DISTRIBUTIONS OF OFFICIAL DEVELOPMENT ASSISTANCE AMONG DEVELOPING COUNTRY AID RECIPIENTS

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I. INTRODUCTION

MUCH attention has been devoted to analyzing the inter-country allocation of Official Development Assistance (ODA) aid flows from bilateral donors and multilateral agencies to developing country recipients.[1] These studies have been conducted using calculated indices or regression techniques to address equity issues in development assistance programs, either by measuring the relative aid giving performance of individual donors, or by identifying factors which influence aid disbursement decisions. While foreign aid has a potential for being allocated to recipients based upon need considerations, previous studies argue donors do not strictly adhere to this objective when formulating foreign aid policies. Economic, political, or strategic interests of donors often dominate concerns of equity in aid disbursement decisions.

The present study uses Suits's index to measure and compare the degree of 1987 ODA aid concentration among recipients under bilateral aid schemes of Development Assistance Committee (DAC) donor countries and multilateral agencies. Several features of the present study represent improvements over earlier attempts to evaluate inter-country ODA disbursement patterns. First, the present study employs more recent data on ODA flows, which now permit an analysis of 119 recipients rather than the usual 85 or 90 recipients. Expanded country coverage will provide a more complete picture of the distribution of ODA across countries displaying widely different levels of economic well-being. It is now possible to undertake a more complete evaluation of the alleged "middle-income" bias in bilateral aid flows, since the additional recipients tend to occupy either the lower or higher ends of the per capita income scale.[2] Second, Suits's index is capable of using data pertaining to net ODA flows to provide an accurate picture of net aid contributions to recipients. Negative aid disbursements, common in some donor schemes, distort the interpretation of McGillivray's [5] per capita index, which is calculated using only positive net ODA contributions.[3] Finally,

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[1] See, for example, [2] [5] [4] [3] [7] [6].

[2] See [3] for a discussion of the "middle-income" bias.

[3] For example, negative net ODA disbursements, ranging up to −37 million dollars, were recorded for seven recipients under the U.S. aid program. All of these recipients lie in the seventh to tenth per capita income deciles. Ignoring negative net ODA flows would impart a downward bias to estimates of the degree of aid concentration among lower income recipients.

Suits's index summarizes net ODA flow distributions which are easily plotted to facilitate a visual evaluation of inter-country aid flow patterns.

II. FOREIGN AID

Foreign aid is intended to transfer resources, beyond those the recipient country can mobilize either domestically or through trade, for the promotion of economic development. Cassen identifies three major categories of foreign aid use [1, p. 45]. First, aid is used to relieve poverty by raising income and consumption of the poor through growth, by financing agricultural programs and rural development, by assisting the process of social change, and by providing basic public services: education, health, nutrition, and family planning. A second use of aid is to finance additional imports to provide resources in short supply, and to promote needed policy reforms. Finally, aid contributes to a country's long-term economic development by financing basic infrastructure, institution building, and capital investment. Aid has the potential for being allocated to recipients on the basis of need. However, motivations for providing foreign aid are often at odds with issues of equity in international development assistance, and there is no guarantee that the poorest countries will receive a fair share of foreign aid.

According to Ruttan [9], two broad sets of motives exist for providing bilateral foreign aid transfers that include a grant element. First, aid transfers are often justified on the basis of the economic and strategic self-interest of the donor. Here, aid is intended to promote exports from the donor to industries in the recipient that are subsidized by the assistance program, and to strengthen commercial and security ties between the donor and recipient. Commercial pressures in bilateral programs could be viewed as working against poorer recipients by directing aid toward those countries who have a greater potential for increasing purchases of exports from the donor. Strategic interests of the donor are independent of recipient need. The second motive for making aid available is based on equity issues. Donors might perceive an ethical responsibility to help poorer nations, either to compensate them for past injustices stemming from political oppression or economic exploitation, or to satisfy utilitarian objectives. While donors would argue that meeting emergency needs of the world's poorest people and fostering long-term economic development are central features of their aid programs, economic, political, and strategic interests often dominate issues of equity in bilateral aid disbursement decisions.

III. METHODOLOGY

Suits's index, a measure related to the familiar Lorenz curve and the Gini concentration ratio, is used to quantify concentration of ODA.[4] This approach involves ranking developing country aid recipients in ascending order according to per capita gross national product (GNP), marked off in deciles, plotting, for example, the accumulated percentage of ODA vertically against the accumulated percentage

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[4] Suits [12] discusses mathematical properties of the index.

Fig. 1. Lorenz Curves for ODA
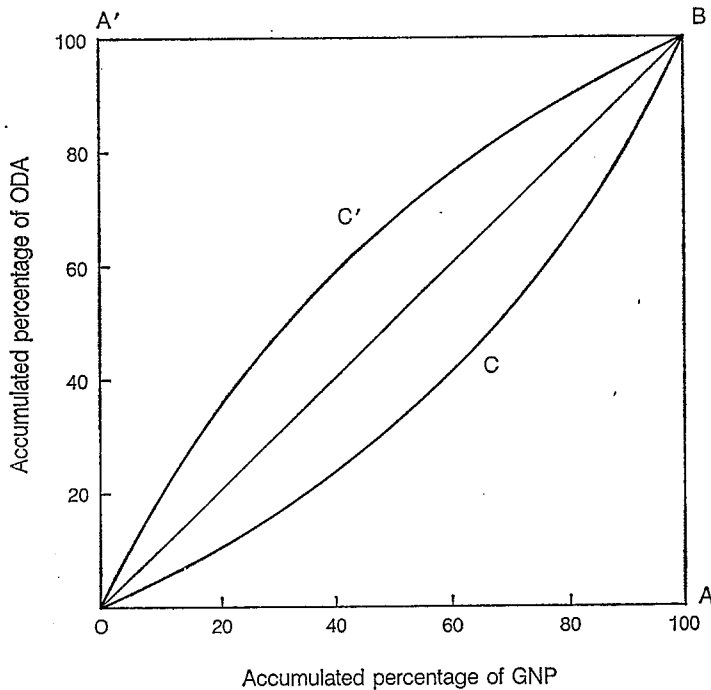
of total GNP on the horizontal axis to yield a curve like that illustrated in Figure 1. When ODA is distributed across all recipients in accordance with their shares in total GNP, the curve will follow diagonal OB. The curve would sag below the diagonal, following, for example, OCB if the accumulated percentage of ODA falls short of the accumulated percentage of total GNP. Here, differences in the distribution of ODA and GNP would imply a concentration of ODA among the higher income recipients. In the extreme case, where all ODA is directed toward the highest income recipient, the curve would follow OAB. When the curve extends above diagonal OB following, for example, $OC'B$, the accumulated percentage of ODA exceeds the accumulated percentage of total GNP. Here, ODA is concentrated among the low income recipients. In the extreme case, where the poorest recipient receives all of a donor's ODA, the Lorenz curve would follow $OA'B$.[5]

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[5] This can be compared with the traditional Lorenz curve, which would express the accumulated percentage of ODA plotted vertically against the accumulated percentage of recipients plotted horizontally. This Lorenz curve would be restricted to lie on one side of the diagonal, and the Gini ratio would range between 0 and 1.

The average degree of ODA concentration among recipients across the entire income scale is summarized by Suits's index (S). This index is defined in terms of K, the area of triangle OAB, and L, the area between the Lorenz curve and the horizontal axis, OA. When the index is expressed as

$$S = (K - L)/K = 1 - (L/K),$$

$S = 0$ when distributions of ODA and GNP shares coincide, S is positive when ODA is concentrated among the higher income recipients, and S is negative when ODA is concentrated among the lower income recipients. Values of the index can vary from $+1$, in the case where all ODA is directed toward the highest income recipient, to 0 when accumulated shares of ODA and GNP coincide, to -1 when all of a donor's ODA is concentrated in the lowest income recipient.

Suits's index serves as a summary measure of the average degree of ODA concentration among recipients. Like the familiar Gini ratio, Suits's index expresses vertical inequity, or differences in observed ODA shares across countries with different levels of economic well-being. The index is independent of which country occupies which position in the income distribution, thus it cannot be used as a basis for making normative value judgments concerning changes in economic well-being of individual aid recipients over time. Care should be exercised when interpreting Suits's index values for donors, since the index cannot be adjusted to account for country-specific recipient differences other than the GNP share and per capita GNP, such as population, size, location, resource endowments, and so forth. Despite these shortcomings, Suits's index provides useful information concerning the average degree of ODA concentration among recipients across the entire income scale.

Figures on 1987 bilateral net ODA disbursements to 119 developing country recipients from 18 DAC donors, associated recipient GNP and per capita GNP levels, and multilateral ODA aid flows are reported in publications of the Organization for Economic Co-operation and Development [8], and the World Bank [14]. ODA refers to financial resource flows to developing country recipients and various multilateral agencies from donors which are intended to enhance recipient welfare and promote economic development. These resource flows consist of soft bilateral loans and grants, and contributions to multilateral agencies such as the World Bank and regional development banks which eventually find their way to developing country recipients.[6]

IV. RESULTS

Table I presents distributions of 1987 ODA flows to developing country recipients, arranged according to income deciles. Results are presented in a manner which facilitates the calculation of Suits's index. Column 1 shows the accumulated percentage of recipients, marked off in deciles, with the accumulated percentage of total recipient GNP reported in column 2. The accumulated percentages of bilateral ODA flows from major DAC donors associated with the accumulated

[6] See [8] for a complete list of multilateral agencies included in the study.

TABLE I

CONCENTRATION OF NET ODA AID AMONG RECIPIENTS, 1987

(Accumulated percentage)

Decile (1)	GNP (2)	Net ODA						
		U.S. (3)	Japan (4)	West Germany (5)	France (6)	DAC (7)	Multilateral (8)	Total (9)
1	1.50	6.33	11.28	11.29	14.39	13.50	23.22	16.41
2	14.22	10.77	29.43	23.50	24.68	28.07	44.44	32.52
3	26.24	18.80	42.30	39.14	38.29	41.36	70.61	49.31
4	29.74	23.50	61.83	46.71	49.18	52.21	84.16	60.89
5	36.85	54.50	74.51	60.50	68.79	69.67	89.52	75.06
6	40.80	71.12	83.11	67.84	77.36	79.56	93.97	83.47
7	46.85	71.76	87.76	82.66	84.14	84.56	96.09	87.68
8	67.20	77.63	97.60	91.58	88.10	90.37	97.63	92.33
9	89.53	77.14	99.68	97.13	99.22	93.35	99.62	95.04
10	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Suits's Index

Belgium	−0.72	Netherlands	−0.37
Finland	−0.70	France	−0.37
Norway	−0.68	West Germany	−0.35
Ireland	−0.67	Australia	−0.34
Italy	−0.65	New Zealand	−0.33
Sweden	−0.65	United States	−0.10
United Kingdom	−0.64	Austria	+0.20
Denmark	−0.63		
Switzerland	−0.61	DAC bilateral	−0.38
Canada	−0.58	Multilateral	−0.64
Japan	−0.46	Total ODA, net	−0.45

Note: Based on 119 developing country aid recipients. Multilateral institutions include the World Bank, regional development banks, and other agencies listed in [8].

percentage of recipients are shown in columns 3 through 6. Columns 7 and 8 report the accumulated percentages of bilateral DAC aid and multilateral aid flows, respectively. The final column shows figures for total (bilateral plus multilateral) ODA flows. For example, the third line of the table shows the poorest 30 per cent of recipients accounted for 26.24 per cent of GNP, received 18.80 per cent of bilateral U.S. ODA, 42.30 per cent of Japan's bilateral ODA flows, and so forth. Figure 2 presents Lorenz curves for bilateral aid from the major DAC donors along with multilateral aid disbursements.

Results, presented in Table I, identify two distinct patterns of ODA disbursement from major donor nations and multilateral agencies to recipient countries. First, the U.S. ODA pattern displays a pronounced "middle-income" bias, which is particularly evident in Figure 2. Moving up the income scale, the accumulated percentage of ODA falls short of the accumulated percentage of recipient GNP for deciles two through four, exceeds the accumulated percentage of GNP for deciles five through eight, and reverses this pattern for the remaining deciles.

Fig. 2.   Lorenz Curves for ODA from Major DAC Donors and
Multilateral Agencies
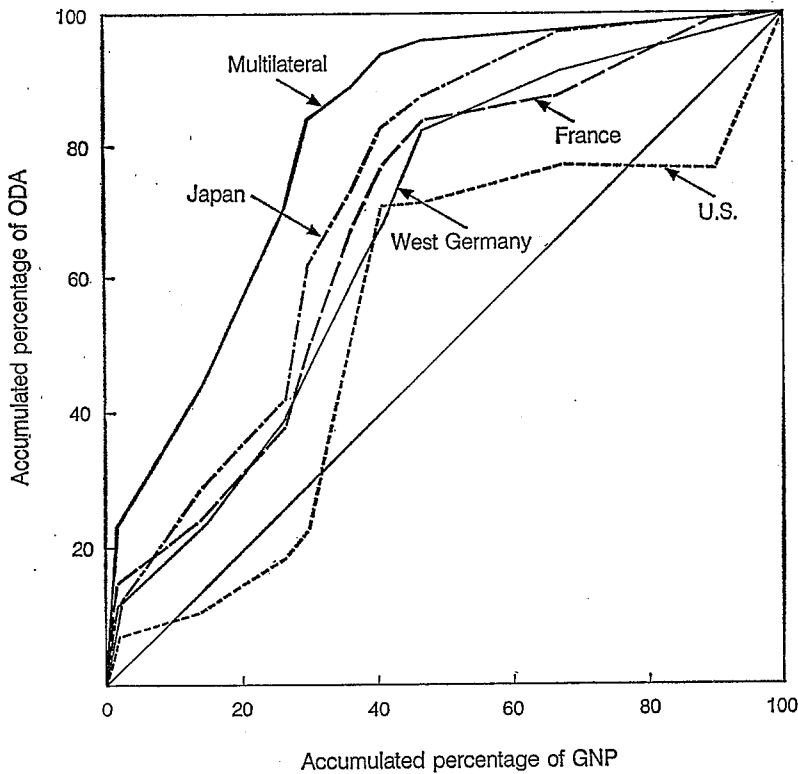
The accumulated percentages of ODA and GNP differ most for decile six. ODA disbursements from the United States are concentrated in this manner because many of the major recipients of U.S. aid fall in the middle income deciles. Top U.S. aid recipients, in order of importance, include Israel (tenth decile), Egypt (fifth decile), El Salvador (sixth decile), Philippines (fifth decile), and Pacific Island Trust Territory (sixth decile). Collectively, these countries receive 56 per cent of U.S. ODA. Israel and Egypt alone receive 42 per cent of U.S. ODA. This ODA disbursement pattern reflects the strong security thrust that characterizes the U.S. bilateral aid program.[7]

A second distribution pattern is common to the remaining major bilateral donors, DAC donors as a group, multilateral agencies, and hence to total ODA disbursements. Here, ODA disbursements are found to be much more concentrated among the lower income recipients than under the U.S. program. The accumulated percentage of ODA in each case is found to exceed the accumulated percentage of recipient GNP throughout the income scale. There is, however, evidence of a

[7] See [10, p. 351] [1, p. 271] [11].

slight "middle-income" bias in bilateral programs of Japan, West Germany, France, and all DAC donors, as well as in total ODA distributions. Maximum differences between accumulated percentages of ODA and GNP are recorded for Japan, DAC donors, and total ODA in decile six, and for West Germany and France in decile seven. Since this percentage difference reaches a maximum much earlier (fourth decile) for multilateral aid than for DAC donor bilateral aid (sixth decile), one can conclude the former tends to redress the "middle-income" bias inherent in bilateral flows.

Japan's top ODA recipients, in order of importance, are Indonesia (fourth decile), China (second decile), Philippines (fifth decile), Bangladesh (first decile), and India (third decile). These countries receive 46 per cent of Japan's ODA. India and China alone receive 26 per cent of Japan's ODA flows. This pattern of aid concentration confirms the importance of improving both commercial ties with Asia and regional strategic security as motives of Japan's aid policy.[8] ODA flow patterns of both Japan and West Germany are characterized by an absence of significant post-imperialist alliances and reflect strong economic and commercial orientations (see [1, p. 270]). Top West German recipients account for 29 per cent of ODA flows. Included here are Turkey (seventh decile), Egypt (fifth decile), Brazil (eighth decile), India (third decile), and Peru (seventh decile). ODA disbursements from France are primarily directed toward former colonies. Top aid recipients, accounting for 30 per cent of ODA flows, include Morocco and the Ivory Coast (fifth decile), Ethiopia (first decile), French Guiana (ninth decile), and the Congo (sixth decile).

The combined distribution of aid from eighteen DAC donors is concentrated among the lower income recipients, but less so than either multilateral or total (bilateral plus multilateral) aid. DAC donor aid flows are influenced heavily by the disbursement patterns of four major donors identified in Table I, which collectively contribute 69 per cent of DAC aid. Major recipients of DAC donor ODA flows include Egypt (fifth decile), Israel (tenth decile), Indonesia (fourth decile), India (third decile), and Bangladesh (first decile). Collectively, these countries receive 26 per cent of DAC aid disbursements.

The most important recipients of aid from multilateral agencies are India (third decile), Bangladesh (first decile), China (second decile), Pakistan (third decile), and Ethiopia (first decile). These countries account for 35 per cent of ODA from multilateral agencies. The major recipients account for 20 per cent of total ODA, and include India (third decile), Egypt (fifth decile), Bangladesh (first decile), China (second decile), and Israel (tenth decile).

Suits's index values, shown in Table I, summarize the overall degree of ODA concentration among recipients for aid policies of all DAC donors and multilateral agencies. Bilateral aid donors are ranked in descending order according to the overall equity exhibited by their aid schemes. Belgium's bilateral ODA shows the greatest tendency to be concentrated among the lower income recipients, while

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[8] Critics of this program point to Japan's heavy reliance on loans rather than grants, its narrow geographic focus, and the practice of tying much of its aid to purchases from the donor. See [13, p. 10–11].

the U.S. bilateral ODA flow is the least concentrated among the poorer recipients. Austria's ODA disbursement pattern shows a tendency to be concentrated among the higher income recipients, as reflected in the positive value for Suits's index.

Multilateral ODA disbursements show a more equitable distribution of ODA to recipients than any of the four major bilateral donors identified in Table I. While seven bilateral ODA schemes tend to concentrate aid among the lower income recipients at least as well as that accomplished by multilateral agencies, total bilateral DAC donor aid flows are considerably less concentrated among the poorer recipients than is multilateral aid. Multilateral agencies are better suited to direct aid to the poorer recipients on the basis of need than are major bilateral donors whose aid programs are heavily influenced by their own economic and strategic self-interests.

V. CONCLUSIONS

This study measures and compares the degree of ODA aid concentration among recipients under schemes offered by eighteen DAC donors and multilateral agencies. Only the U.S. bilateral ODA pattern is found to display a pronounced "middle-income" bias. ODA flows of individual DAC donors, with the exception of Austria, and collective ODA disbursements from DAC donors are much more concentrated among the poorer recipients than are ODA flows under the bilateral U.S. aid scheme. This does not mean that issues of equity dominate any of the bilateral aid disbursement programs. Economic and strategic self-interests of individual donors influence the allocation of bilateral aid. ODA flows from multilateral agencies are found to be distributed in a more equitable manner than bilateral ODA disbursements from major DAC donors. This finding suggests multilateral aid should be assigned a greater role in economic development assistance.

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