

Nunnenkamp, Peter

Book Part — Digitized Version

Bank lending and government intervention in capital markets: Has recycling gone too far?

Provided in Cooperation with:

Kiel Institute for the World Economy – Leibniz Center for Research on Global Economic Challenges

Suggested Citation: Nunnenkamp, Peter (1986) : Bank lending and government intervention in capital markets: Has recycling gone too far?, In: Giersch, Herbert (Ed.): The international debt problem: lessons for the future, ISBN 3-16-345085-7, Mohr, Tübingen, pp. 42-65

This Version is available at:

<https://hdl.handle.net/10419/1974>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Peter Nunnenkamp

Bank Lending and Government Intervention in Capital Markets: Has Recycling Gone Too Far?

I. Introduction

In the past few years most analyses of the widespread debt problems in the Third World were concentrated on unfavourable world market developments on the one hand and domestic policy failures in the borrowing countries on the other. However, since these factors only explain the demand side of the problem, it is logical that the time-tried saying - "it takes two to tango" - retains its validity here: the strong demand for capital was met by a strong willingness to supply capital.

This paper deals with the latter aspect and centers around the hypothesis that imprudent borrowing of Third World economies in the 1970s and early 1980s was complemented by imprudent lending by capital exporters in the industrialised countries. Since the role of development assistance granted by official aid donors and foreign direct investment in closing current account deficits of developing countries declined over the last decade, the role of Western commercial banks comes into focus. For most of the more advanced Third World economies (especially in Latin America) bank loans became the major source of external funds (for an overview, see Table 1). Might it not be justified to question the praise of the banks as highly efficient intermediaries in rechannelling huge amounts of petro-dollars to non-oil exporting developing countries (NOPECs) (1) in the 1970s and ask whether recycling has gone too far (2)?

The analysis is structured as follows: Section II tries to identify the determinants of the volume of capital flows and the interest rate spreads associated with new bank loans for a sample of 19 borrowing countries (3). The hypothesis of imprudent lending implies that bank behaviour

-
- (1) According to a frequently used classification this group excludes OPEC member countries, Bahrain, Brunei, Oman, Trinidad and Tobago and those developing countries classified as off-shore banking centers.
 - (2) The analytical framework applied in the following may provide some indications why bank lending as one form of using world-wide savings was favoured (apparently by both capital importers and exporters), whereas other types of financial intermediation became less important. However, the question of an optimal structure for the financial system which would prevent or contain the misallocation of capital and which would use savings more efficiently is a much broader one than can be dealt with in this paper. To solve this problem, much more theoretical work on the debt issue seems to be needed.
 - (3) Included are: Argentina, Brazil, Chile, Colombia, Egypt, India, Indonesia, Ivory Coast, Malaysia, Mexico, Morocco, Nigeria, the Philip-

Table 1 - Structure of Long-Term (a) External Debt of Developing Countries of Different Income Levels vis-à-vis DAC Countries (b), 1971, 1975, 1980, 1983 (per cent)

| | Low-income countries (c) | | | | High-income countries (d) | | | |
|---------------------------------|--------------------------|------|------|------|---------------------------|------|------|------|
| | 1971 | 1975 | 1980 | 1983 | 1971 | 1975 | 1980 | 1983 |
| Official development assistance | 77.3 | 63.5 | 55.8 | 48.8 | 20.0 | 12.8 | 7.1 | 5.2 |
| Export credits | 18.4 | 22.6 | 31.6 | 33.0 | 46.6 | 32.6 | 31.5 | 25.6 |
| Other private lending | 4.3 | 13.9 | 12.6 | 18.2 | 33.4 | 54.6 | 61.4 | 69.2 |
| bank credits (e) (f) | 57.1 | 81.0 | 81.1 | 81.8 | 53.3 | 80.9 | 83.1 | 87.5 |
| bonds (f) | 28.6 | 4.8 | 6.7 | 5.8 | 20.0 | 8.5 | 8.8 | 5.9 |
| other (f) | 14.3 | 14.2 | 12.2 | 12.9 | 26.7 | 10.6 | 8.1 | 6.6 |

(a) Data on short-term debt is available only for 1982 and succeeding years. -
 (b) The DAC group consists of: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Italy, Japan, Netherlands, New Zealand, Norway, Sweden, Switzerland, United Kingdom, United States, West Germany. - (c) Developing countries with per capita incomes of less than US \$ 600 (1980). - (d) Developing countries with per capita incomes of more than US \$ 1200 (1980). - (e) Export credits excluded. - (f) As per cent of total other private lending.

Source: OECD [b].

did not reflect different degrees of risk involved in lending to different countries. Section III examines some important influences which might have distorted the banks' risk perception. In this context the impact of government interventions in capital markets deserves particular consideration. Finally, a system of economic incentives is considered, which could prevent banks from excessive lending to problem and sound borrowers alike and nonetheless ensure an adequate supply of new loans to developing countries (Section IV).

II. The Determinants of Interest Rate Spreads and the Volume of New Commercial Loans to Developing Countries: An Empirical Investigation

In mid-1984, NOPECs' gross long- and short-term debt vis-à-vis commercial banks reporting to the Bank for International Settlements (BIS) stood at \$265 billion. Within a decade gross figures had soared about eightfold, thereby outpacing both the growth in bank lending to other country groups and the extension of funds to NOPECs from other sources.

With respect to the hypothesis of imprudent bank lending the following observations shed some light on interesting characteristics of the credit

lines, the Republic of Korea, Thailand, Tunisia, Turkey, Venezuela and Yugoslavia. Encompassing the most heavily indebted developing countries, the sample consists of quite different economies, for example in terms of development level and domestic economic policies, so that it seems possible to draw general conclusions.

relations between the banks and the developing countries:

- The Third World's liabilities vis-à-vis commercial banks are highly concentrated in a small number of countries which proved unable to meet their debt service obligations in the recent past. More than 50 per cent of the BIS reporting banks' gross claims against all developing countries in the early 1980s were against only five major Latin American problem borrowers (Argentina, Brazil, Chile, Mexico and Venezuela).
- Commercial banks continued to lend to NOPECs on a large scale in the early 1980s, even when these economies had been hit by a new series of external shocks and domestic policy failures had become evident (1). According to OECD data [OECD, c], the amount of medium- and long-term bank loans taken out by NOPECs in 1981 (\$41 billion) was higher than ever before. Even in 1982 and 1983 loan volumes provided by banks exceeded figures prevailing in the 1970s (2). On a net basis (i.e. adjusted for repayments) the average annual amount of additional bank lending still increased for more than half of the 19 sample countries when comparing periods 1976-1978 and 1979-1983; taken together figures jumped from \$21.5 billion annually to \$31 billion (Table 2).
- Parallel to the expansion of additional bank lending, interest rate spreads were significantly lower in the period 1979-1983 than in 1976-1978. Spreads are commonly regarded as a reflection of the risk perception of banks as regards different borrowers (3). However, the reduction in spreads ran counter to a deterioration in the borrowers' debt/output ratio, the debt service ratio and the ratio of international reserves to GDP (Table 2), i.e. the most frequently used debt indicators (4). It may be added that the variation in these indicators among the sample countries (as exemplified in the last two rows of Table 2) by far outpaced the variation in spreads, though the difference was somewhat narrowed in 1979-1983. Moreover, not only countries without major repayment difficulties but also problem borrowers like Argentina, Chile, Mexico, Venezuela, the Philippines and Yugoslavia enjoyed considerably reduced spreads.

-
- (1) It is often claimed by bankers that this was due to their role in assisting domestic exporters and in maintaining jobs and production in the industrial countries. Inasmuch as further bank lending to NOPECs resulted from pressures of domestic exporters which at the same time were important customers in national financial markets and which threatened to discontinue all credit relations with banks refusing more export financing, the banks' lending behaviour may have been merely rational. However, these decisions were based on the banks' own interests rather than on social responsibilities stated by bankers. The argument of the banks' social function may be rather thought to make the public inclined to bear part of the risks or losses incurred by the lending institutions.
 - (2) However, it has to be taken into account that - especially in 1983 - new credits were largely absorbed by servicing maturing debt.
 - (3) Edwards [1984, p. 726]; Goodman [1983, p. 26]; Johnston [1980]; for a qualification, see p. 45 of this article.
 - (4) For a discussion of the economic rationale of these indicators, see pp. 45 f. of this article.

Doubts about whether bank lending was structured in accordance with comprehensive risk considerations would seem to be strengthened by these findings. However, in a recently published empirical investigation [Edwards, 1984] it was argued that banks have tended to consider some of the economic characteristics of countries when determining the spread to charge. "One of the most interesting results obtained is the robust and significant positive relation ... between the log of the spread over LIBOR and the debt-output ratio" [Edwards, 1984, p. 733]. According to Edwards, the hypothesis of imprudent lending should be rejected.

However, there is enough reason to repeat the analysis and - more importantly - to complement it in several respects:

- First, even if Edwards' indicator approach is followed (i.e. applying frequently used debt indicators like debt/output and debt service ratios as independent variables), only minor improvements in the underlying data lead to substantially different regression results. Table 3 presents regression estimates based on bank lending in the period 1976-1983 (Edwards: 1976-1980) and referring to total debt and debt service, i.e. including private non-guaranteed debt (Edwards: public and publicly guaranteed debt, exclusively) (1). The adjusted R^2 are extremely poor. For example, the debt/output ratio (DOR) remained insignificant irrespective of its definition (2). Thus it seems doubtful whether Edwards' results are as "robust" as claimed.
- Second, the analysis of spreads should be complemented in order to account for the shortcomings of such an approach in explaining bank behaviour. In addition to the risk perception of banks, spreads will be determined by other factors such as the level and volatility of interest rates, loan demand in domestic and international markets and the competitive structure of the syndicated credit market [Goodman, 1983, pp. 23 ff.; Nunnenkamp, Junge, 1985, pp. 56 ff.]. These influences cannot be separated from risk perception empirically. Furthermore, risk may not only be reflected in spreads but also in other loan surcharges or even in the base interest rates (LIBOR, US prime). Some borrowers agreed to higher loan fees, which are frequently not known to the public, in order to prevent a rise in well-publicized spreads. Finally,

-
- (1) As in Table A2, cross-country regressions were run by pooling the data for the 19 sample countries and the years 1976-1983 (with a varying number of missing values for 1982 and 1983).
 - (2) Similarly poor results are obtained when additional (net) bank lending relative to the accumulated bank debt (ADDLENR) is regarded as a dependent variable (Table 3); the highly significant negative coefficient of the current account variable (CUACR) was probably determined by demand rather than supply factors (minor current account deficits reducing the need to take out further bank loans). If similar regressions for individual years (1976-1981) are run, Table A1 shows hardly any significant relation between ADDLENR and the debt indicators included. As regards the determination of spreads, the adjusted R^2 considerably improved in the year-by-year estimates. However, most of the significant coefficients were to be found in 1976 and 1977 only. Moreover, to a great extent the results contradict conventional wisdom (higher debt service ratios going along with comparatively low spreads) and point to the inadequacy of the indicator approach.

Table 2 - Some Basic Characteristics of International Indebtedness of Major Third World Borrowers, 1976-1983

| | Additional (net) bank lending (annual averages; US \$ billions) | | Spread (a) (percentage points) | | Debt (b) /GDP | | Debt service (c) / exports | | International reserves/GDP | |
|------------------------|--|---------------|--------------------------------------|---------------|---------------|---------------|-------------------------------|---------------|-------------------------------|---------------|
| | | | | | per cent | | | | | |
| | 1976- 1978 | 1979- 1983 | 1976- 1978 | 1979- 1983 | 1976- 1978 | 1979- 1982 | 1976- 1978 | 1979- 1983 | 1976- 1978 | 1979- 1983 |
| Argentina | 1.17 | 3.57 | 1.69 | 1.05 | 12.5 | 22.0 | 35.1 | 57.8 | 5.8 | 5.3(g) |
| Brazil | 5.61 | 5.42 | 1.82 | 1.66 | 19.3 | 23.4 | 56.0 | 70.7 | 4.7 | 2.4 |
| Chile | 0.64 | 1.79 | 1.88 | 0.94 | 38.7 | 39.5 | 46.4 | 59.0 | 5.5 | 9.8(g) |
| Colombia | 0.16 | 0.79 | 1.44 | 0.92 | 16.1 | 16.2 | 18.6 | 27.2(g) | 9.2 | 11.7 |
| Mexico | 3.26 | 8.24 | 1.53 | 1.12 | 29.5 | 27.5 | 116.1 | 69.5 | 1.8 | 1.7 |
| Venezuela | 3.29 | 2.00 | 1.33 | 0.91 | 18.4 | 23.9 | 11.5 | 25.4 | 22.2 | 12.7 |
| India | 0.05 | 0.30 | 1.04(d) | 0.56 | 14.3 | 11.7 | 15.4 | 17.6 | 4.7 | 4.0(g) |
| Indonesia | 0.68 | 0.64 | 1.57 | 1.19 | 28.0 | 23.9 | 14.6 | 12.3 | 4.9 | 6.0 |
| Malaysia | 0.29 | 0.90 | 0.99 | 0.46 | 19.8 | 21.6 | 8.2 | 6.1(g) | 21.5 | 16.7 |
| Philippines | 0.67 | 0.85 | 1.52 | 0.85 | 23.9 | 26.5 | 24.1 | 31.3 | 8.0 | 5.6 |
| Republic of Korea | 1.18 | 2.52 | 1.62 | 0.72 | 25.6 | 28.0 | 13.5 | 19.1 | 6.9 | 4.0 |
| Thailand | 0.48 | 0.28 | 1.12 | 0.63 | 10.3 | 17.4 | 15.7 | 18.4(g) | 10.2 | 5.2 |
| Egypt | 0.23 | 0.84 | 1.49 | 1.32 | 39.3 | 63.0 | 60.9 | 67.5 | 2.4 | 3.5 |
| Ivory Coast | 0.38 | 0.28 | 1.90 | 1.44 | 32.0 | 52.5 | 16.1 | 36.4(g) | 3.5 | 0.5 |
| Nigeria | 0.50 | 1.34 | 1.04(e) | 0.94 | 4.2 | 8.3 | 5.7 | 9.9 | 8.7 | 7.3(g) |
| Morocco | 0.70 | 0.32 | 1.29 | 0.94 | 35.7 | 51.3 | 28.5 | 59.5(g) | 4.9 | 2.1 |
| Tunisia | 0.27 | 0.04 | 1.05(d) | 0.59(f) | 39.9 | 43.7 | 21.8 | 24.6(g) | 7.6 | 7.2 |
| Yugoslavia | 1.27 | 0.78 | 1.53 | 0.98(g) | 22.6 | 23.6 | 31.0 | 34.1 | 5.5 | 2.1(g) |
| Turkey | 0.66 | 0.17 | 1.40 | 1.34(h) | 12.0 | 23.7 | 24.1 | 38.6 | 2.1 | 2.2 |
| All 19 countries(i) | 21.48 | 31.07 | 1.43 | 0.98 | 23.3 | 28.8 | 29.6 | 36.1 | 7.4 | 5.8 |
| Highest 3 countries(j) | - | - | 1.87 | 1.47 | 39.3 | 55.6 | 77.7 | 69.2 | 18.0 | 13.7 |
| Lowest 3 countries(j) | - | - | 1.13 | 0.55 | 8.8 | 12.1 | 8.5 | 13.3 | 2.1 | 1.4 |

(a) Spread is an average of the interest differentials on various base rates, where LIBOR is the most frequently used one. -
 (b) Total debt according to OECD data, i.e. short-term debt not included. - (c) Debt service according to OECD data. -
 (d) 1977-1978. - (e) 1978. - (f) 1979-1981 and 1983. - (g) 1979-1982. - (h) 1979 and 1981-1983. - (i) Unweighted averages
 except for additional bank lending. - (j) Only countries with complete data were included.

Source: Euromoney Syndication Guide [var. issues]; IMF [a]; OECD [b].

Table 3 - On Some Variables Explaining the Spread and Additional Bank Lending - Regression Results for All 19 Countries, 1976-1983

| Dependent variable | Const. | Debt indicators as explaining variables | | | | | | | | R ² and F | D.F. |
|--|--------|--|-----------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|----------------------|------|
| | | DOR1 | DOR2 | DOR3 | DSR1 | DSR2 | IRR | CUACR | GDPG | | |
| SPRL | 0.310 | -0.072 (-0.22) | | | 0.251 (1.15) | | -1.919* (-2.56) | 1.110+ (1.91) | -0.066+ (-1.78) | 0.11 3.95 | 115 |
| | 0.271 | -0.234 (-0.75) | | | 0.302 (1.38) | | -1.667* (-2.23) | | -0.067+ (-1.79) | 0.09 3.93 | 116 |
| | 0.185 | | i.t. (-) | | | 0.271+ (1.72) | -1.182 (-1.58) | | -0.074* (-2.08) | 0.10 5.24 | 114 |
| | 0.164 | | | i.t. (-) | | 0.324* (2.10) | -1.138 (-1.54) | | -0.073* (-2.07) | 0.11 5.93 | 120 |
| | | | | | | | | | | | |
| ADOLENR | 0.222 | i.t. (-) | | | -0.140+ (-1.71) | | 0.265 (0.81) | -0.643* (-2.63) | 0.004 (0.29) | 0.06 2.83 | 116 |
| | 0.243 | 0.103 (0.74) | | | -0.173+ (-1.78) | | 0.119 (0.36) | | 0.005 (0.33) | 0.01 1.18 | 116 |
| | 0.256 | | 0.099 (0.76) | | | -0.164* (-2.27) | i.t. (-) | | 0.011 (0.67) | 0.02 1.79 | 114 |
| | 0.283 | | | -0.418* (-2.02) | | -0.083 (-1.13) | 0.175 (0.52) | | 0.022 (1.25) | 0.05 2.52 | 119 |
| | | | | | | | | | | | |
| Dependent variable | Const. | Economic performance and domestic policy as explaining variables | | | | | | | | R ² and F | D.F. |
| | | INFLA | GRO | MSHD | EXRA | EXRFL | INVR | GOEXR | DEFR | | |
| SPRL | 0.520 | 0.322* (2.98) | 3.03* (2.98) | -0.797+ (-1.69) | -0.289 (-1.45) | -0.505 (-0.51) | -1.12 (-1.49) | 0.463 (0.70) | 3.15* (2.83) | 0.25 4.79 | 84 |
| ADOLENR | -0.153 | 0.022 (0.45) | 0.650 (1.43) | -0.056 (-0.26) | 0.014 (0.16) | -0.148 (-0.34) | 1.04* (3.09) | 0.722* (2.45) | 0.958+ (1.93) | 0.16 3.14 | 84 |
| <p><i>Variables:</i> SPRL = spread (logarithmic form); ADOLENR = additional bank lending (net) as per cent of total bank debt; Const. = constant term; DOR1 = public and publicly guaranteed debt as per cent of GDP; DOR2 = total debt (short-term debt excluded) as per cent of GDP; DOR3 = total bank debt (short-term debt included) as per cent of GDP; DSR1 = debt service on public and publicly guaranteed debt as per cent of exports; DSR2 = debt service on total debt as per cent of exports; IRR = international reserves as per cent of GDP; CUACR = current account surplus (deficit = -) as per cent of GDP; GDPG = GDP per capita; INFLA = rate of inflation (consumer prices); GRO = rate of growth in GDP per capita in constant prices; MSHD = change in world export market shares (moving 3-period averages); EXRA = real exchange rate vis-à-vis 5 major trading partners (1973=1); EXRFL = fluctuation in real exchange rate (moving 3-period averages); INVR = gross fixed capital formation as per cent of GDP; GOEXR = government expenditure as per cent of GDP; DEFR = government budget deficit (surplus) as per cent of GDP. <i>Statistics:</i> D.F. = degrees of freedom; t-statistics in parentheses; i.t. = variable skipped because of insufficient tolerance level; + (*) = significant at 90 (95) per cent level of confidence (two-tailed t-test).</p> | | | | | | | | | | | |

Source: Euromoney Syndication Guide [var. issues]; BIS [var. issues]; IMF [a]; OECD [b]; World Bank [var. issues]; own calculations.

banks may adjust by rationing and imposing credit ceilings rather than merely requiring higher risk premiums if the perceived probability of the borrowers' default exceeds a certain level (1). This is especially true if - as it is sometimes argued - lending banks are price-takers rather than price-makers. That is why in the following the volume of new lending (ADDLENR) is included as a second measure of banks to adjust for changed risk assessments (besides the conditions of loans as reflected in the spread) (2).

- Third, the most important question not addressed by Edwards is whether the aforementioned debt indicators are relevant altogether and whether banks *should* take them into account when assessing country risks more rigorously than they might have done in the past (3). In my view the literature on the economic rationale of such indicators clearly shows that the answer is negative [see, for example, OECD, a; Sachs, 1982, pp. 240 f.]. A definition of critical values of debt/output or debt service ratios is impossible. That a borrower has reached or exceeded specific indicator levels does not necessarily mean that repayment problems will emerge. The indicators are not based on a productivity concept that shows the amount of foreign capital a borrower is able to absorb with economic benefit. That is why independent variables based on economically questionable indicators have to be replaced by variables which may actually reflect the risks of borrowers of running into debt servicing difficulties.

A possible alternative to the indicator approach is an explanation of debt problems that focuses on external shocks. When the widespread debt problems of Third World borrowers erupted in the early 1980s, it was argued that those developing countries most severely hit by the two oil price hikes, the world recession and dramatically high interest rates would face repayment difficulties in the first place (4). Accordingly,

-
- (1) Edwards [1984, p. 726]; Eaton, Gersovitz [1981]; Sachs [1983]; Sachs, Cohen [1982].
 - (2) Of course, the volume of new bank lending is also determined by supply and demand factors. Therefore, it seems necessary to assess bank behaviour both in terms of spreads and volume of additional credits.
 - (3) It should be noted that Edwards also considers variables like the investment ratio, economic growth and inflation rates etc. However, it does not seem adequate to put together these variables and the aforementioned debt indicators in the regression analysis because of their different character.
 - (4) For an example, see Cline [1983]. Implicitly, this argumentation is to be found in the comments on this paper by von der Decken, too. The observation that the second round of recycling after the oil price shock of 1979/80 was followed by severe debt servicing difficulties in the Third World whereas the first round after the oil price hike of 1973/74 was not is merely explained by referring to economic policies in the industrial countries. According to this view, banks continued to lend in the early 1980s because they could not foresee the drastic policy changes. It is neglected that some developing countries managed to cope with deteriorating external conditions whereas others failed to adjust their economies. Moreover, with

prudent lending would have meant levying comparatively high spreads on and/or cutting short the provision of additional loans to this group of borrowers.

But the banks did not react in this manner. Neither the spread nor the amount of new lending was related to the (hypothetical) current account impact of deteriorating terms of trade, reduced world export market demand and soaring interest payment burdens (1). This is hardly surprising, however, since the group of countries which suffered most from unfavourable world market conditions was not identical with the set of borrowers experiencing major debt problems (2).

Therefore it is suggested in the following that the deteriorating debt situation of many developing countries can be better explained in terms of domestic policies rather than in terms of exogenous influences. Accordingly, an adequate test of the hypothesis of imprudent bank lending should concentrate on the borrowers' efforts to maintain or restore their international creditworthiness and their success in doing so. First of all, the internal use of funds borrowed abroad is critical for preventing future repayment difficulties. No problems are to be expected, provided the yield of externally financed projects exceeds the interest rate attached to the loans. This is why a consumptive use of funds is most likely to cause debt servicing difficulties later on. Especially when unproductive government programs accompanied by large budget deficits are financed by raising credits abroad is the ability to repay threatened. In case of rising budget deficits, fiscal policies contribute to (additional) inflationary pressures, which in turn induce a misallocation of resources. Where exchange rate adjustments do not offset unfavourable differentials between domestic and international inflation, current account deficits are further enlarged. Overvalued and heavily fluctuating domestic currencies discriminate against export activities, thereby adding to transfer problems.

respect to the anticipation of external shocks like soaring international interest rates, historical experience should have shown that real interest rates would not stay for long on an extremely low or even negative level.

- (1) Alternatively, the *annual* current account impact of terms-of-trade effects, real world market demand effects and interest rate effects as per cent of GDP and the *cumulative* current account impact of the above-mentioned external shocks since 1974 as per cent of cumulative GDP were considered in regression analysis. All regression coefficients were completely insignificant; the adjusted R^2 were practically nil.
- (2) Within a sample of 18 developing countries (comprising all major borrowers) the relative impact of external shocks on the current account was strongest in Thailand, the Philippines, Chile, Turkey, Yugoslavia and the Republic of Korea. Notwithstanding, Thailand and Korea proved to be rather sound debtors. For the major problem countries in Latin America external shocks were of considerably less importance (especially for Mexico). For methods of calculation and detailed empirical results, see Nunnenkamp [1985b, Chs. 5 & 6; 1985c]; Nunnenkamp, Junge [1985, pp. 22 ff.].

The lower part of Table 3 presents regression results obtained by taking domestic policies and economic performance as determining variables with regard to interest rate spreads and the amount of additional lending. Given the above explanations the following factors were included:

- rate of growth in real GDP per capita (GRO),
- gross fixed capital formation as per cent of GDP (INVR),
- government expenditure as per cent of GDP (GOEXR),
- government budget deficit as per cent of GDP (DEFR),
- rate of inflation (INFLA),
- change in world export market shares (MSHD),
- real exchange rate vis-à-vis major trading partners (EXRA),
- fluctuation in the real exchange rate (EXRFL).

Though both equations in the lower part of Table 3 show a considerably higher adjusted R^2 than the indicator approach and the external shock approach, the explanatory power of the domestic policy and performance variables also remain very limited. On the whole, the signs and significance of the regression coefficients rather confirm the a priori impression that banks did not rigorously discriminate between good and bad risks. As regards the determination of spreads, higher inflation rates (INFLA) and higher government budget deficits (DEFR) went along with higher spreads. Export promotion resulting in rising world export market shares (MSHD) led to improved loan conditions, but the level of confidence is rather low. On the other hand, four variables (the degree of devaluation, exchange rate fluctuations, investment and government expenditure shares) remain insignificant. Moreover, the growth variable has a highly significant "wrong" sign. As regards additional lending, the evidence is even more strongly in favour of the hypothesis of imprudent lending. Only the positive investment variable (INVR) conflicts with this interpretation. All remaining factors exerted no significant influence on the provision of new loans or have a (positive) sign (government expenditure and budget deficits) which contradicts an economically sound lending behaviour (1).

These results are hardly affected, when

- domestic policy variables and economic performance are separated, i.e. only one set of variables appears in an equation (Table A2);
- external shock variables are included additionally, in order to account for the combined effects of internal and exogenous influences (Table A2) (2);

(1) Probably, demand factors were responsible for the positive signs of GOEXR and DEFR. However, the banks were apparently willing to comply with this demand.

(2) As regards the exogenous factors, the aforementioned quantitative current account impact of external shocks is supplemented in Table A2 by three indicators: EXPOR reflects the degree of world market orientation, i.e. the exposure to international demand losses; TOT shows the developments in terms of trade; DSTR as the share of

- regressions are run for individual years between 1976 and 1981 (Tables A3 and A4) (1).

On the whole, the regression analysis lends support to the hypothesis that recycling has gone too far in the sense that banks did not rigorously discriminate between good and bad risks. Thus it seems justified to discuss factors which might have distorted the banks' risk perception and led to an imprudently expansive lending to borrowers who shortly afterwards ran into severe debt problems.

III. The Risk Perception of Banks: Government Intervention and Other Distorting Influences in Capital Markets

The hypothesis that in bank lending to the Third World risk considerations have been overruled by distorting factors, especially by influences resulting from government interventions, could hardly be subjected to a rigorous empirical analysis. Such an approach is heavily impeded by data limitations and the lack of a comprehensive and empirically testable theory of bank behaviour (2). Instead, I shall present a set of plausible arguments by referring to some areas of conventional economic theory, which may back the supposition that bank lending was subjected to risk illusion or that banks even could discount the risks involved because of incentives to moral hazard (3).

bank debt in total debt serves as a measure for interest rate vulnerability, since the interest payment burden increased for liabilities due to banks particularly. However, most of the external shock variables remain insignificant. The negative EXPOR in the analysis of spreads indicates that openness was an advantage rather than a disadvantage, since the adjustment to external imbalances was facilitated.

- (1) Most of the coefficients are insignificant, irrespective of whether the determination of new lending or spreads is analysed. At most, for the year 1979 the hypothesis of imprudent lending as regards interest rate spreads has to be rejected, when high government expenditure shares, high budget deficits, low investment ratios and minor devaluations or even appreciations of domestic currencies were related to comparatively high spreads.
- (2) The major deficit in economic research on the debt issue is to be found in the theoretical field. Because of the lack of a theoretical foundation, the great majority of papers on the Third World's international indebtedness remain rather descriptive, whereas an urgent need for more analytical studies still prevails.
- (3) The pieces of economic theory referred to in the following clearly have to be supplemented by additional theoretical considerations in further economic research in order to complement the picture of bank lending to developing countries. One promising avenue in this field may be provided by the agency cost theory of finance [Jensen, Meckling, 1976]. Agent-principal relations (originally considered in the analysis of the financial structure of enterprises) seem to be relevant in the context of international debt, too. Such relations

It has to be admitted that for the banks severe difficulties prevailed in adequately judging lending risks vis-à-vis developing countries, since the deficiencies of available indicator systems did not allow a safe prediction of future debt problems. Risk analysis was further complicated by the growing importance of systematically correlated risks: The oil price hikes contributed to a parallel deterioration in the terms of trade of most NOPECs; the economic slump in major industrialised countries negatively affected the Third World's exports; and the roll-over technique quickly transmitted rising international interest rates to all those borrowers with considerable bank debt. However, because of historical experience prudent bankers could not assume that the situation of extremely low or negative real interest rates would last for long. Moreover, the lack of reliable information should have led banks to a rather cautious treatment of developing countries' loan demands. This need sharply contrasts with the expansive lending until the early 1980s, when loan-marketing officers seem to have aimed at maximising loan approvals in order to get higher annual bonuses, to improve their career prospects and to increase fee revenues that were at stake especially for syndicate leaders and managing banks [for the latter factor, see Weintraub, 1983]. In cases like Mexico, an impressive raw material endowment was regarded as sufficient collateral, without taking into account whether the revenues therefrom were used productively [Group of Thirty, 1982b].

A view on some characteristics of bank lending to Third World borrowers may help the identification of factors which distorted the banks' risk assessment (1). First, it should be noted that a significant part of the Third World's bank debt has been raised via syndicated bank loans on a floating interest rate basis (2). Although, in principle, the roll-over and syndication techniques seemed well suited to improving risk-sharing both among banks and between banks and borrowers, the other side of the coin might have been a cumulation of problematic decisions by banks. Probably, the technique of rolling over short-term credits gave rise to risk illusions on the side of the banks, as the refunding risk and the risk of rising interest rates were both shifted to a large degree to the borrowers. Especially many small banks which entered the market for credits to developing countries via the syndication process, heavily relied on the risk assessments of major banks arranging the syndications [Group of Thirty, 1982a; de Grauwe, Fratianni, 1984; Goodman, 1983]. Independent decision making was at least partly ruled out, which may have contributed to a lemming-like behaviour in international banking [Guttentag, Herring, 1985].

exist between the borrowing countries' governments on the one hand and capital exporters, international organisations and the borrowing countries' populations on the other, for example. Agency costs resulting from different interests of agents and principals are likely to lead to a misallocation of capital. Referring to this approach, the question may be dealt with why bank lending was favoured at the expense of foreign direct investment and other types of financial intermediation [for first steps in this direction, see Eaton, Gersovitz, 1981; Sachs, 1982; Sachs, Cohen, 1982].

- (1) For a more detailed discussion, see Nunnenkamp [1985a].
- (2) In the period 1975-1983 about \$220 billion were raised by NOPECs in the medium- and long-term Euro-currency market on a floating interest rate basis [OECD, c].

Table 4 - The Country Structure of Different US Banking Groups' Loan Portfolios: Results from Rank Correlation Analysis (a)

| Banking groups compared | Ranking criterion | | |
|--|-----------------------------|---|---|
| | loans in million US dollars | loans as per cent of the borrowing countries' exports | short-term loans as per cent of total loans |
| All banks/ 9 largest banks | 0.99 | 0.99 | 0.96 |
| All banks/15 next largest banks | 0.93 | 0.91 | 0.77 |
| All banks/other banks (b) | 0.93 | 0.95 | 0.76 |
| 9 largest banks/15 next largest banks | 0.89 | 0.88 | 0.63 |
| 9 largest banks/other banks (b) | 0.90 | 0.92 | 0.62 |
| 15 next largest banks/ other banks (b) | 0.95 | 0.89 | 0.85 |
| (a) The ranking refers to data on loans outstanding to 30 major borrowing countries at the end of June 1982. All Spearman-coefficients are significant at 99 per cent level of confidence. - (b) All banks except 9 largest and 15 next largest banks. | | | |

Source: Board of Governors [var. issues]; IMF [a]; own calculations.

This reasoning is supported by the rank correlation analysis presented in Table 4. The highly significant positive Spearman-coefficients indicate that different groups of US banks, classified according to their overall volume of lending operations, concentrated on a similar set of borrowers. This result applies to the country structure of loan portfolios no matter what ranking criterion is chosen (absolute volume of outstanding loans to 30 major borrowing countries; outstanding loans relative to the borrowing countries' exports; share of short-term loans in total loans outstanding; Table 4). It also holds true when the growth in assets of banks of different nationalities in the period 1977-1981 vis-à-vis Third World economies is compared. The following Spearman-coefficients were calculated by ranking the growth rates in loans outstanding to about 30 major borrowing countries in the period 1977-1981 (1):

- (1) All coefficients are significant at the 95 per cent level at least. Loans extended by foreign subsidiaries of UK and West German banks are not included because of a lack of data. The calculations are based on information from Board of Governors of the Federal Reserve System [var. issues]; Bank of England [var. issues]; Deutsche Bundesbank [var. issues].

- US banks/UK banks: 0.82
- US banks/West German banks: 0.48
- UK banks/West German banks: 0.43

Another factor which can be supposed to have distorted the banks' lending decisions refers to the widespread use of public guarantees attached to loans raised by developing countries. Already in the first half of the 1970s more than 50 per cent of the NOPECs' long-term debt from private sources was publicly guaranteed by borrower governments. This share further increased to about 70 per cent in the most recent past [IMF, b]. Especially private financial institutions were the beneficiaries of the intensified use of official guarantees. Apparently, the creditors were on the safe side, since it could be assumed that Third World governments would pick up the bill in case of failing projects. Again this is likely to have induced risk illusions on the creditors' side, leading to too expansive lending and badly diversified credit portfolios [Lessard, 1983].

Risk illusions were frustrated recently, when many borrowers could no longer manage the rising debt service burden and guarantees by public authorities in developing countries proved to be worth nothing. However, a second line of defence existed against massive losses arising from lending to the Third World. It may be argued that risks in international lending not only *were* disregarded, but *could* even be disregarded without detriment and did not need to be properly analysed. This is due to the widespread view that banks should be officially bailed out in a critical situation threatening their economic well-being, in order to prevent overall economic conditions from being negatively affected. The reliance on both domestic central banks and international organisations like the IMF, which were supposed to step in as lenders of last resort if commercial banks ran into trouble, is likely to have further reduced the risk-consciousness of private lenders. Backing up this contention is a communiqué issued in 1974 by the central bank governors of the Group of Ten countries and Switzerland after having discussed the problem of the lender of last resort in Euro-markets. It stated: "They [the governors] recognized that it would not be practical to lay down in advance detailed rules and procedures for the provision of temporary liquidity. But they were satisfied that means are available for that purpose and will be used if and when necessary" [cited in Wallich, 1977, p. 95]. This statement may well have increased the possibility of moral hazard since no distinction is drawn between the insolvency of individual banks and an overall liquidity shortage. Presently, only the threat for the top management of banks that public assistance may be made conditional on its own discharge from office in case of severe mismanagement may reduce moral hazard.

A second argument along these lines refers to moral hazard resulting from insurance schemes for bank depositors. Because depositors feel safeguarded against losses, they face insufficient incentives to critically review the banks' policies (if published information allows them to do so) and to react by withdrawing their deposits if they consider lending decisions to be unsound. "Deposit insurance ... spares most depositors the cost of learning about the operation of banks. But, as a consequence,

deposit insurance frees banks from the discipline and cost of those depositors' concerns" [Benston, 1983, pp. 7 f.].

It seems plausible to attribute continued bank lending to already over-indebted developing countries at least partly to moral hazard, rather than to persistent hopes of only temporary repayment difficulties of borrowers. This behaviour would have been merely rational from the banks' point of view. The blame is thus not primarily being placed on banks for overlending - as is frequently supposed by critical commentators to the position of which this paper is representative - but rather on governments and other regulatory bodies in the creditor countries for not providing economically sound incentives for prudent banking. The conditions for a socialisation of private losses even seem to have improved recently, as reflected by a review of major proposals presently discussed to alleviate the critical debt situation of developing countries. Many of them argue for shifting the adjustment burden to the taxpayer [for an overview, see Campbell, 1982; Nunnenkamp, Junge, 1985, pp. 115-126].

In some instances, government intervention in capital markets seems to have overruled the banks' risk considerations in a more direct way. In a survey conducted by the Group of Thirty [1982a] about 25 per cent of bankers responded that loan decisions have been considerably influenced by political pressures of creditor governments. This distorting factor is likely to have gathered momentum recently. In the context of emergency actions and rescheduling programs it was mainly the IMF which pressed banks to continue or even increase lending to problem borrowers [see, for example, Kraft, 1984, on the Mexican case] (1). Together with official demands for a reduction in the overall exposure of banks in developing countries and for improved precautionary measures against possible loan losses in the banks' balance sheets (2), these pressures may have induced an adverse selection of banks. Contradictory public policies on the credit relations between commercial banks and Third World borrowers gave rise to a further misallocation of capital, to the extent that problem countries were favoured at the expense of good risks. Where this strategy means throwing good money after the bad, it may trigger - without having solved the initial problems - debt crises in countries that are at this point still creditworthy.

-
- (1) On the other hand, the role of the IMF, which made available considerable amounts of official credits for debt-ridden developing countries, may be subsumed under the moral hazard hypothesis, since banks got a chance to transfer their own risks at least partly to official agencies [Vaubel, 1983].
 - (2) For example, regulatory authorities in the United States have asked the banks to increase capital/loan ratios. For West Germany, there is the reform of the Kreditwesengesetz, which requires the application of domestic banking principles to foreign subsidiaries of German banks as well.

IV. Possible Paths to Prudent Bank Lending: Government Intervention versus Market Control

Provided that the above reasoning draws a fairly correct picture of some major underlying factors behind the expansive bank lending to the Third World in the 1970s and early 1980s, it has important consequences for the discussion of possible solutions to ongoing debt problems. First of all, it would be inadequate to shift part of the adjustment burden from the commercial banks to the public. Proposals to socialise private risks or losses may reduce economic and financial tensions arising from over-indebtedness of major borrowers in the short run. In the longer run, however, the credit relations between commercial banks and developing countries would continue to be based on economically unsound incentive structures.

This argument is to be applied to the present discussion on the recent reversal in the traditional direction of capital flows between industrialised and developing countries. It is said that the latter cannot afford negative net transfers for long without new debt crises being provoked. Since the sudden turnaround in banks' lending policies towards many Third World countries in mid-1982, many observers advocate a greater commitment of public creditors in order to meet the persistent need of developing countries for fresh money [see e.g. Cuddy, 1983]. The provision of public funds is intended to serve two purposes: On the one hand it should help to fill the perceived financial gap in external balances of developing countries. On the other hand this suggestion is frequently meant to take part of the adjustment burden off the shoulders of highly exposed Western commercial banks and shift it to the public. The most popular way of socialising private bank risks or losses would be to officially acquire bank credits at no or only a small discount (1).

Two major arguments must be raised against the suggestion of tackling ongoing debt difficulties by mobilising public funds for problem-ridden borrowers and commercial banks. Provided that the overall amount of development assistance will continue to grow only modestly, public funds cannot compensate for bank credits to a significant extent without strongly interfering with traditional motivations for public aid. Moreover, if problem borrowers would receive subsidised credits at the expense of sound debtors, a severe moral hazard problem arises. The latter countries would be discouraged from following policies that seem well suited to preventing major difficulties in debt servicing, i.e. further problem cases would be invited. As concerns the commercial banks, the proposed strategy of public assistance would again result in moral hazard problems, as private creditors might be encouraged to carelessly repeat imprudent lending. The moral hazard argument also applies to debt renegotiations and reschedulings. The practice of granting officially subsidised loans in this context should be suspended. It does not seem plausible that borrowers must be bribed in order to adopt adjustment policies that are actually in their own best interests. If organisations like the IMF are assumed to know better what borrowers and lenders should do, they should rather act as an agent providing information and organising joint

(1) For an overview on different variants of this approach, see Bogdanowicz-Bindert [1983].

action of large and incoherent groups of creditors faced with free-rider problems [Vaubel, 1983].

In order to sustain the functioning of the worldwide financial system, official entities have to provide the public good of preventing a general run of depositors on their banks that threatens to result in an overall liquidity drain. However, the lender-of-last-resort function of central banks must be defined in a way which does not invite commercial banks to rely on public guarantees in their credit decisions. That is why one must explicitly differentiate between the risk of insolvency of individual banks which pursued imprudent policies and the risk of illiquidity of the whole system. Only the latter should be counteracted by monetary policies. To this end increased liquidity preferences of the public have to be compensated for by open-market operations of central banks and, if necessary, drastically reduced reserve requirements for commercial banks. If the Western central banks would announce in advance that, in times of a crisis, they would follow the policy just suggested, the public would be assured that the severe failures of monetary policies in the 1930s will not be repeated [Vaubel, 1984]. This certainty would in turn help to further stabilise the financial system.

This view is challenged by those who argue that direct official assistance should also be granted to troubled individual banks, provided that they face only temporary difficulties but can be supposed to be solvent in the longer run [see, for example, Guttentag, Herring, 1983]. To avoid moral hazard as far as possible, it is suggested by some that public supervisory bodies be empowered to effectively regulate the lending policies of commercial banks. However, this approach is bound to fail. The authorities would experience insurmountable difficulties in deciding which bank deserves public help and which does not (1). Moreover, an intensified public regulation of commercial banks' lending activities is likely to result in a stalemate. Officially imposed credit ceilings or country limits would remain arbitrary since, as a rule, public authorities have no better information on the risks involved than private creditors.

As an alternative to public regulation, the mechanism of market control over bank policies should be strengthened. This requires different measures. Banks should be obliged to disclose more and better information about their credit commitments and their exposure in problem countries. This would provide bank depositors and shareholders with better opportunities to control bank business. In order to equally improve incentives to do so, insurance schemes for bank deposits should be limited in coverage (not only *de jure* but also *de facto*), at least for major depositors. More disclosure can also be expected to encourage banks to (gradually) adjust their nominal claims on borrowers to actual market values. US banks in particular are lagging behind in this respect, whereas especially German banks seem to have accumulated considerable reserves. A more widespread use of secondary markets for bank loans, where necessary write-offs are determined by demand and supply, would help this process.

(1) It may even be argued that individual banks cannot face liquidity problems at all, unless there is a general liquidity crisis [Sjaastad, 1983; Vaubel, 1984]. In the absence of a general crisis, each bank can always improve its liquidity position by selling long-term assets.

Notwithstanding the considerable adjustment burden inherited from past lending to the Third World, commercial banks will have to play the central role in the transfer of financial resources from the North to the South in the coming years as well, at least as regards the already advanced developing countries. Official creditors cannot replace bank loans to any significant extent. Attempts by creditor governments to indirectly interfere in the transfer of private funds are likely to do more harm than good. First of all, official interventions would probably fail to achieve an expansion in *overall* financial resources at the Third World's disposal. A higher grant element in official guaranty schemes for export credits, for example, is likely to expand trade-related loans only at the expense of other bank credits. Second, official interventions frequently involve considerable social costs as they shift part of the credit risks to the taxpayer.

Presently much scepticism prevails as to whether private banks will increase lending to developing countries on a voluntary basis, when this will take place and what amount will be involved. It cannot be denied that banks are faced with considerable uncertainties about the credit-worthiness of borrowers in the Third World. Undoubtedly it is hard to decide where the provision of fresh money is justified and profitable and where not, especially with respect to today's problem borrowers. Economically, further lending only makes sense if debt difficulties can be expected to be overcome within a reasonably short period. However, in contrast to the indiscriminately expansive lending until the early 1980s banks did not indiscriminately refuse to continue lending in the most recent past. Apart from a short period in 1982, when net lending was negative for many sound debtors too, this group of developing countries experienced no major difficulties in raising private funds after the debt crisis in Latin America was in full swing. For problem borrowers net bank lending dwindled to only 20 per cent in the period from July 1982 to December 1983 compared to the period from January 1981 to June 1982. It seems reasonable to rely on private financial markets if government-induced distortions are removed [see also Campbell, 1982]. In addition, both debtor and creditor countries must pave the way for necessary policy re-orientations. If these conditions are met, then commercial banks can be expected to fulfill their role in providing a sufficient amount of new loans.

Table A1 - Regression Results: Frequently Used Debt Indicators as Explaining Variables (all 19 countries, individual years 1976-1981)

| Dependent variable | Year | Const. | DOR3 | DSR2 | IRR | GDPG | R ² and F | D.F. |
|--------------------|------|--------|-------------------|--------------------|--------------------|-------------------|----------------------|------|
| SPRL | 1976 | 0.511 | 2.421* (3.33) | -0.641* (-4.08) | -2.477* (-4.83) | 0.127* (3.02) | 0.58 6.11 | 11 |
| | 1977 | 0.406 | 3.181* (3.56) | -0.724* (-3.64) | -4.829* (-5.60) | 0.186* (2.74) | 0.67 9.52 | 13 |
| | 1978 | 0.100 | 0.493 (0.48) | 0.312 (1.28) | -2.901+ (-1.91) | 0.060 (0.63) | 0.34 3.29 | 14 |
| | 1979 | 0.216 | 0.456 (0.43) | i.t. (-) | -2.986+ (-1.89) | -0.087 (-0.97) | 0.10 1.67 | 15 |
| | 1980 | -0.095 | 0.617 (0.59) | 0.322 (0.60) | -1.735 (-0.95) | -0.055 (-0.85) | 0.01 1.04 | 13 |
| | 1981 | -0.188 | 0.163 (0.17) | 0.794+ (2.05) | -2.973+ (-1.91) | -0.039 (-0.62) | 0.39 3.90 | 14 |
| ADDLENR | 1976 | 0.376 | -1.243 (-0.67) | 0.091 (0.23) | 0.512 (0.39) | -0.017 (-0.16) | -0.29 0.15 | 11 |
| | 1977 | 0.380 | 0.405 (0.32) | -0.431 (-1.54) | -0.967 (-0.80) | 0.058 (0.61) | -0.07 0.72 | 13 |
| | 1978 | 0.444 | 1.249 (1.35) | -0.525* (-2.38) | -2.835+ (-2.06) | 0.100 (1.15) | 0.17 1.91 | 14 |
| | 1979 | 0.089 | 0.380 (0.85) | -0.024 (-0.18) | 0.368 (0.48) | 0.050 (1.41) | 0.11 1.55 | 14 |
| | 1980 | 0.043 | 0.125 (0.32) | 0.164 (0.83) | 0.407 (0.61) | 0.023 (0.98) | -0.02 0.92 | 13 |
| | 1981 | 0.005 | -0.202 (-0.47) | 0.213 (1.21) | 0.942 (1.33) | 0.011 (0.37) | -0.06 0.74 | 14 |

Variables: SPRL = spread (logarithmic form); ADDLENR = additional bank lending (net) as per cent of total bank debt; Const. = constant term; DOR3 = total bank debt (short-term debt included) as per cent of GDP; DSR2 = debt service on total debt as per cent of exports; IRR = international reserves as per cent of GDP; GDPG = GDP per capita. *Statistics:* D.F. = degrees of freedom; t-statistics in parentheses; + (*) = significant at 90 (95) per cent level of confidence (two-tailed t-test); i.t. = variable skipped because of insufficient tolerance level.

Source: Euromoney Syndication Guide [var. issues]; BIS [var. issues]; IMF [a]; OECD [b]; own calculations.

Table A2 - Regression Results: Economic Performance, Domestic Policies and External Shocks as Explaining Variables (all 19 countries, 1976-1983)

| Dependent variable | Const. | Performance variable | | | | External shock | | | | | R ² and F | D.F. |
|--------------------|--------|----------------------|------------------|-------------------|------------------|-----------------|------------------|--------------------|-----------------|----------------------|----------------------|------|
| | | INFLA | GRO | MSHD | MSHA | Impact variable | | Indicator variable | | | | |
| | | | | | | EXSHJR | EXSHAR | EXPOR | TOT | DSTR | | |
| SPRL | 0.17 | 0.20* (2.84) | 1.72* (2.26) | | -0.05 (-0.18) | | | -0.81* (-2.45) | 0.097 (1.44) | -0.201+ (-1.70) | 0.14 3.94 | 102 |
| | 0.17 | 0.20* (2.85) | 1.73* (2.25) | -0.07 (-0.15) | | | | -0.81* (-2.45) | 0.097 (1.38) | -0.200+ (-1.67) | 0.14 3.93 | 102 |
| | -0.01 | 0.24* (3.44) | 1.68* (2.18) | -0.32 (-0.82) | | i.t. (-) | | | | | 0.09 4.60 | 108 |
| | -0.01 | 0.24* (3.39) | 1.64* (2.07) | -0.36 (-0.84) | | | 0.16 (0.22) | | | | 0.08 3.43 | 107 |
| | | | | | | | | | | | | |
| ADDELENR | 0.22 | i.t. (-) | 0.50 (1.41) | | -0.12 (-0.92) | | | i.t. (-) | 0.020 (0.69) | -0.007 (-0.12) | -0.00 0.93 | 104 |
| | 0.23 | i.t. (-) | 0.54 (1.59) | -0.25 (-1.18) | | | | i.t. (-) | 0.014 (0.48) | i.t. (-) | 0.01 1.42 | 105 |
| | 0.24 | i.t. (-) | 0.55+ (1.69) | -0.34+ (-1.89) | | 0.04 (0.17) | | | | | 0.02 1.95 | 108 |
| | 0.24 | i.t. (-) | 0.56+ (1.68) | -0.32+ (-1.77) | | | -0.04 (-0.11) | | | | 0.02 1.94 | 108 |
| | | | | | | | | | | | | |
| Dependent variable | Const. | Policy variable | | | | | | External shock | | R ² and F | D.F. | |
| | | EXRA | EXRFL | INVR | GOEXR | DEFR | EXSHAR | Impact variable | | | | |
| SPRL | 0.42 | -0.17 (-0.80) | 1.07 (1.66) | -0.84 (-1.09) | 0.36 (0.55) | 3.34* (2.93) | 0.26 (0.34) | | | 0.15 3.60 | 85 | |
| ADDELENR | -0.15 | 0.02 (0.19) | -0.05 (-0.18) | 1.07* (3.20) | 0.76* (2.66) | 1.02* (2.08) | 0.16 (0.48) | | | 0.16 3.84 | 85 | |

Variables: SPRL = spread (logarithmic form); ADDELENR = additional bank lending (net) as per cent of total bank debt; Const. = constant term; INFLA = rate of inflation (consumer prices); GRO = rate of growth in GDP per capita in constant prices; MSHD = change in world export market shares (moving 3-period averages); MSHA = annual change in world export market shares; EXSHJR = annual current account impact of terms-of-trade effects, real world market demand effects and interest rate effects (for details of calculation, see Nunnenkamp [1985b, Ch. 5]) as per cent of GDP; EXSHAR = cumulative current account impact of the above mentioned external shocks since 1974 as per cent of (cumulative) GDP; EXPOR = exports as per cent of GDP (as an indicator of openness of the economy); TOT = terms of trade (1973=1); DSTR = bank debt as per cent of total debt (as an indicator of debt structure and interest rate vulnerability); EXRA = real exchange rate vis-à-vis 5 major trading partners (1973=1); EXRFL = fluctuation in real exchange rate (moving 3-period averages); INVR = gross fixed capital formation as per cent of GDP; GOEXR = government expenditure as per cent of GDP; DEFR = government budget deficit (surplus) as per cent of GDP; Statistics: D.F. = degrees of freedom; t-statistics in parentheses; + (*) = significant at 90 (95) per cent level of confidence (two-tailed t-test); i.t. = variable skipped because of insufficient tolerance level.

Source: Euromoney Syndication Guide [var. issues]; BIS [var. issues]; IMF [a]; UNCTAD [1983]; OECD [b]; World Bank [var. issues]; own calculations.

Table A3 - Regression Results: Economic Performance and External Shock Indicators as Explaining Variables (all 19 countries, individual years 1976-1981)

| Dependent variable | Year | Const. | EXPOR | TOT | DSTR | INFLA | GRO | MSHD | R ² and F | D.F. |
|--------------------|------|--------|-------------------|-------------------|-------------------|-------------------|--------------------|-------------------|----------------------|------|
| SPRL | 1976 | 0.356 | -0.265 (-0.76) | 0.189 (1.56) | -0.983 (-0.77) | 0.061 (1.63) | 0.711 (0.77) | 0.690 (1.48) | 0.02 1.05 | 9 |
| | 1977 | 0.226 | -0.102 (-0.18) | i.t. (-) | 0.153 (0.66) | 0.269+ (1.79) | 0.490 (0.30) | i.t. (-) | 0.01 1.06 | 13 |
| | 1978 | 0.147 | -0.966 (-1.29) | 0.062 (0.26) | -0.083 (-0.35) | 0.491 (1.49) | 3.066 (1.41) | -1.627 (-1.19) | 0.02 1.05 | 12 |
| | 1979 | 0.070 | -0.862 (-1.02) | 0.125 (0.65) | -0.277 (-0.91) | 0.146 (0.51) | 1.419 (0.79) | -1.626 (-1.26) | -0.02 0.94 | 12 |
| | 1980 | -0.225 | 0.616 (0.68) | 0.030 (0.25) | -0.413 (-1.25) | 0.718 (1.44) | -2.682 (-1.04) | 1.545 (1.27) | -0.18 0.57 | 11 |
| | 1981 | -0.056 | -0.525 (-0.61) | 0.019 (0.18) | -0.154 (-0.64) | 0.207 (0.61) | -3.240+ (-1.80) | 1.340 (1.49) | 0.21 1.74 | 11 |
| ADDELENR | 1976 | 0.409 | i.t. (-) | 0.060 (0.37) | -0.218 (-1.15) | -0.049 (-0.87) | -0.590 (-0.45) | -0.514 (-0.79) | -0.03 0.90 | 10 |
| | 1977 | 0.390 | 0.673 (1.27) | -0.141 (-0.80) | -0.086 (-0.40) | i.t. (-) | 0.193 (0.11) | -0.855 (-0.98) | -0.16 0.52 | 12 |
| | 1978 | 0.138 | 0.601 (0.97) | 0.078 (0.41) | i.t. (-) | 0.048 (0.22) | 0.238 (0.14) | i.t. (-) | -0.15 0.40 | 14 |
| | 1979 | 0.115 | 0.052 (0.17) | -0.025 (-0.36) | 0.201+ (1.84) | 0.046 (0.44) | i.t. (-) | 0.274 (0.62) | 0.13 1.53 | 13 |
| | 1980 | 0.159 | 0.153 (0.54) | -0.045 (-1.18) | 0.041 (0.40) | 0.108 (0.69) | -1.291 (-1.59) | 0.289 (0.75) | 0.11 1.35 | 11 |
| | 1981 | 0.053 | -0.122 (-0.32) | 0.017 (0.37) | 0.115 (1.08) | 0.018 (0.12) | 0.287 (0.36) | -0.090 (-0.23) | -0.36 0.24 | 11 |

Variables: SPRL = spread (logarithmic form); ADDELENR = additional bank lending (net) as per cent of total bank debt; Const. = constant term; EXPOR = exports as per cent of GDP (as an indicator of openness of the economy); TOT = terms of trade (1973=1); DSTR = bank debt as per cent of total debt (as an indicator of debt structure and interest rate vulnerability); INFLA = rate of inflation (consumer prices); GRO = rate of growth in GDP per capita in constant prices; MSHD = change in world export market shares (moving 3-period averages). Statistics: D.F. = degrees of freedom; t-statistics in parentheses; + = significant at 90 per cent level of confidence (two-tailed t-test); i.t. = variable skipped because of insufficient tolerance level.

Source: Euromoney Syndication Guide [var. issues]; BIS [var. issues]; IMF [a]; UNCTAD [1983]; own calculations.

Table A4 - Regression Results: Domestic Policies and Impact of External Shocks on Current Account as Explaining Variables (all 19 countries, individual years 1976-1981)

| Dependent variable | Year | Const. | EXSHAR | EXRA | EXRFL | INVR | GOEXR | DEFR | R ² and F | D.F. |
|--------------------|------|--------|------------------|-------------------|------------------|-------------------|------------------|------------------|----------------------|------|
| SPRL | 1976 | 0.42 | -0.20 (-0.31) | -0.03 (-0.12) | 0.81 (1.70) | 0.28 (0.36) | 0.20 (0.27) | 1.23 (1.07) | -0.04 0.91 | 7 |
| | 1977 | 0.36 | 1.36 (1.19) | -0.15 (-0.42) | 0.77 (1.01) | 0.37 (0.36) | 0.91 (0.96) | 4.29+ (2.02) | 0.18 1.53 | 9 |
| | 1978 | -0.36 | 0.50 (0.41) | 0.41 (1.33) | 1.00 (0.87) | 0.75 (0.84) | -0.82 (-0.87) | 2.83 (1.40) | 0.17 1.55 | 10 |
| | 1979 | 1.26 | 0.84 (0.72) | -0.95* (-2.78) | -0.26 (-0.19) | -3.27* (-2.60) | 2.56* (2.57) | 5.03* (2.27) | 0.34 2.31 | 9 |
| | 1980 | 0.24 | 0.43 (0.24) | -0.20 (-0.38) | 1.97 (0.73) | -1.20 (-0.57) | 0.23 (0.14) | 2.43 (0.84) | -0.30 0.47 | 8 |
| | 1981 | 1.10 | i.t. (-) | -0.20 (-0.45) | 2.14 (1.37) | -4.31+ (-2.03) | -0.78 (-0.81) | i.t. (-) | 0.43 3.47 | 9 |
| | 1976 | -0.01 | -0.43 (-0.65) | i.t. (-) | -0.79 (-1.63) | -0.09 (-0.12) | 1.77* (2.69) | -0.63 (-0.54) | 0.56 4.27 | 8 |
| ADDELENR | 1977 | -0.31 | 0.57 (0.76) | 0.02 (0.10) | 0.10 (0.21) | 1.19+ (1.82) | 1.26* (2.51) | i.t. (-) | 0.46 3.58 | 10 |
| | 1978 | -0.16 | 1.24 (1.19) | -0.11 (-0.41) | i.t. (-) | 1.91* (2.46) | 0.97 (1.17) | 3.64+ (2.10) | 0.29 2.33 | 11 |
| | 1979 | 0.08 | 0.60 (0.76) | 0.05 (0.24) | 0.38 (0.42) | 0.35 (0.44) | i.t. (-) | 1.08 (0.88) | -0.21 0.49 | 10 |
| | 1980 | 0.14 | 0.53 (0.81) | -0.01 (-0.08) | 0.38 (0.39) | 0.19 (0.25) | -0.14 (-0.23) | 0.61 (0.57) | -0.31 0.44 | 8 |
| | 1981 | 0.08 | i.t. (-) | 0.18 (0.84) | -0.08 (-0.10) | -0.49 (-0.42) | -0.40 (-0.76) | -1.15 (-1.28) | -0.25 0.48 | 8 |

Variables: SPRL = spread (logarithmic form); ADDELENR = additional bank lending (net) as per cent of total bank debt; Const. = constant term; EXSHAR = cumulative current account impact of terms-of-trade effects, real world market demand effects and interest rate effects (for details of calculation, see Nunnenkamp [1985b, Ch. 5]) since 1974 as per cent of (cumulated) GDP; EXRA = real exchange rate vis-à-vis 5 major trading partners (1973=1); EXRFL = fluctuations in real exchange rate (moving 3-period averages); INVR = gross fixed capital formation as per cent of GDP; GOEXR = government expenditure as per cent of GDP; DEFR = government budget deficit (surplus) as per cent of GDP. Statistics: D.F. = degrees of freedom; t-statistics in parentheses; + (*) = significant at 90 (95) per cent level of confidence (two-tailed t-test); i.t. = variable skipped because of insufficient tolerance level.

Source: Euromoney Syndication Guide [var. issues]; BIS [var. issues]; IMF [a]; UNCTAD [1983]; OECD [b]; World Bank [var. issues]; own calculations.

References

- BANK FOR INTERNATIONAL SETTLEMENTS (BIS), International Banking Developments. Basel, var. issues.
- BANK OF ENGLAND, Quarterly Bulletin. London, var. issues.
- BENSTON, George J., "Deposit Insurance and Bank Failures". Federal Reserve Bank of Atlanta, Economic Review, Vol. 68, 1983, No. 3, pp. 4-17.
- BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM, Federal Financial Institutions Examination Council, Country Exposure Lending Survey. Washington, var. issues.
- BOGDANOWICZ-BINDERT, Christine A., "Debt: Beyond the Quick Fix". Third World Quarterly, Vol. 5, 1983, pp. 828-838.
- CAMPBELL, Burnham O., Petrodollar Recycling 1973-1980, Part II: Debt Problems and an Evaluation of Suggested Remedies. Asian Development Bank, Economic Staff Papers, 12, Manila 1982.
- CLINE, William R., International Debt and the Stability of the World Economy. Institute for International Economics, Washington 1983.
- CUDDY, John D.A., "Assessing Liquidity Requirements of Developing Countries, 1984-6". Third World Quarterly, Vol. 5, 1983, pp. 814-827.
- DEUTSCHE BUNDESBANK, Statistische Beihefte, Reihe 3. Frankfurt, var. issues.
- EATON, Jonathan, Mark GERSOVITZ, "Debt with Potential Repudiation: Theoretical and Empirical Analysis". The Review of Economic Studies, Vol. 48, 1981, pp. 289-309.
- EDWARDS, Sebastian, "LDC Foreign Borrowing and Default Risk: An Empirical Investigation, 1976-80". The American Economic Review, Vol. 74, 1984, pp. 726-734.
- EUROMONEY SYNDICATION GUIDE, London, var. issues.
- GOODMAN, Laurie S., "Syndicated Eurolending: Pricing and Practice". In: Abraham M. GEORGE, Ian M. GEDDY, International Finance Handbook, Vol. 1, New York 1983, Section 3.4, pp. 1-29.
- GRAUWE, Paul de, Michele FRATIANNI, The Political Economy of International Lending. Centrum voor Economische Studien, Katholieke Universiteit Leuven, International Economics Research Papers, 42, Leuven 1984.
- GROUP OF THIRTY [1982a], How Bankers See the World Financial Market. New York 1982.

GROUP OF THIRTY [1982b], *Risks in International Bank Lending*. New York 1982.

GUTTENTAG, Jack M., Richard HERRING, *The Lender-of-Last-Resort Function in an International Context*. Princeton University, *Essays in International Finance*, 151, Princeton 1983.

--, --, "Commercial Bank Lending to Developing Countries: From Over-lending to Underlending to Structural Reform". In: Gordon W. SMITH, John T. CUDDINGTON (Eds.), *International Debt and the Developing Countries: A World Bank Symposium*. The World Bank, Washington 1985, pp. 129-150.

INTERNATIONAL MONETARY FUND (IMF) [a], *International Financial Statistics*. Washington, var. issues.

-- [b], *World Economic Outlook*. Washington, var. issues.

JENSEN, Michael C., William H. MECKLING, "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure". *Journal of Financial Economics*, Vol. 3, 1976, No. 4, pp. 305-360.

JOHNSTON, R.B., *Banks' International Lending Decisions and the Determination of Spreads on Syndicated Medium-Term Euro-Credits*. Bank of England, *Discussion Papers*, 12, London 1980.

KRAFT, Joseph, *The Mexican Rescue*. Group of Thirty, New York 1984.

LESSARD, Donald, "North-South: The Implications for Multinational Banking". *Journal of Banking and Finance*, Vol. 7, 1983, No. 4, pp. 521-536.

NUNNENKAMP, Peter [1985a], *Bank Lending to Developing Countries and Possible Solutions to International Debt Problems*. Institute of World Economics, *Kiel Working Papers*, 225, 1985.

-- [1985b], *The International Debt Crisis of the Third World: Causes and Consequences for the World Economy*. Kiel 1985, unpubl.

-- [1985c], "Krisenanpassung in Ostasien und Lateinamerika". *Jahrbuch Dritte Welt* 1985, Munich 1985, pp. 87-100.

--, Georg JUNGE, *Die Kreditbeziehungen zwischen westlichen Geschäftsbanken und den Entwicklungsländern. Unternehmerisches oder gesellschaftliches Risiko? Forschungsberichte des Bundesministeriums für wirtschaftliche Zusammenarbeit*, 68, Cologne 1985.

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

(OECD) [a], *Debt Problems of Developing Countries*. Paris 1974.

-- [b], *External Debt of Developing Countries*. Paris, var. issues.

-- [c], *Financial Statistics*. Paris, var. issues.

- SACHS, Jeffrey, "LDC Debt in the 1980s: Risk and Reforms". In: Paul WACHTEL (Ed.), *Crises in the Economic and Financial Structure*. Lexington 1982, pp. 197-244.
- , *Theoretical Issues in International Borrowing*. National Bureau of Economic Research, Working Papers, 1189, Cambridge 1983.
- , Daniel COHEN, *LDC Borrowing with Default Risk*. National Bureau of Economic Research, Working Papers, 925, Cambridge 1982.
- SJAASTAD, Larry A., "International Debt Quagmire - to Whom Do We Owe It?". *The World Economy*, Vol. 6, 1983, pp. 305-324.
- UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT (UNCTAD), *Handbook of International Trade and Development Statistics*. New York 1983.
- VAUBEL, Roland, "The Moral Hazard of IMF Lending". *The World Economy*, Vol. 6, 1983, pp. 291-303.
- , "International Debt, Bank Failures, and the Money Supply: The Thirties and the Eighties". *The Cato Journal*, Vol. 4, 1984, No. 1, pp. 249-267.
- WALLICH, Henry C., "Central Banks as Regulators and Lenders of Last Resort in an International Context: A View from the United States". In: *Key Issues in International Banking*. The Federal Reserve Bank of Boston, Conference Series, 18, Boston 1977, pp. 91-98.
- WEINTRAUB, Robert E., *International Lending by US Banks: Practices, Problems, and Policies*. George Mason University, Fairfax 1983.
- WORLD BANK, *World Debt Tables*. Washington, var. issues.