Weck-Hannemann, Hannelore; Schneider, Friedrich

Working Paper

Determinants of foreign aid under alternative institutional arrangements

Diskussionsbeiträge - Serie II, No. 66

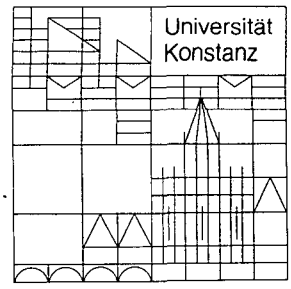
Provided in Cooperation with:
Department of Economics, University of Konstanz

Suggested Citation: Weck-Hannemann, Hannelore; Schneider, Friedrich (1988) : Determinants of foreign aid under alternative institutional arrangements, Diskussionsbeiträge - Serie II, No. 66, Universität Konstanz, Sonderforschungsbereich 178 - Internationalisierung der Wirtschaft, Konstanz

This Version is available at:
https://hdl.handle.net/10419/101660

Sonderforschungsbereich 178
„Internationalisierung der Wirtschaft“

Diskussionsbeiträge



Juristische
Fakultät

Fakultät für Wirtschafts-
wissenschaften und Statistik

Hannelore Weck-Hannemann
Friedrich Schneider

Determinants of Foreign Aid under Alternative Institutional Arrangements

---

Postfach 5560
D-7750 Konstanz

Serie II — Nr. 66
Juni 1988

D E T E R M I N A N T S O F F O R E I G N A I D
U N D E R A L T E R N A T I V E
I N S T I T U T I O N A L A R R A N G E M E N T S

Hannelore Weck-Hannemann
Friedrich Schneider *)

Serie II - Nr. 66

Juni 1988

*) Professor at the University of Linz, Department of Economics
University of Linz, A-4040 Linz-Auhof, Austria

Paper presented at the Annual Meeting of the European Public Choice Society, Bergen (Norway), Man 18 - 21, 1988

1. Introduction

There are numerous arguments why foreign aid should be given to less developed countries. Two views are dominating (White 1974): in the sixties the "optimists" (e. g. Chenery and Strout (1966), Fei and Ranis (1968)) hoped that with the assistance of the industrial states the Third World would be able to develop rather quickly so that the major economic problems (food production and provision, literacy, industrial development) could be solved. However, in the seventies and eighties, the "pessimists" (e. g. Bauer (1971, 1984), Griffin (1970), Griffin and Enos (1970) and, recently, Erler (1984)) gained more and more ground quering the positive relationship between foreign aid and growth.

These two basic views concerning the effects of foreign aid can also be found in the literature on the motives determining the aid giving behavior of developed countries towards the Third World. The 'recipient need model' is development-oriented and is based on a humanitarian and altruistic view: foreign aid is given to those underdeveloped countries which have the greatest need for it. On the other side, it is argued that foreign aid is provided by the industrial world without the latter taking any great interest in an independent development of the least developed countries. The 'donor interest model' states that foreign aid is given to those countries which either have a political or military alliance with the donor country, and/or the donor country wants to maintain its sphere of interest and/or intends to promote its own foreign trade.

The goal of this paper is to shed some light on economic foreign aid considering different institutional arrangements. The purpose is not to explain how effective foreign aid is. Instead, in analysing the actual distribution of development aid, we want to explain for what reasons official financial aid is given to Third World countries. Isolating the main determinants of economic foreign aid should provide us with some insights into the underlying motives. We will refer to the classical economic behavioral model which states that the actors behave rationally in the sense that they try to maximize their own utility subject to various economic, political and institutional constraints. We will focus on two institutional arrangements: (i) the distribution of bilateral

foreign aid as determined by the interaction of voters, national bureaucracy and government in a donor country; and (ii) the distribution of multilateral foreign aid as determined by the interaction of donor countries and international organisations.

Section 2 gives a short review of the pertinent literature. In Section 3, an attempt is made to develop a politico-economic model to explain the distribution of bilateral and multilateral foreign aid among developing countries. The main hypotheses are empirically tested in Section 4. Finally, a summary is provided in Section 5 and some (preliminary) conclusions are drawn.

2. Discussion of Bilateral and Multilateral Foreign Aid in Literature

Up to now, several studies have been made to analyse which countries receive bilateral foreign aid and which do not. Traditionally, a cross-country analysis is undertaken investigating how important standard economic factors like per capita income or the size of the population of recipient country are. The empirical studies (e.g. Davenport (1969), Henderson (1971) and Isenmann (1976)) focus on two biases in aid allocation: a country-size bias reflected by the tendency for per capita assistance to be inversely related to population size, and a middle-income bias stating that bilateral foreign aid increases with per catita GNP up to a relatively high level of income. A survey of this type of studies is given by Dowling and Hiemenz (1985). In their own empirical investigation, the authors find evidence for the country-size bias. However, the results do not confirm the middle-income bias. They suggest a low-income bias, i.e. low income countries receive more aid per capita than middle-income countries.

Further economic indicators as well as political variables have been included in several research studies, too. In an early paper on economic and military aid, Kato (1969) already includes several political and economic determinants reflecting strategic, cold-war, trade, economic development and domestic (donor) economy goals. Others like Wittkopf (1972), Dudley and Montmarquette (1976), McKinlay and Little (1977), McKinlay (1979) and Mosley (1981) also allow for additional economic and political factors,

i.e. they insert indicators for political importance, cold-war considerations, development and performance, economic and political stability, and democracy interests of the donor country. In analysing the aid distribution process, McKinlay and Little explicitly distinguised between two models, the recipient need and the donor interest model. In a recent study, Flemming (1985) structures the influential variables into three categories: he tries to explain bilateral foreign aid as a function of a recipient country's need, its trade dependency on, and political alignment toward, a particular donor.

The empirical results of the previous studies give a mixed picture. There are authors who find some evidence for the influence of economic and political factors; e.g. in their studies McKinlay and Little find bilateral aid being influenced by a variety of indicators. Altogether, they state a clear superiority of the donor interest model. However, contradictory findings are reported, too. The influence of economic and/or political variables on aid distribution appears to be negligible, e.g. economic performance and political stability (Henderson 1971, McKinlay and Little 1977, McKinlay 1978), associations with the communist bloc (McKinlay and Little 1977), and the intensity of economic ties (Kato 1969, Wittkopf 1972). Wittkopf (1973) deals with the recipient country's voting behavior in the United Nations and he concludes that ".. most foreign aid donors are prone to reward their enemies rather than their friends" (p. 878). Political alignment as used by Flemming (1985) also turns out not to be as conclusive as expected.

So far, all studies concentrate on the supply of foreign aid and do not consider the demand side. An exception is Weck-Hannemann and Frey (1987), who develop a model of supply and demand of foreign aid. They test their model with data for the United States over the years 1979 to 1985. They find very weak (empirical) evidence with respect to both, economic and political indicators. According to their findings U.S. bilateral foreign aid is influenced only by one political factor: a country belonging to the traditional sphere of influence of the United States cet. par. receives more economic foreign aid than other countries. The authors conclude that on the whole, the model seems to be inadequate able for accounting for the motives and processes determining the allocation of foreign aid to developing countries.

However, the previous years' allocation of aid is better suited for accounting for the current structure of foreign aid given by the U.S. (the same holds for Swiss foreign aid; see Weck-Hannemann 1987). The dominance of status quo distribution patterns is attributed to the incremental hypothesis (Wildavsky 1964) concentrating on domestic determinants. Like other categories of public expenditure, the allocation of foreign aid is seen to be dominated by administrative forces which resist structural changes (in order to minimize conflict) and which resort to the status quo as a general guideline. In a time-series analysis explaining the total amount of foreign aid given by individual donor counties, Mosley (1985) stresses the importance of the bureaucratic process and the dominating influence of the previous year's budget, too.

In contrast to the relatively large number of studies analysing the determinants of bilateral foreign aid, there are only a few studies focusing on the allocation of multilateral aid. Recently, Maizels and Nissanke (1984) try to explain both, bilateral and multilateral aid. For both types of aid they use a recipient need and a donor interest model. In the case of bilateral aid, their empirical findings support the donor interest approach, whereas multilateral aid is best explained by need variables. However, the study has to be criticized as the authors fail to account for the influence of international organisations itself. Especially, they do not have a theoretical model of the behavior of the (decisive) members of the international institutions allocating multilateral foreign aid.

Frey and Schneider (1986) explicitly try to eliminate this shortcoming. Their aim is to analyse the international lending activity by concentrating on the behavior of the World Bank. Four models of World Bank lending to developing countries are designed and empirically tested by pooled time-series and cross-section data. The analysis suggests that a model combining economic and political determinants performs best. Apart froms economic influences, political determinants such as "capitalist" climate or political instability are deemed important, as well as a recipient country's former status as a colony or dominion. This politico-economic model which explicitly captures the influence of a selfish bureaucracy is successfully been used to forecast the distribution of IBRD loans and IDA credits to developing countries.

This short review of the literature shows that there are several interesting attempts trying to explain bilateral or multilateral foreign aid. However, up to now no systematic approach has been found which considers the different institutional arrangements. To the authors' knowledge, the allocation process of bilateral and multilateral aid has not been modelled explicitly and simultaneously.

3. Modelling the Distribution of Bilateral and Multilateral Aid: A Politico-Economic Approach

The distribution of bilateral and multilateral aid is influenced by the national government, the bureaucracy (national and/or international), voters/taxpayers and interest groups. It is plausible to assume that some interest groups (e.g. church and non-profit organisations) and a part of the voters/taxpayers support foreign aid due to altruistic motives. For them, recipient need, i.e. arguments such as poverty or illiteracy, may be important factors for whether or not a developing country should get aid. But there may also be selfish reasons for supporting the poorest countries: people may want redistribution of income to poorer countries as an insurance so that they might receive help in crisis situations, too. In contrast, other interest groups (esp. the export-oriented industry) are not principally interested in humanitarian aid. Rather, they are concerned to promote trade and foreign direct investment. Their interest in aiding developing countries is that such aid may improve their exports to those countries, especially when the aid is formally or informally tied.

The national government has political, economic and military interests. On the one side, a successful development policy might increase the prestige of a government so that chances for re-election can be improved; on the other side, political and military influence in developing countries may be increased. The national bureaucracy tries to increase its influence and to minimize potential conflicts with voters/taxpayers, government and interest groups. The most effective way to achieve these goals is to pursue an incremental policy, i.e. marginally

increasing aid expenditure and restisting structural change. This incrementalist behavior does not only apply to public bureaucracies, but to the political process as a whole, which also tends to maintain established proportions and structures.

International organisations can also be regarded as bureaucracies in which the individual members (especially the top officials) further their own utility, subject to economic and political constraints (compare e.g. the models by Niskanen (1971) and Breton and Wintrobe (1982)). The top bureaucrats' utility consists in the prestige they enjoy within the reference group and the discretionary powers exerted vis-a-vis donor and recipient countries. Prestige can be gained and independence can be strengthened by 'performance excellence', i. e. by demonstrating that the organisation's tasks are handled competently; e.g. World Bank officials try to gain prestige within the banking community. In this case, performance excellence is shown by keeping to the commonly observed conservative standards for lending, endeavoring to avoid major blunders and risks. The most important constraint for World Bank officials is interference by the donor countries through their financial contributions, their voting rights or informal channels. The donor countries tend to intervene in favour of those developing countries which 'depend' on them, i.e. which are former colonies or dominions and/or trading partners.

In contrast to the World Bank, other international organisations like the United Nations agencies or the International Development Banks (e.g. the U.N. Development Programme, the World Food Programme, the African, Caribbean or Asian Development Banks) may try to gain prestige within the reference groups of other charitable organisations. Thus, they bring in line the allocation of foreign aid with recipients need and not with conservative lending standards, e.g. low risk of default. Conversely, a country with a high risk of default may be more reliant on external financial help than a more creditworthy country, thus attracting more foreign aid due to humanitarian motives. Furthermore, the top officials' discretionary power is determined by donor and recipient countries, as both exert an influence due to voting rights in these bodies. The financial constraint of getting funds - and therefore the influence of the donor countries - also may be weakened by logrolling in political affairs in the United Nations General Assembly.

The answer to what the main determinants dominating the allocation of bilateral and multilateral foreign aid are depends on the institutional arrangements under which the political decision-making process takes place. It is argued that bilateral aid is mainly influenced by the national government and the national bureaucracy. Voters and interest groups may exert less influence as foreign aid is a public good furthering free-riding behavior. For industrial interest groups it is more profitable to make efforts to directly get export promotion, e.g. in the form of guarantees. Therefore, it is assumed that the interests of the government and the national bureaucracy clearly dominate the allocation of bilateral aid. The government uses foreign aid as an instrument to strengthen its economic, political and military position. The national bureaucracy intends to steadily increase the budget for foreign aid without structural changes. The argument of 'recipient need' only is used to justify the amount and allocation of bilateral aid towards the voters.

Multilaterial aid is grouped into two categories: (i) those international organisations which are oriented towards the banking community will stress performance excellence using a conservative lending behavior, i.e. those countries get help which show a low risk of default. In addition, the interests of the major donor countries have to be allowed for, i.e. developing countries with political and/or economic ties to the donor countries (former colonies and dominions and the main trading partners) are given priority. (ii) The other international institutions (U.N. agencies and International Development Banks) show performance excellence by helping the most needy countries. However, constraints in the form of interference of the donor countries are less pronounced.

TABLE 1

In Table 1, the hypotheses about the bilateral and multilaterial lending behavior are summarized. The relative importance of the different arguments is shown, too. In the case of bilateral aid, the political, economic and military interests of donor governments and the influence of the national bureaucracy are expected

TABLE 1: The Determinants of Bilateral and Multilateral Aid: Theoretical Hypotheses.[1)]

Influences of	Bilateral Aid	Multilaterial Aid (World Bank)	Multilateral Aid (U.N. and other organisations)
Voters/taxpayers	+	n.s.	n.s.
National government			
- political interests	+++	++	+
- economic interests	+++	++	+
- military interests	+++	n.s.	n.s.
National bureaucracy	+++	n.s.	n.s.
International organisations:			
Performance excellence			
- within the banking community	n.s.	+++	---
- by need criteria	n.s.	---	+++

1) Explanations: '+' indicates that a positive influence is expected, i. e. the more positive this influence is the more aid is expected, ceteris paribus, the opposite holds for '-'.
In detail: '+' = weak positive influence
'++' = strong positive influence
'+++' = very strong positive influence
'---' = very strong negative influence
n.s. = no significant influence.

to be strongest. In the case of multilateral aid, performance excellence within the banking community is dominating for the World Bank, whereas for other organisations the need criteria are emphasized.

4. Empirical Investigation

In order to empirically test our hypotheses, we have used a cross-country regression analysis (five-year averages). The dependent and independent variables are operationalized as follows (more details and the sources of the data are given in the Appendix):

Three dependent variables are distinguised:

BADAC = Bilateral aid from DAC countries, commitments averaged over 1981-85, per capita, in US$;

MAIBRD = Multilateral aid of the World Bank, IBRD commitments, averaged over 1981-85, per capita, in US$;

MAUNO = Multilateral aid given by the U.N. agencies and other international development organisations, total (except IBRD credits), commitments averaged over 1981-85, per capita, in US$.

As independent variables we use the following indicators:

(a) The need of a developing country. Two alternative measures are used to show the "need" of a recipient country:

GNPC = GNP per capita, average over 1980-84, in 1000 US $;

POP = Population in billions, average over 1980-84;

and alternatively

*NEED = Population * (average GNP per capita / GNP per capita).*

(b) Political, military and economic interests of the donor (DAC) countries:

USCOL = Former dominions of the United States: dummy variable taking the value 1 if an LDC was dominated by the United States, otherwise 0;

UKCOL = Former colonies of the United Kingdom: dummy variable taking the value 1 if an LDC was a colony of the United Kingdom, otherwise 0;

FCOL = Former colonies of France: dummy variable taking the value 1 if an LDC was a colony of France, otherwise 0;

ARMSW = Arms transfers of the United States, the United Kingdom, France, Germany and Italy altogether to a developing country, per capita, average over 1978-82, in US$;

ARMSE = Arms transfers of the USSR to a developing country, per capita, average over 1978-82, in US$;

EXWEST= Exports of Western developed countries: exports (per capita) of all Western countries in a developing country compared to total exports (per capita) of Western countries to all developing countries, average over 1980-84;

EXEAST= Exports of Eastern planned economies: exports (per capita) of Eastern planned economies in a developing country compared to total exports (per capita) of Eastern planned economies to all developing countries, average over 1980-84.

(c) Performance excellence: The performance excellence within the international banking community is modelled by

IICR = Institutional investors credit rating index. The index varies between 0 (not creditworthy; poor performance) and 100 (very creditworthy, excellent performance) and is averaged over 1980-84. This index is built by questioning the world 100 top banking officials about the creditworthiness of a developing country using economic and political indicators as evaluation criteria.

A poor performance excellence (i.e. a low value of the IICR index) can also be used as NEED criteria showing that a country is not creditworthy among the international banking community and thus cet. par. needs more aid from other organisations.

(d) Influence of the bureaucracy in donor countries and in international organisations:

lagged dependent variable — *The influence of the bureaucracy in the donor countries and in the international organisations is measured by the influence of past years' credits/aid on current credit/aid given to a developing country.*

However, a positive and significant influence of the lagged dependent variable may be due to other explanations, too. E.g. the fact that projects often run over several years

also account for an impact of previous years' allocation of foreign aid. In our empirical examination this effect is weakened by focusing on committments rather than on actual disbursements of foreign aid.

After determining the dependent and independent variables we have the following three estimation equations:

$$(1)\quad BADAC_{i,t} = a_0 + a_1 GNPC_i + a_2 POP_i + a_3 USCOL_i + a_4 UKCOL_i + a_5 FCOL_i + a_6 ARMSW_i + a_7 ARMSE_i + a_8 EXWEST_i + a_9 EXEAST_i + a_{10} IICR_i + a_{11} BADAC_{i,t-1} + e_i$$

$$\text{with } a_1, a_2 < 0;\ a_3, a_4, a_5, a_6, a_8 > 0;\ a_7, a_9 < 0;\ a_{10} < 0;\ \text{and } a_{11} = 1.$$

$$(2)\quad MAIBRD_{i,t} = b_0 + b_1 GNPC_i + b_2 POP_i + b_3 USCOL_i + b_4 UKCOL_i + b_5 FCOL_i + b_6 ARMSW_i + b_7 ARMSE_i + b_8 EXWEST_i + b_9 EXEAST_i + b_{10} IICR_i + b_{11} MAIBRD_{i,t-1} + e_i$$

$$\text{with } b_1 > 0;\ b_2 < 0;\ b_3, b_4, b_5, b_8, b_{11} > 0;\ b_9 < 0;\ \text{and } b_{10} > 0.$$

$$(3)\quad MAUNO_{i,t} = c_0 + c_1 GNPC_i + c_2 POP_i + c_3 USCOL_i + c_4 UKCOL_i + c_5 FCOL_i + c_6 ARMSW_i + c_7 ARMSE_i + c_8 EXWEST_i + c_9 EXEAST_i + c_{10} IICR_i + c_{11} MAUNO_{i,t-1} + e_i$$

$$\text{with } c_1, c_2 < 0;\ c_3, c_4, c_5, c_8, c_{11} > 0;\ c_9 < 0;\ \text{and } c_{10} < 0.$$

For the independent variables $GNPC_i$ and POP_i we alternatively use the variable $NEED_i$, with the corresponding coefficients a'_1, b'_1, c'_1, and we expect

$$BADAC_{i,t}: \ a'_1 > 0;$$
$$MAIBRD_{i,t}: \ b'_1 < 0.$$
$$MAUNO_{i,t}: \ c'_1 > 0;$$

A limiting factor for our sample is the availability of data on risk-ratings, as there exist data for only 66 out of 93 developing countries. Therefore, the cross-country regression analysis only covers 47 developing countries in the case of bilateral aid,

37 developing countries receiving loans from the World Bank, and 49 developing countries are studied which get multilateral aid from U.N. agencies and other organisations (the data are shown in detail in the Appendix). The estimation results for bilateral aid (BADAC), for aid/credits from the World Bank (MAIBRD), and for total multilateral aid except IBRD commitments (MAUNO) are given in Tables 2, 3 and 4, respectively.

TABLES 2, 3 and 4

Let us first consider the results for bilateral aid (Table 2): the coefficient of determination (adjusted for the degrees of freedom) varies between 35 and 36 per cent. It increases to 65 per cent if the lagged dependent variable is included. This variable measuring the incremental influence of national bureaucracy is highly significant and demonstrates that 70 per cent of past years' aid is provided this year again. The coefficients of the variables indicating recipient need, i.e. GNP per capita and the NEED index, have the expected sign but they are not empirically significant. However, the IICR index, used as a need criterion, turns out to have a negative and statistically significant influence, thus indicating that developing countries with a high risk of default cet. par. get more bilateral aid from DAC countries than creditworthy countries. Considering the political, military and economic variables, the estimates show that former US dominions and former British colonies cet. par. receive more foreign aid than the other countries. The arms transfers of Eastern states have the expected negative influence and are also statistically significant if the lagged dependent variable is not included. The estimated coefficients of the other independent variables have the expected sign but they are not statistically significant. In general, the empirical results of the regression analysis for bilateral aid do not strongly confirm the hypothesis of a dominant influence of the governments' political, economic and military interests. However, the estimates reveal evidence for the incremental hypothesis of bureaucratic behavior as the status quo is strongly influenced by the aid distribution in the previous period. Compared with the empirical findings of other studies, our results seem quite satisfactory. At least two out of five hypotheses cannot be rejected. Furthermore it should be

TABLE 2: Cross-Country Analysis of Bilateral Foreign Aid from DAC Countries: OLS-Estimates of Bilateral Aid Commitments (per capita) to 46 Developing Countries, Average over the Period 1981-85.[1)]

Independent variables					
Constant term		26.01	25.95	8.69	8.62
GNP (in 1000, per capita)	GNP_{t-1}	-2.25 (-0.6)		-0.35 (-0.1)	
Population (in billions)	POP_{t-1}	-9.58	(-0.8)	0.44	(0.0)
NEED-index	$NEED_{t-1}$		-1.94 (-0.7)		0.13 (0.1)
Institutional Investors Credit Rating Index	$IICR_{t-1}$	-0.38* (-2.5)	-0.44** (-3.8)	-0.18 (-1.5)	-0.19* (-2.0)
Political dependency: Colonies or dominions					
- of the United States	USCOL	8.10(*) (1.7)	8.43(*) (1.8)	1.45 (0.4)	1.46 (0.4)
- of the United Kingdom	UKCOL	8.79 (1.6)	9.14(*) (1.7)	4.33 (1.0)	4.35 (1.1)
- of France	FCOL	3.49 (0.7)	2.65 (0.6)	4.96 (1.4)	4.83 (1.4)
Military dependency: Arms transfers (per capita)					
- from Western developed nations	$ARMSW_{t-1}$	0.07 (0.9)	0.07 (0.9)	-0.07 (-1.0)	-0.07 (-1.0)
- from the USSR	$ARMSE_{t-1}$	-0.13(*) (-1.9)	-0.14* (-2.2)	-0.07 (-1.4)	-0.07 (-1.5)
Economic dependency: Exports (share, per capita)					
- from Western developed nations	$EXWEST_{t-1}$	0.54 (1.4)	0.37 (1.4)	0.34 (1.2)	0.31 (1.6)
- from Eastern planned economies	$EXEAST_{t-1}$	0.13 (0.3)	-0.06 (-0.1)	0.06 (0.1)	0.03 (0.1)
Lagged dependent variable	$BADAC_{t-1}$			0.73** (5.5)	0.73** (5.6)
Test statistics	$\bar{R}^2$	34.9	36.4	64.2	65.2
	F-value	3.5	3.9	8.5	9.6
	d.f.	36	37	35	36

1) The independent variables are averaged over the period 1980-84. - The figures in parantheses below the estimated coefficients are the t-values; an asterisk in parantheses means that the variable has a significant influence at the 90% level of confidence; one asterisk indicates that the variable has a significant influence at the 95% level, and two asterisks at the 99% level of confidence (all two-tailed tests). $\bar{R}^2$ is the coefficient of determination corrected for the degrees of freedom (d.f.). The F-value indicates whether in total the independent variables have a significant impact on the dependent variable.

TABLE 3: Cross-Country Analysis of Multilateral Foreign Aid from the World Bank: OLS-Estimates of World Bank Credits (Commitments, per capita) to 36 Developing Countries, Average over the Period 1981-85.[1)]

Independent variables					
Constant term		10.25	10.32	7.63	7.22
GNP (in 1000, per capita)	GNP_{t-1}	5.41* (2.3)		4.62* (2.0)	
Population (in billions)	POP_{t-1}	-1.35 (-0.2)		0.20 (0.0)	
NEED-index	$NEED_{t-1}$		-1.97 (-1.2)		-1.38 (-0.9)
Institutional Investors Credit Rating Index	$IICR_{t-1}$	-0.16 (-1.5)	-0.05 (-0.5)	-0.13 (-1.4)	-0.03 (-0.4)
Political dependency: Colonies or dominions					
- of the United States	USCOL	-1.30 (-0.4)	-0.33 (-0.1)	-0.50 (-0.2)	0.40 (0.1)
- of the United Kingdom	UKCOL	-4.97 (-1.1)	-4.05 (-0.9)	-4.20 (-1.0)	-3.39 (-0.8)
- of France	FCOL	-5.41 (-1.5)	-2.54 (-0.6)	-6.88(*) (-1.9)	-4.87 (-1.4)
Military dependency: Arms transfers (per capita)					
- from Western developed nations	$ARMSW_{t-1}$	0.05 (1.1)	0.05 (0.9)	0.04 (1.0)	0.04 (0.7)
- from the USSR	$ARMSE_{t-1}$	-0.06 (-1.5)	-0.05 (-1.1)	-0.05 (-1.1)	-0.03 (-0.7)
Economic dependency: Exports (share, per capita)					
- from Western developed nations	$EXWEST_{t-1}$	0.77* (2.6)	1.08** (3.8)	0.52(*) (1.8)	0.72* (2.3)
- from Eastern planned economies	$EXEAST_{t-1}$	-0.18 (-0.6)	0.26 (1.0)	-0.30 (-1.0)	0.04 (0.1)
Lagged dependent variable	$MAIBRD_{t-1}$			0.40(*) (1.9)	0.48* (2.2)
Test statistics	$\bar{R}^2$	45.3	37.1	50.4	45.0
	F-value	4.0	3.4	4.3	4.0
	d.f.	26	27	25	26

[1)] See footnote (1), Table 2.

TABLE 4: Cross-Country Analysis of Multilateral Foreign Aid from U.N. Agencies and Other International Organisations (except the World Bank): OLS-Estimates of Aid Commitments (per capita) to 48 Developing Countries, Average over the Period 1981-85.[1)]

Independent variables					
Constant term		10.75	10.20	7.25	6.61
GNP (in 1000, per capita)	GNP_{t-1}	-2.04* (-2.1)		-1.78* (-2.2)	
Population (in billions)	POP_{t-1}	-2.18 (-0.6)		-2.12 (-0.7)	
NEED-index	$NEED_{t-1}$		0.20 (0.2)		0.14 (0.2)
Institutional Investors Credit Rating Index	$IICR_{t-1}$	-0.16** (-4.0)	-0.21** (-6.0)	-0.10* (-2.5)	-0.13** (-3.7)
Political dependency: Colonies or dominions					
- of the United States	USCOL	2.65(*) (1.9)	3.28* (2.4)	2.02(*) (1.7)	2.53* (2.1)
- of the United Kingdom	UKCOL	2.02 (1.3)	2.60 (1.6)	1.04 (0.7)	1.51 (1.0)
- of France	FCOL	2.67* (2.0)	2.32 (1.6)	1.48 (1.2)	1.12 (0.9)
Military dependency: Arms transfers (per capita)					
- from Western developed nations	$ARMSW_{t-1}$	0.01 (0.5)	-0.01 (-0.8)	0.01 (0.7)	-0.01 (-0.5)
- from the USSR	$ARMSE_{t-1}$	-0.01 (-0.6)	-0.02 (-0.9)	-0.00 (-0.2)	-0.01 (-0.5)
Economic dependency: Exports (share, per capita)					
- from Western developed nations	$EXWEST_{t-1}$	0.33** (3.1)	0.18* (2.2)	0.25* (2.7)	0.12(*) (1.7)
- from Eastern planned economies	$EXEAST_{t-1}$	0.02 (0.2)	-0.10 (-0.7)	0.01 (0.0)	-0.10 (-0.8)
Lagged dependent variable	$MAUNO_{t-1}$			0.25** (3.7)	0.27** (3.7)
Test statistics	$\bar{R}^2$	57.9	54.1	68.5	65.4
	F-value	7.6	7.3	10.4	10.1
	d.f.	38	39	37	38

[1)] See footnote (1), Table 2.

noted that the problem of outliers in the country sample has been properly taken into account in our regressions which has not been the case in other studies (e.g. Wittkopf 1972, Maizels and Nissanke 1984).

In the regression results discussed above we have excluded outliers like Israel, Costa Rica and Jamaica. On the average of the years 1981 to 1985, Israel in the mean cet. par. received about US$ 300 more bilateral aid from DAC countries than all other developing countries. Bilateral aid given to the other two countries exceeded the average by about US$ 60 per capita. In Table 2a, this effect is shown by the regression results in columns (b) and (c). There, Israel and the other outliers are included and modelled as dummy variables. However, if we exclude these outliers and do not explicitly model them with the help of dummy variables, we get quite different results which are shown in table 2a, column (a).

TABLE 2A

Contrary to former results, the GNP per capita now shows a coefficient with a positive and highly significant sign; i.e. a country in the Third World gets the less bilateral aid from DAC countries the poorer it is. As before, the IICR index has a negative and even stronger influence, indicating that risky countries get more foreign aid than creditworthy ones. The variables showing the importance of a developing country in political, military or economic respects now indicate quite different results, too. Political dependence, measured by the variables USCOL, UKCOL and FCOL, no longer has a remarkable influence and the sign of the estimated coefficients is even negative in two of three cases. On the other hand, arms transfers from both Western and Eastern countries have a highly significant effect statistically. As expected, arms transfers from Western countries strongly increase and arms transfers from the USSR decrease support by DAC countries. Exports from Eastern countries also reduce bilateral aid in a statistically significant way, whereas exports from Western states have an unexpectedly negative, but statistically insignificant influence on bilateral aid commitments.

TABLE 2A: Cross-Country Analysis of Bilateral Foreign Aid from DAC Countries: OLS-Estimates of Bilateral Aid Commitments (per capita) to 50 Developing Countries (incl. Israel, Costa Rica and Jamaica), Average over the Period 1981-85.[1)]

Independent variables		(a)	(b)	(c)
Constant term		40.31	31.33	26.02
GNP (in 1000, per capita)	GNP_{t-1}	20.84** (2.7)	1.48 (0.3)	-2.23 (-0.6)
Population (in billions)	POP_{t-1}	0.03 (1.2)	-5.75 (-0.3)	-9.56 (-0.8)
Institutional Investors Credit Rating Index	$IICR_{t-1}$	-1.31** (-4.0)	-0.58* (-2.6)	-0.38* (-2.6)
Political dependency: Colonies or dominions				
- of the United States	USCOL	-1.96 (-0.2)	9.52 (1.4)	8.15(*) (1.8)
- of the United Kingdom	UKCOL	7.07 (0.5)	6.97 (0.9)	8.80 (1.6)
- of France	FCOL	-7.10 (-0.6)	3.47 (0.5)	3.43 (0.7)
Military dependency: Arms transfers (per capita)				
- from Western developed nations	$ARMSW_{t-1}$	0.75** (5.4)	0.04 (0.3)	0.07 (0.9)
- from the USSR	$ARMSE_{t-1}$	-0.36* (-2.3)	-0.15 (-1.5)	-0.13* (-2.0)
Economic dependency: Exports (share, per capita)				
- from Western developed nations	$EXWEST_{t-1}$	-0.68 (-0.8)	0.36 (0.7)	0.33 (1.5)
- from Eastern planned economies	$EXEAST_{t-1}$	-2.35* (-2.0)	-0.29 (-0.4)	0.13 (0.3)
Dummy variables				
- Israel	ISRAEL		289.09** (8.2)	296.69** (12.5)
- Costa Rica and Jamaica	OUTLIERS3			59.21** (7.0)
Test statistics	$\bar{R}^2$	64.2	86.7	94.1
	F-value	9.8	29.9	65.7
	d.f.	39	38	37

1) See footnote (1), Table 2.

If we model Israel as a dummy variable (Table 2a, column b), the strong influence of the variables GNP per capita, arms transfers from Western countries and exports from Eastern states vanishes. Additionally modelling Costa Rica and Jamaica as outliers does not change the results in a significant way, except the variable of arms transfers from the USSR again gets a negative significant coefficient. To sum up these results, we have to conclude that if one does not undertake a careful econometrical test for outliers and does not explicitly take the latter into account one might obtain totally misleading results showing a strong influence of variables which are only due to one or two observations. This is the case e.g. in the studies by Wittkopf (1972) and Maizels and Nissanke (1985); their empirical findings, hence, are questionable. Maizels and Nissanke partly come out with a high coefficient of determination and a strong influence of the political and security interests variables on bilateral aid which is mainly due to the fact that Israel is not excluded from the sample.

In Table 3, the regression results for the multilateral aid of the World Bank are given. Without the lagged dependent variable the coefficient of determination amounts to 37 to 45 per cent of the variance; it increases to 45 to 50 per cent of the variance if the lagged dependent variable is included. The estimated coefficients show that multilateral aid by the World Bank is positively influenced by the GNP per capita, as expected. However, the IICR index, representing the performance excellence within the banking community, turns out not to be statistically different from zero and even has a negative (i.e. unexpected) sign. Surprisingly, almost all coefficients of former colonies have an unexpected (negative) sign. There is only one exception (U.S. dominions), but this influence is not statistically significant. As expected, arms transfers from Western and Eastern countries have a positive and negative coefficient, respectively. However, the impact is statistically negligible, too. However, World Bank lending is influenced by the exports from Western countries in a positive and statistically significant way, i.e. that developing countries absorbing a high share of Western exports are privileged with respect to the credits given by the World Bank. The allocation of multilateral aid in the current period is also influenced by past years' lending policy, although in one case the coefficient is only significant on a 90 per cent confidence level.

The estimates for the multilateral aid given by the U.N. agencies and other international organisations are shown in Table 4. As expected, multilateral aid is influenced by the GNP per capita in a negative and statistically significant way. The IICR index has a negative and significant influence too, which is consistent with the interpretation of this variable as a recipient need measure. Former U.S. dominions and French colonies attract additional multilateral aid - as expected - and a positive impact of exports from Western states is also confirmed. Pre-period commitments again have a positive and significant coefficient, referring to the incremental behavior of bureaucrats in the international organisations. The estimates show that actual commitments are determined by previous multilateral aid by about 25 per cent. Multilateral aid from the U.N. and other organisations is explained quite well by the model: as is shown by the coefficient of determination, two thirds of the variance are explained. The R^2 has a value of 54 to 58 per cent without lagged dependent variable, and it increases from 65 to 69 per cent if the lagged dependent variable is included.

Comparing the empirical results for the three different types of foreign aid, it turns out that the bureaucratic influence is strongest in the case of bilateral aid (with a coefficient of 0.73). It is followed by the one for aid by the World Bank (with a much lower coefficient of 0.48). And multilateral aid by U.N. agencies and other international organisations is influenced by previous commitments with a value of 0.27. Recipient need indicated by the GNP per capita plays no significant role in the case of bilateral aid, whereas World Bank credits and multilateral aid from the other international organisations are strongly influenced by this variable. Interestingly, as expected, the sign of the coefficient is positive in the regressions for the World Bank credits and it switches to negative in the regressions for multilateral aid by the other international development organisations. The IICR index also has a highly significant negative influence in the case of bilateral aid and multilateral aid from U.N. and other organisations. As mentioned above this corresponds with the assumption that this index can be interpreted as a need proxy, i.e. developing countries with a high risk of default are given more bilateral and multilateral aid for humanitarian reasons. In contrast to our theoretical expectations, the IICR index has no

statistical influence on the allocation of World Bank credits. Although this differs from our expectations, it is consistent in that the impact is less than in the case of bilateral aid and multilateral aid given by other organisations. Surprisingly, the variables measuring the influence of the government in political, military or economic respects have no statistically significant influence in several cases. Especially, there is no important impact on bilateral aid, whereas in the case of multilateral aid of U.N. and other organisations the political variables have some influence - which is directly opposed to our expectations. However, bilateral aid is determined to some extent by the variable of arms transfer variable from the USSR, whereas we cannot observe a significant influence of this variable in the regressions for both types of multilateral aid - as we originally expected. Considering the share of Western exports to developing countries, this variable has an influence on multilateral aid in total, but it does not account for the allocation of bilateral aid, which is again contrary to our theoretical expectation.

5. Summary and Preliminary Conclusions

This study focuses on the determinants of bilateral and multilateral aid given to developing countries. We try to model the allocation process of different types of foreign aid and derive testable hypotheses using the public choice framework. The decisive motives are identified by explicitly taking into account the (rational) behavior of the main decision makers (voters/taxpayers, interest groups, government, national bureaucracy, and the officials in international organisations) as well as the alternative institutional arrangements under which the allocation process takes place. The statistical analysis reveals that, at least to some extent, the determinants used account for the aid allocation of each bilateral aid by DAC countries, credits by the World Bank, and multilateral aid given by the U.N. agencies and other international organisations (except the World Bank). However, the comparative evaluation of the estimates concerning the determinants of the different types of foreign aid turns out to be less satisfactory. There is only limited evidence for our graded hypotheses. Nevertheless, the estimates confirm the incremental hypothesis that the bureaucrats' behavior has the strongest impact on

bilateral aid. Also, bilateral aid commitments are partly influenced by recipients' need and political and military aspects which also account for the allocation of multilateral aid by U.N. agencies and other international organisations. On the other hand, World Bank credits are not allocated out of humanitarian motives. Yet, performance excellence turns out not to be as important as is theoretically expected.

These results may point to the fact that the intent of this study is too pretentious - be it theoretically or with respect to the empirical investigation and data. It may therefore be concluded that the main emphasis should be placed on a more careful and detailed analysis of the interests, the incentives structure of and the constraints on the various actors in the international politico-economic process. However, we also have to think about other (better) ways of empirically testing our theoretical hypotheses in the context of international cross-country studies.

Literature

Bauer, Peter T.: Dissent on Development. Weidenfels and Nicolson, London, 1971.

Bauer, Peter T.: Reality and Rhetoric. Studies in the Economics of Development. Weidenfels and Nicolson, London, 1984.

Breton, Albert and Ronald S. Wintrobe:The Logic of Bureaucratic Conduct. Cambridge University Press, Cambridge, 1982.

Chenery, H.B. and A.M. Strout: Foreign Assistance and Economic Development. American Economic Review 56, 1966.

Davenport, Michael: The Allocation of Foreign Aid: A Cross-Section Study. The Indian Economic Journal 16/4-5, 1969, 458-475.

Dowling, J.M. and Ulrich Hiemenz: Biases in the Allocation of Foreign Aid: Some New Evidence. World Development 13/4, 1985, 535-541.

Dudley, Leonard and Claude Montmarquette: A Model of the Supply of Bilateral Foreign Aid. American Economic Review 66/1, 1976, 132-142.

Erler, Brigitte: Tödliche Hilfe. Dreisam, Freiburg/Br., 1984.

Fei, J.C.H. and Gustav Ranis: Foreign Assistance and Economic Development: Comment. American Economic Review 58, 1968, 897-912.

Flemming, Gary A.: The Role of Need, Political Alignment and Trade in the Distribution of Foreign Aid. Discussion paper IIVG/dp 85-104, Berlin, 1985.

Frey, Bruno S. and Friedrich Schneider: Competing Models of International Lending Activity. Journal of Development Economics 20, 1986, 225-245.

Griffin, K.B.: Foreign Capital, Domestic Savings and Economic Development. Oxford Bulletin of Economics and Statistics 32, 1970.

Griffin, K.B. and H.L. Enos: Foreign Assistance: Objectives and Consequences. Economic Development and Cultural Change 18, 1970, 313-327.

Henderson, P.D.: The Distribution of Official Development Assistance Commitments by Recipient Countries and by Sources. Oxford Bulletin of Economics and Statistics 33, 1971, 1-20.

Isenman, Paul: Biases in Aid Allocations Against Poorer and Larger Countries. World Development 4/8, 1976, 631-641.

Kato, Masakatsu: A Model of U.S. Foreign Aid Allocation: An Application of a Rational Decision-Making Scheme. In: Mueller, John E. (ed.): Approaches to Measurement in International Relations. Appleton Century Crafts, New York, 1969, 198-215.

Maizels, Alfred and Machiko K. Nissanke: Motivations for Aid to Developing Countries. World Development 12/9, 1984, 879-900.

McKinlay, R.D.: The Aid Relationship. A Foreign Policy Model and Interpretation of the Distributions of Official Bilateral Economic Aid of the Unites States, the United Kingdom, France, and Germany, 1960-1970. Comparative Political Studies 11/4, 1979, 411-463.

McKinlay, R.D. and R. Little: A Foreign Policy Model of U.S. Bilateral Aid Allocation. World Politics 30/1, 1977, 58-86.

Mosley, Paul: Models of the Aid Allocation Process: A Comment on McKInlay and Little. Political Studies 29, 1981, 245-253.

Mosley, Paul: Towards a Predictive Model of Overseas Aid Expenditures. Scottish Journal of Political Economy 32/1, 1985, 1-19.

Niskanen, William A.: Bureaucracy and Representative Government. Aldine and Atherton, Chicago/New York, 1971.

Weck-Hannemann, Hannelore: Politisch-ökonomische Bestimmungsgründe der Vergabe von Entwicklungshilfe: Eine empirische Untersuchung für die Schweiz. Schweizerische Zeitschrift für Volkswirtschaft und Statitsik 4, 1987, 501-529.

Weck-Hannemann, Hannelore and Bruno S. Frey: Was erklärt die Entwicklungshilfe? Jahrbücher für Nationalökonomie und Statistik 203/2, 1987, 101-122.

White, John: The Politics of Foreign Aid. Bodley Head, London, 1974.

Wildavsky, Aaron: The Politics of the Budgetary Process. Little, Brown and Company, Boston, 1964.

Wittkopf, Eugene R.: Western Bilateral Aid Allocations: A Comparative Study of Recipient State Attributes and Aid Received. Sage, Beverly Hills/London, 1972.

Wittkopf, Eugene R.: Foreign Aid and United Nations Votes: A Comparative Study. American Political Science Review 67, 1973, 868-888.

Definitions and Sources of Data:

BADAC	Bilateral aid from DAC countries, commitments averaged over 1981-85 per capita, in US$.	OECD, Geographical Distribution of Financial Flows to Developing Countries. Paris, 1984, 1986.
MAIBRD	Multilateral aid of the World Bank IBRD commitments, averaged over 1981-85, per capita, in US$.	World Bank Annual Reports, 1979 - 1985. Washington D.C., 1979 - 1985.
MAUNO	Multilateral aid given by the U.N. agencies and other international development organisations, total (except IBRD credits), commitments averaged over 1981-85, per capita, in US$.	OECD, Geographical Distribution of Financial Flows to Developing Countries. Paris, 1984, 1986.
GNPC	Gross Nationl Product, average over 1980-84, per capita, in 1000 US $.	OECD, Geographical Distribution of Financial Flows to Developing Countries. Paris, 1984, 1986.
POP	Population, average over 1980-84, in billions.	OECD, Geographical Distribution of Financial Flows to Developing Countries. Paris, 1984, 1986.
USCOL	Former dominions of the United States: Dummy variable taking the value 1 if a LDC was dominated by the United States, otherwise 0.	Banks, A. and W. Overstreet: Political Handbook of the World. McGraw Hill, New York, 1981.
UKCOL	Former colonies of the United Kingdom: Dummy variable taking the value 1 if a LDC was a colony of the United Kingdom, otherwise 0.	Banks, A. and W. Overstreet: Political Handbook of the World. McGraw Hill, New York, 1981.
FCOL	Former colonies of France: Dummy variable taking the value 1 if a LDC was a colony of France, otherwise 0.	Banks, A. and W. Overstreet: Political Handbook of the World. McGraw Hill, New York, 1981.
ARMSW	Arms transfers of the United States the United Kingdom, France, Germany and Italy altogether to a developing country, per capita, average over 1978-82, in US$.	US Arms Control and Disarmament Agency: World Military Expenditures and Arms Transfers 1972 - 1982. Washington D.C., 1982.
ARMSE	Arms transfers of the USSR to a developing country, per capita, average over 1978-82, in US$.	US Arms Control and Disarmament Agency: World Military Expenditures and Arms Transfers 1972 - 1982. Washington D.C., 1982.
EXWEST	Exports of western developed countries: Exports (per capita) of all western countries in a developing country compared to total exports (per capita) of western countries to all developing countries, average over 1980-84.	IMF: Direction of Trade Statistics, Yearbook 1986.
EXEAST	Exports of eastern planned economies: Exports (per capita) of eastern planned economies in a developing country compared to totalexports (per capita) of eastern planned economies to all developing countries, average over 1980-84.	IMF: Direction of Trade Statistics, Yearbook 1986.
IICR	Institutional investors credit rating index, averaged over 1980-84 (0 = IICR = 100).	Institutional Investors Magazine, 1980-1984.

Appendix

Bilateral Forein Aid		Multilateral Aid: World Bank Credits		Multilateral Aid from U.N. Agencies and Other Internat. Organisations	
(Commitments, per Capita, in US $, Average over the Period 1981-85)					
Algeria	7.082	Algeria	7.924	Algeria	0.833
Argentinia	1.045	Argentinia	5.230	Argentinia	1.694
Bangladesh	7.995	Brazil	9.696	Bangladesh	8.151
Brazil	1.850	Cameroon	8.796	Brazil	0.546
Cameroon	19.226	China	0.365	Cameroon	4.235
China	0.543	Colombia	15.505	China	0.338
Colombia	2.876	Congo	4.250	Colombia	1.092
Congo	37.635	Costa Rica	11.795	Congo	10.227
Costa Rica	78.277	Cyprus	31.940	Costa Rica	13.106
Cyprus	41.907	Dominican R.	2.272	Dominican R.	9.440
Dominican R.	21.851	Ecuador	7.425	Ecuador	8.287
Ecuador	8.685	Egypt	7.352	Egypt	2.999
Egypt	35.322	Honduras	6.541	El Salvador	6.546
El Salvador	50.993	India	1.759	Ethiopia	7.737
Ethiopia	5.770	Indonesia	6.427	Greece	0.261
Greece	1.510	Jamaica	36.486	Haiti	11.793
Haiti	18.205	Jordan	23.795	Honduras	12.855
Honduras	42.037	Kenya	4.525	India	1.780
India	1.741	Liberia	2.506	Indonesia	0.515
Indonesia	6.211	Malaysia	8.769	Iraq	0.478
Iraq	1.679	Mauritius	22.086	Israel	0.014
Israel	321.712	Mexico	10.390	Ivory Coast	2.944
Ivory Coast	15.579	Morroco	12.627	Jamaica	11.360
Jamaica	86.899	Pakistan	1.785	Jordan	10.218
Jordan	31.209	Panama	29.161	Kenya	6.845
Kenya	20.336	Peru	10.201	Liberia	17.091
Liberia	42.512	Philippines	7.581	Malaysia	1.220
Malaysia	15.221	Portugal	10.092	Mauritius	10.370
Mauritius	35.982	Senegal	1.854	Mexico	0.421
Mexico	2.144	Sri Lanka	1.537	Morroco	3.130
Morroco	17.511	Syria	1.453	Nicaragua	9.827
Nicaragua	30.000	Thailand	6.686	Pakistan	7.104
Pakistan	7.377	Turkey	15.246	Panama	14.190
Panama	16.866	Uruguay	12.141	Peru	2.879
Peru	13.405	Yogoslavia	16.267	Philippines	0.814
Philippines	7.935	Zambia	3.729	Portugal	1.598
Portugal	8.404	Zimbabwe	10.580	Senegal	16.161
Senegal	42.034			Singapore	1.318
Singapore	11.589			Sri Lanka	11.100
Sri Lanka	24.384			Sudan	12.500
Sudan	21.509			Syria	4.625
Syria	2.210			Tanzania	7.301
Tanzania	21.306			Thailand	1.459
Thailand	10.060			Turkey	0.754
Turkey	10.645			Uruguay	3.866
Uruguay	3.751			Yogoslavia	0.157
Yogoslavia	0.710			Zaire	5.579
Zaire	8.794			Zambia	17.732
Zambia	38.003			Zimbabwe	8.057
Zimbabwe	30.206				