consequently be interpreted as the result of a politico-economic evaluation process, which integrates the general economic and socio-political situation, the individual preferences of each citizen as well as the political optimisation calculus of the government. The stylised model still contains many degrees of freedom due to its abstract character so that ad-hoc assumptions are necessary to get concrete results. However, its advantages lie, inter alia, in its ability to allow for an analysis of internal policy conflicts. Moreover, the model is flexible enough to be applied to different political regimes (democracy, oligarchy, etc.).

In the politico-economic model, determinants which have so far been rather neglected in the literature are highlighted: the subjectively perceived costs and benefits of contractual debt obligations by different population groups, their individual information and time preference; their evaluation, depending on the opportunity costs of the debt service, which translates the perceived costs and benefits into a measure of government policy support, features which transform the resulting net support into a likelihood of voting for the government's current (debt service) policy as well as the different group sizes or the political influence of population groups with diverging opinions on foreign debt service. Comparing that with the existing literature, an expandable basis is given which integrates political and economic determinants of debt-servicing capacity relatively realistically. It can be used to incorporate existing approaches and indicators in a meaningful way. By

[16] Karin Lissakers: Banks, Borrowers and the Establishment, A Revisionist Account of the International Debt Crisis, New York 1991, pp. 199-200.

[17] Ibid.

[18] For a more explicit model see A. Bäcker, op. cit, ch. 6, and for the modelling technique Robert K. von Weizsäcker: Bevölkerungsentwicklung, soziale Sicherung und Staatsfinanzen: Politökonomische Aspekte der Rentenfinanzierung, Diskussionspapier Nr. A-226, Universität Bonn, Institut für Wirtschaftswissenschaften, Finanzwissenschaftliche Abteilung, April 1989.

application of appropriate multivariate statistical methods, the different influences on debt service can be estimated objectively and in an integrated way, thereby reflecting the structure in the data optimally instead of artificially separating political and economic determinants as in scoring models. This also opens the way to a wide range of generally recognised statistical tests.

In relation to the diagnosis of country insolvencies the following conclusions can be drawn: An insolvency cannot arise solely because of adverse economic incentives. Negative politico-economic influences must also be involved. In an extreme case, the politico-psychological state of a society could be so strained that a debt reduction could make an increase in net debt service possible by dampening the opposition. This result implies the existence of a politico-economic debt-service Laffer curve, analogous to the original debt relief Laffer curve which was founded on purely economic terms.

### Empirical Evidence

Unlike the standard macroeconomic variables like debt ratios and balance of payments indicators, it is relatively difficult to measure the relevant factors or to get hold of the data on a timely basis. That is why they shall be roughly proxied here by demographic data, in particular indicators which allow for an approximation of the relative power of the different population groups. (In a further step, more powerful data, e.g. from practitioner models, could be used.) This allows the long-term relationship between the number of debt-service problems on one side, and two debt indicators and six demographic proxy variables on the other side to be investigated in a stylised way.[19] Because of the good data quality, the sample comprises 19 Latin American countries and time series from 1976-91 (annual data).[20] Each box in Figure 1 depicts 19 country points which represent for each country the combination of the number of debt-service problems and the realisation of a certain indicator (arithmetical mean over the period from 1976 to 1991). Moreover, a straight line shows a linear trend between the respective variables in every box. (Outlier cases have not been investigated, for this is only a first stylised fact approach.)

As expected, there is a positive relationship between the number of problem cases and foreign debt, measured by the debt ratio to GNP (DGNP) or exports (DXGS). In addition, it seems in the context of the politico-economic model that the demographic indicators could very well reflect group interests, and that these have an impact on the political decision-making process. Looking at the long-term benefits of a punctual fulfilment of debt contracts (comparing them with the short-term costs of an interruption), a longer average life expectancy (LEB) increases the personal utility of an orderly debt service, and a smaller illiteracy ratio (ANA) contributes to the understanding of these matters. Therefore, the number of debt-service problems should correlate negatively with LEB and positively with ANA. The long-term trends shown in Figure 1 comply with these hypotheses. The personal costs of debt service will probably increase with the population's general (tax) burden. The Age-Dependency-Ratio (AGE) and the income share of the lower 40 per cent Quantile (L4) are used to capture such general burdens.[21] Here, too, the long-term trends in Figure 1 are in line with the hypotheses. AGE increases the risk, whereas a higher income share diminishes it. Correlations clearly exist between the urban-population ratio (URB) and the size of the agricultural-sector (AGRI). A hypothesis sometimes expressed assumes a higher protest potential in the cities, and therefore greater political pressure on government, but it cannot be confirmed directly with the URB-data. Possibly, the URB-data (through their correlation with AGRI) rather reflect a risk increasing influence of factors related to AGRI like supply shocks and export price fluctuations.

The stylised univariate analysis can, of course, give only a first insight because of its obvious limitations. However, it seems to make further investigations into the impact of politico-economic variables attractive enough. Therefore, a qualitative regression will be applied, using a logit model; this is a method well known in the literature:[22]

$$P\{Y_i^t = 1\} = P\{u_i^t > -X_i^t \beta\} = 1 - F(-X_i^t \beta) = F(X_i^t \beta).$$

Y is a binary indicator variable for debt-service problems, which will be defined in more detail later, $P\{Y = 1\}$ is the probability of a debt-service problem, F(.) the logistic distribution function, $X = (1, x_2, \ldots, x_m)$ a vector of exogenous country risk determinants, and $\beta = (\beta_1, \ldots, \beta_m)^T$ a respective parameter vector. The para-

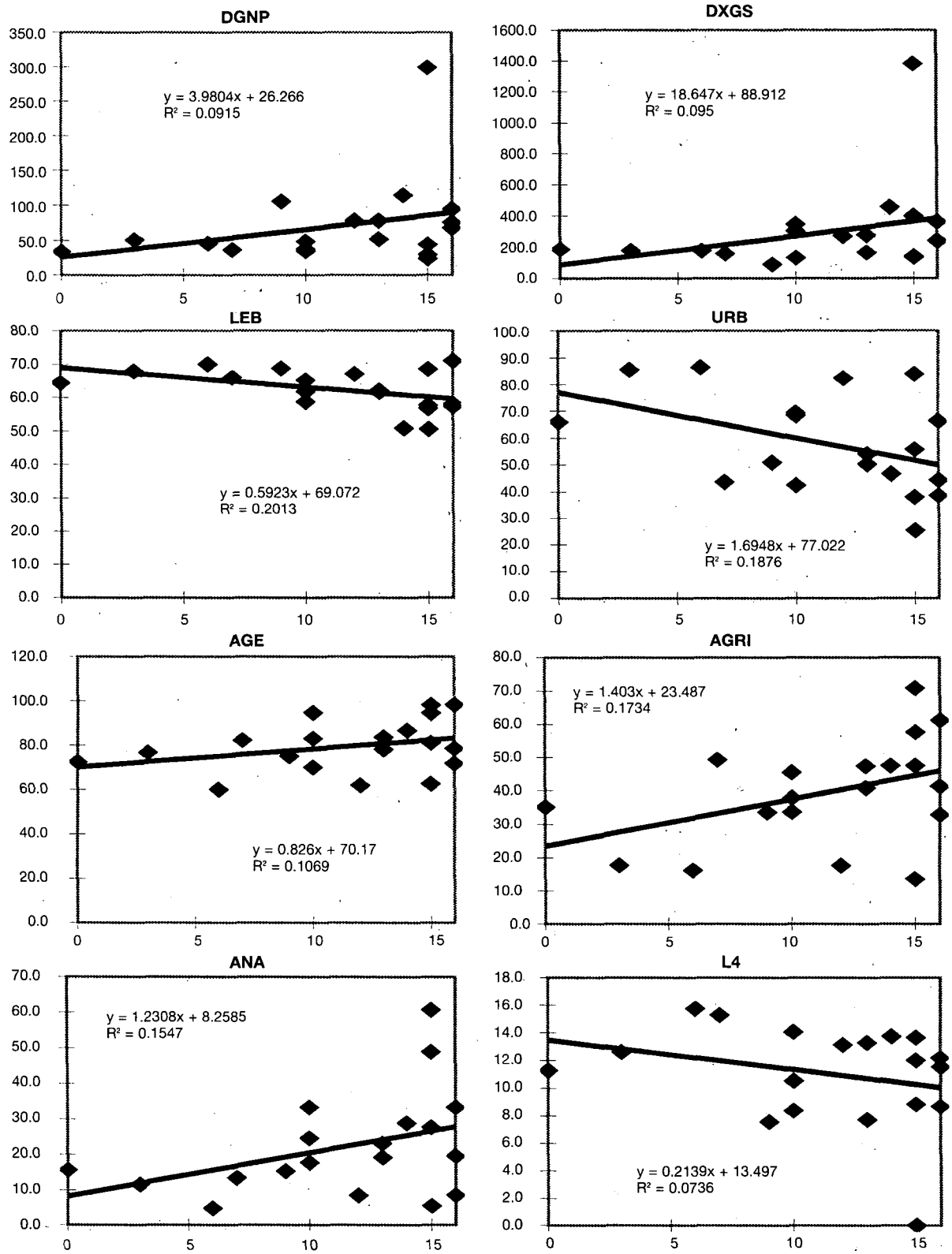
[19] A. Bäcker, op. cit., ch. 7.

[20] Countries: Argentina, Bolivia, Brazil, Chile, Costa Rica, Dominican. Republic, El Salvador, Ecuador, Guatemala, Haiti, Honduras, Columbia, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, Venezuela.

[21] AGE is the ratio of the population under 15 and over 64 in relation to the workforce.

[22] Donogh C. McDonald, op. cit. and Reinhart Schmidt, op. cit.

**Figure 1**
**The Number of Debt-service Problems in Comparison with Key Indikators for 19 Latin American Countries over the Period 1976-1991**



meters are estimated using the Maximum-Likelihood method. The estimations are based on a cross-time cross-section analysis in order to get a sufficient sample size.[23] The indicator Y is equal to 1, if a country does not manage to cope without Exceptional Financing, and 0 otherwise.[24] By using these balance of payments data, the dependent variable maps payment problems directly as they occur. In contrast, the literature has largely worked with rescheduling data whose relationship to debt-service problems is a priori unclear and must be explored with much effort.

Table 2 shows the results of an estimation for Latin American countries over the period from 1976-91 (annual data) applying different risk indicators.[25] The hypothesis $H_0$: $\beta_1=...=\beta_n=0$ can be rejected with an error probability $\alpha$ of only 0.0001. With the exception of one case all variables are significant on the 5 per cent level. The ratio of observation pairs where the observation with a higher default probability matches an actual problem case (REPA) reaches 95.1 per cent. Applying a cut-off rate of 0.5, 11.3 per cent of the cases are erroneously classified as non-problem cases, and 7.9 per cent as problem cases (Type I error/Type II error). The stability of the variables and of their sign are, in principle, confirmed by geographical (hold-out method) and time-period variations of the sample.

The debt ratio (DGNP) and the foreign reserves-to-import ratio (RESMGS) are related positively and negatively, respectively, with debt-service problems as the theory suggests. The positive sign of the number of payment problems in the current period (ZEF) suggests a certain herd behaviour of debtors (and/or creditors). Better conditions of new loans are incentives for reschedulings. This is reflected by the positive signs of the average number of grace periods and (with a lag of 1 period) the average maturity of new loans (GRAC and LMAT, respectively). The volatility of GNP over 4 years (VGDP4) increases debt-service risks as one should expect. Whereas the investments in the previous period (LGDIPCDK) diminish the risk, it is increased by the consumption in the previous period (LCPRPCDK) and related consumption ratchet effects. Especially interesting now are the signs of the proxy variables which stand for the different population groups and their attitudes to debt service: The general (tax) burden of the population is represented by the Age Dependency Ratio (AGE) and the income share of the lower 40 per cent and 20 per cent Quantile (L4, L2) as well as the volatility of L2 (L2V). Apart from the positive sign of L4, the hypothesis of higher risks through a higher general burden is confirmed by the estimation results. The average life expectancy (LEB), that is the wider individual expectation horizon, diminishes the risk. This means that exogenous incentives for debt-service interruptions and proxy variables for the individual expectation building and the government's political evaluation, respectively, influence the debt-servicing capacity together with the general burden and risk factors related to foreign debt.

**Table 2**
**Estimation of the Likelihood of Debt-service Difficulties**

| Variable | Parameter | Wald-Chi² | α |
|---|---|---|---|
| C | -18.2299 | 9.9071 | 0.0016 |
| DGNP | 0.0226 | 4.1625 | 0.0413 |
| RESMGS | -0.5091 | 19.6440 | 0.0001 |
| GRAC | 0.4438 | 5.9908 | 0.0144 |
| LMAT | 0.1675 | 10.7163 | 0.0011 |
| VGDP4 | 29.2984 | 5.9647 | 0.0146 |
| LGDIPCDK | -0.00448 | 3.3481 | 0.0673 |
| LCPRPCDK | 0.00395 | 16.0942 | 0.0001 |
| ZEF | 0.4436 | 24.3834 | 0.0001 |
| AGE | 9.6909 | 13.9926 | 0.0002 |
| LEB | -0.1771 | 7.8981 | 0.0049 |
| L4 | 2.1899 | 18.5913 | 0.0001 |
| L2 | -4.3772 | 14.5157 | 0.0001 |
| L2V | 3.2290 | 19.6150 | 0.0001 |

REPA: 95.1 per cent, Type I error/Type II error: 11.3 per cent/7.9 per cent, -2 Log likelihood for the parameter vector: 213.636 at DGF ($\alpha$ = 0.0001).

Source: Arno Bäcker: Politische und ökonomische Länderrisiken – eine theoretische und empirische Analyse, Overseas Publishers, Berlin 1998, ch. 7.

In conclusion, the hypothesis that politico-economic factors such as demographic characteristics influence country risk, which has so far not been discussed in the literature, cannot be rejected. Drawing on this background, further research could analyse the incidence of debt-service difficulties with a focus on the motives and dependencies of the governments in different countries. Moreover, it would be interesting for practical country-risk analyses to determine whether the ex-ante forecasting errors of econometric models could be significantly diminished by including the politico-economic factors and variables discussed in this paper.

[23] A. Bäcker, op. cit., ch. 7.

[24] Source: time series 79a.d in the IMF International Financial Statistics.

[25] Data sources: The World Bank (World Debt Tables) and International Monetary Fund (International Financial Statistics); countries: see footnote 21.