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Multilateral Aid Agencies
and Strategic Donor Behaviour

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Abstract

The paper builds on recent empirical evidence on the importance of strategic donor behaviour in aid allocation in order to develop a theoretical model where donor pressure on a recipient for influencing the aid disbursement of a multilateral institution is endogenously determined. Our game-theoretic, multi-agent model with one aid recipient, two bilateral donors and one multilateral institution illustrates the advantage of putting pressure on the recipient as an instrument for foreign policy, as seen from the mighty donor's point of view. The model shows how this strategic donor behaviour is damaging to the aid-recipient; we also show that other donors not sharing foreign policy goals similar to the strategic, influential donors will, in fact, reduce their aid contributions to the multilateral organizations. This may obviously have profound implications for the volume of total aid flows and may crucially undermine current efforts to substantially increase ODA to meet the Millennium Development Goals by 2015. Our paper also contributes to the common debate on foreign aid by presenting a rigorous model that explains the coexistence of both multilateral aid organizations and bilateral aid programmes.

Keywords: foreign aid, strategic donor behaviour, multilateral aid agencies

JEL classification: F35

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1   Introduction

Foreign aid is a topic that has attracted much attention in academic and policy circles for more than half a century. In the early 1990s, however, following the collapse of the former Soviet Union and the end of the cold war, many observers predicted the 'end of history' for aid on the assumption that the crucial motive for aid-giving that dominated the pre-1990 period, namely political and strategic reasons of the donor community, would lose its importance. Nevertheless, recent years have witnessed a revived interest in aid issues and at the same time numerous studies on aid have emerged, some of them quite influential in policy circles. The dramatic change in the aid arena was mainly the outcome of a number of recent important events that pushed the public discussion on aid in new interesting directions.

Initially, the OECD-DAC report entitled *Shaping the 21st Century: The Contribution of Development Cooperation* in 1996 was quite instrumental in generating the new momentum on aid. By setting new priorities for aid, it marked the increasingly widespread adoption of the International Development Targets. Particularly the commitment to halve absolute poverty by 2015 became an important element in the rethinking of development aid, and thus laid the foundations later on for the creation of the Millennium Development Goals (MDGs). Another landmark in the aid scene in recent years was the World Bank study *Assessing Aid* published in 1998. Even though many of the findings remain controversial, this report seems to have been very influential in shaping both the policy debate and the research focus since the publication of *Does Aid Work?*, the other major work on aid by Cassen and Associates originally published in 1986. One main research contribution to *Assessing Aid*, Burnside and Dollar 1997,[1] mobilized a new and still growing literature on the importance of good policies for aid effectiveness. Indeed, the focus of much of the recent aid effectiveness literature is on the aid-policy-growth nexus while the key conclusion of the World Bank study on this relationship is that 'aid increases economic growth in good policy environments'. The above conclusion has been at the heart of the research and policy debate in recent years. It is to be noted, however, that even though *Assessing Aid* remains a very important contribution to the aid literature, its policy guidelines should be treated with scepticism, given that the Burnside-Dollar 'approach' (Burnside and Dollar 1997, 2000) to aid effectiveness is statistically delicate, and that it has been contradicted by other recent studies (e.g., Hansen and Tarp 2000, 2001; Guillaumont and Chauvet 2001; Easterly, Levine and Roodman 2004; Antipin and Mavrotas 2006), and cannot be seen as robust (Tarp 2000; Lensink and White 2000; and Beynon 2002, 2003).[2]

The UN Conference on Financing for Development held in Monterrey in March 2002 and the widespread consensus among bilateral donors and multilateral agencies regarding the need to meet the Millennium Development Goals (MDGs) by 2015 was also a major step forward in revamping the aid agenda. There is now widespread agreement that more aid is required to meet the MDGs but that at the same time

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[1]   A modified version was published in 2000 in the *American Economic Review* (Burnside and Dollar 2000).

[2]   Beynon (2002, 2003); Dalgaard, Hansen and Tarp (2004); Collier and Dollar (2004) and Addison Mavrotas and McGillivray (2005a, 2005b) provide recent assessments of the aid effectiveness literature.

improving aid effectiveness dramatically, mobilizing domestic resources and exploring new sources of development finance beyond aid, are all crucial factors.[3]

More recently, a number of altruistic initiatives from bilateral donors have emerged. They include (i) the widely discussed British proposal on the International Finance Facility (IFF) aiming to 'frontload' aid through a securitization process in international capital markets so that MDGs can be attained;[4] (ii) the United States' *Millennium Challenge Account*;[5] which will grant aid to those recipients that democratize their society and adhere to sound economic policies; (iii) the recent French initiative to increase French aid to Sub-Saharan Africa by 50 per cent in the next five years in order to accelerate progress with regard to the MDGs; (iv) the recently released UN Millennium Project Report (2005) and the Report of the Commission for Africa (2005) which call for a new aid policy with much larger aid donations in the aftermath of the Monterrey consensus. Finally, the *Declaration on Aid Harmonization* by aid donors in Rome in February 2003 and the *Paris Declaration on Aid Effectiveness* in February 2005 emphasized that donors should move rapidly towards aid coordination to accelerate progress for aid effectiveness and MDG attainment.

Taken together, these altruistic initiatives seem to indicate that strategic behaviour whereby donors use their influence in foreign aid relations to achieve their own goals has declined. However, as we emphasize in this paper, and as argued by Burnell (2004), issues related to strategic donor behaviour and *realpolitik* have not lost importance in recent years. Moreover, strategic non-altruistic donor behaviour can be profitable and can thus be expected to continue to dominate the aid allocation agenda in the near future if no safeguard is set in place. One example of strategic donor behaviour that has been curbed is tied aid, which was a profitable way for donors to favour own enterprises in giving aid contracts. Nevertheless, OECD-DAC has done an important job in recent years to prevent such inefficient behaviour. In this paper, we consider *inter alia* strategic donor behaviour in the new context of foreign aid, predominantly based on the outcome of recent events in the aid arena.

Two additional points underlining the importance of studying strategic donor behaviour seem to emerge from the centrality of aid effectiveness. First, the degree of aid effectiveness as perceived by a donor may impact on the amount this donor is willing to give since low effectiveness implies wasted aid. However, as we highlight in this paper, aid allocation by strategic donors may be judged as an ineffective allocation by altruistic donors. Hence, strategic donor behaviour may reduce foreign aid disbursement. Second, strategic behaviour may reduce aid effectiveness as measured by the contribution of aid targeted for achieving the MDGs. Under the plausible assumption that it will not be an easy task to raise the additional aid flows needed for the MDGs, significant improvement in the effectiveness of current (and future) aid seems vital. However, redirecting aid to areas of strategic importance for some donors may undermine current efforts to achieve the MDGs. Even without strategic donor behaviour, a substantial

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3   See Atkinson (2004) for a critical assessment of new sources of finance and innovative proposals currently under discussion in international fora.

4   See Mavrotas (2004a) and Mosley (2004) for a detailed discussion and Lin and Mavrotas (2004) for a simulation exercise based on a theoretical model on IFF.

5   See Clemens and Radelet (2003) for a critical assessment of this initiative.

amount of fresh aid needs to be raised and improvements on the aid effectiveness front are necessary in order to achieve the MDGs.[6]

This challenge is confirmed by recent provisional figures for official development aid (ODA) from the OECD-DAC (DAC April 2005). The data suggest that aid levels continued to recover in recent years from the sharp decline during the period 1992-97, with aid increasing to US$78.6 billion in 2004 from US$72.4 billion in 2003; an increase in real terms of 4.6 per cent.[7] It is important to bear in mind, however, that total ODA is still well below the amount needed to achieve the MDGs by 2015. Nevertheless, in international relations self-interest and strategic donor objectives continue to play a central role and this may undermine efforts to support moral arguments in favour of the larger aid programmes needed to attain the MDGs. Furthermore, some donors (particularly Nordic countries) with an excellent record of aid-giving in terms of high ODA/GNP ratios may feel that they should not be expected to further increase their aid share in GNP until donors providing small contributions to the overall aid budget bear a fairer share of the burden (Lankester 2004).

Looking back, donors of bilateral foreign aid have been motivated by their own strategic foreign policy goals since the beginning of the modern era of international assistance (Kanbur 2003). The Marshall Plan from the United States to Europe, and the cold war strategy of giving aid to countries that supported the 'right' side in the conflict, are both illustrative examples of the frequent inseparability of foreign aid and foreign policies. Recent research, elaborated in section 2, confirms that foreign policy goals of the donor continue to be the most important motive for giving aid, and it is frequently noted that donors also try to influence multilateral institutions to support their foreign policies (Alesina and Dollar 2000; Burnside and Dollar 2000; Neumayer 2003a, 2003b; Gates and Hoeffler 2004). Of particular interest are the findings in the econometric study of Alesina and Dollar (2000) that the pattern of aid-giving is dictated much more by political and strategic considerations than economic needs or policy performance of the recipients. France, Great Britain and Japan are found to favour their former colonies in the dispersion of aid, and that they, together with the US and Germany, allocate more aid to recipients that vote in unison with them in the UN.[8] This pattern of donors promoting their own interests is mirrored in Arab countries' aid disbursement patterns: more Arab aid flows to countries that do not maintain diplomatic relations with Israel as well as to those with similar voting patterns in the UN General Assembly as Saudi Arabia (Neumayer 2003a).

Against this background, it is rather surprising that our paper is one of the first attempts to model formally how this type of strategic behaviour may affect the multilateral

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6   It is notable, however, that although there is now more consensus regarding the positive overall impact of aid on growth, there is no widespread agreement concerning the extent to which aid can in fact be effective in promoting growth in poor policy environments, or on what constitutes an effective, pro-poor growth policy, beyond the achievement of basic macroeconomic stability and the avoidance of gross price distortions (Mavrotas 2004b).

7   The reasons for the sharp decline in total ODA during 1992-97 are well known and include a sharp reduction of US aid following the collapse of the former Soviet Union, economic deterioration in Japan and Germany (mostly related to the costs of reunification in the latter case) and preoccupation of the EU with the enlargement issue (see Burnell 2004 for a discussion).

8   See also Berthélemy and Tichit (2004) for similar results.

system in general, and the efficiency of the multilateral institutions as vehicles for poverty reduction and development in particular.[9] In this paper we examine how this pattern of aid-giving affects the multilateral system and its efforts towards poverty reduction. Our paper also contributes to the common debate on foreign aid by presenting a rigorous model that explains the coexistence of both multilateral aid organizations and bilateral aid programmes.[10]

The theoretical literature on foreign aid has generally ignored the multilateral system, so there is not only a need for investigating the impact of strategic behaviour on these institutions, but also a need to model why overlapping bilateral and multilateral aid programmes and institutions exist (Kanbur 2003). Even if the question of the balance between bilateral and multilateral aid is almost as old as aid itself, we are still asking ourselves about the nature of the game between recipients and donors in these settings.[11] It is quite puzzling to observe that similar aid institutions perform almost identical tasks in similar countries. Why do bilateral donors give aid to the World Bank at the same time as they fund the regional development banks, when both the World Bank and these regional banks give concessional loans to the same countries? Furthermore, one can also find donors that give bilateral loans to the same countries. Thus, a donor willing to give financial support, say, to Namibia can end up dispersing the loans through three channels: bilaterally, through the African Development Bank and through the World Bank.

There is little doubt that this pattern may be explained by political economy considerations in the donor country, including donor interest in achieving the foreign policy goals of their country. However, the interesting questions that arise are whether this is optimal from the point of view of the recipient, and moreover, whether it is optimal in a development perspective when we take into account other donors' responses to these patterns. We show that other donors not sharing the foreign policy goals of the strategic, influential donors will, in fact, reduce their contributions to the multilateral organizations. Our paper presents a model where donor pressure on a recipient to influence the aid disbursement of a multilateral institution is endogenously determined. Our game-theoretic, multi-agent model with one aid recipient, two bilateral donors and one multilateral institution illustrates the advantage, as perceived by the mighty donor, of putting pressure on the recipient as a tool for foreign policy. Similarly, the paper shows how this strategic behaviour is damaging for the developing countries and how it causes other donors to reduce their contributions to multilateral institutions to levels less than what would be optimal without such behaviour. It is important to remember that most models of foreign aid allocation are dyadic, which means that all the agents interact pairwise. Our model is triadic, which implies that an agent i (donor) does not only take account of its relationship with agent j (multilateral), but also of its own and agent j's relationship with a third agent k (recipient) (Basu 2000). Our model also sheds light on the question of why different donors' development operations seem to overlap in many countries, a practice that raises the issue of possible duplication of effort and unhealthy competition for 'development business' (Kanbur 2004).

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[9] See also Villanger (2004a, 2004b, 2006) and Torsvik (2005).

[10] See Kanbur, Sandler and Morrison (1999) and Kanbur (2003) for more on this debate.

[11] See also Murshed and Sen (1995); Azam and Laffont (2003) and Murshed (2005).

Finally the model will try to determine why bilateral donors have programmes in poor countries simultaneously as they are financing a multilateral organization, thus supporting overlapping programmes in the same recipient of aid. The economies of scale and the economies of scope associated with pooling recourses in multilaterals are offset for an individual donor by the costs of having the multilateral institution's policies being influenced in another direction (by an influential donor) than what is optimal from this particular donor's point of view. Thus when donor preferences differ from the multilateral with regards to policy, it is worthwhile for some donors to diversify between own and multilateral projects. Moreover, when the economies of scale are exhausted in a multilateral institution, donors with more aid to disburse will fund bilateral aid institutions.

The remainder of the paper is organized as follows: section 2 discusses the empirical evidence regarding the impact of strategic donor behaviour on the aid allocation process by focusing on recent key studies of relevance to our theoretical model presented in section 3. Section 4 concludes the paper.

2 Aid and strategic donor behaviour: recent empirical evidence

In this section we briefly refer to the literature on aid allocation, focusing primarily on recent empirical studies on this front. Of particular interest are recent empirical studies that tried to highlight the centrality of strategic donor behaviour in the aid allocation process. Thus, we discuss in some detail the recent studies by Alesina and Dollar (2000) and Gates and Hoeffler (2004) which are particularly relevant to our paper since they both provide useful insights on how donor's strategic behaviour may affect the overall aid architecture, and which may have profound implications for aid-recipient countries and the attainment of the MDGs. Furthermore, we focus on these two studies because they deal with such methodological caveats as the endogeneity of aid, and because we model the preferences of the agents/players in a rather strict accordance with their findings.

Issues related to aid allocation have received considerable attention in the relevant literature. Earlier influential studies include McKinley and Little (1978, 1979); Mosley (1981); Maizels and Nissanke (1984) and Trumbull and Wall (1994) among others. Cassen (1994) finds that the United States targets more than one-third of its total assistance to Egypt and Israel for political reasons. The same author also shows that many of the recipients that receive the most generous allocation of aid per capita (Israel, Jordan, Egypt and Poland) do so because of their strategic importance. More recent and widely-cited studies include *inter alia* Schraeder, Hook and Taylor (1998); Lundborg (1998); Alesina and Dollar (2000) and Neumayer (2003a, 2003b).[12]

The study by Alesina and Dollar (2000) has been widely recognized in recent years as one of the most influential works in this field. The authors use OECD-DAC data on aid covering the period 1970-94 (5-year periods) and spanning a wide range of donors (12 donors in total, with the Nordic countries examined as a group). The study in particular tries to re-examine the role of donor strategic interests in the aid allocation pattern over

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[12] See White (2004) on recent trends in aid allocation.

the above-mentioned period by constructing a variable that reflects UN voting patterns. Results at the aggregate level seem to suggest that political and strategic considerations are particularly important as determinants of the aid allocation process during the period considered, as compared to policies and institutions in aid recipients. The above finding remains robust when other indicators of poverty in addition to initial income are tried by the authors along with further sensitivity checks. Of particular interest, however, to strategic donor behaviour are the donor-by-donor empirical results reported by these authors. The study finds evidence which clearly documents distinct differences among donors. Nordic countries (considered as a group) allocate aid to the poorest countries and, at the same time, reward sound policies and institutions in aid-recipients—a pattern which, according to the authors, is similar to the United States except that in the case of the US, aid is allocated to UN friends and Middle East allies. On the other hand, the aid allocation pattern of France and Japan is crucially affected by former colonial ties and UN voting behaviour rather than income levels (and policies) in aid recipients. The variable 'UN friends' used by these authors is quite crucial in steering these results. In particular, the high correlation of the UN friends variable and aid flows also introduces the issue of aid endogeneity. Aid, on the one hand, could be used to 'buy' political support in the UN, i.e., aid encourages UN votes, while on the other hand, UN votes reflect political alliances which, in turn, affect the aid allocation process, i.e., UN voting behaviour induces aid. Alesina and Dollar (2000: 46) conclude that:

> … donors favour their 'friends' in disbursing aid, and an observable manifestation of 'friendship' is the pattern of UN votes … this would then imply that an exogenous change in UN votes would indicate a change in the pattern of geopolitical alliances that would bring about a change in aid pattern.

The above finding clearly confirms *a priori* expectations (as well as the findings of earlier studies) regarding the impact of strategic donor behaviour on aid allocation.[13]

A recent study by Gates and Hoeffler (2004) takes the issue of strategic donor behaviour further by focusing on the Nordic countries during the period 1980-99, thus covering the crucial decade following the end of the cold war. The primary interest of the Gates-Hoeffler study is to examine donor behaviour during this crucial period and to determine whether strategic motives affect the aid allocation process. The study improves upon earlier work by considering *inter alia* the four donors of the Nordic group separately and by using averages for five sub-periods over the period 1980-99. To capture strategic donor behaviour, Gates and Hoeffler use a UN variable, building on Gartzke and Jo (2002) who derived an index ranging from -1 to +1 with higher values indicating more similar voting patterns. A central finding of the study is that contrary to the case of the average bilateral donor, none of the Nordic countries allocate more aid to political allies, but rather that their aid flows are driven by democracy and human rights records in aid-recipient countries. Thus, overall, strategic considerations manifested in the UN voting behaviour are insignificant in the aid allocation decision of the Nordic countries contrary to other bilateral donors.

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[13] The above finding seems to confirm *inter alia* results reported by Lundborg (1998) regarding strategic donor behaviour in the case of the US and the Soviet Union over the period 1948 to 1979, when the two donors used aid to stimulate political support from aid recipients and the receiving countries offered political support in exchange for additional aid from these two donors.

3   The model

3.1 Technology

Assume that there are only three member states funding the UN, and that, in accordance with the one-country-one-vote rule of the UN General Assembly, these three member states have identical voting power. Moreover, decisions in the UN concern foreign policies, *f*, and policies associated with poverty reduction, *y*. The latter can be exemplified by the achievements made towards reaching the MDGs, and throughout the paper we will consider improvements in the indicators listed in the MDGs, i.e., 'reducing poverty'. We assume that the UN is the donor instrument for solving foreign policy problems and reducing poverty, and not a player on these scenes. Further, we assume that the UN's total resources consist of the total inflows of aid received from donors, a_M, and that these resources are used for producing *f* and *y* only. Assume then that the UN's production function with regard to solving foreign policy issues, *f*, can be denoted as:

$$f = f(\alpha a_M) \tag{1}$$

Thus, the share of UN's total resources devoted to foreign policies, α, together with the actual amount of aid at the UN's disposal, a_M, determine the UN's production of foreign policy solutions. Assume that *f* is increasing in both elements, and is a continuous function.

Donors can choose either to give their aid to the UN or to disburse it through their own national aid agency, and assume that these two institutions have different technologies for reducing poverty. The UN applies technology to reduce poverty that requires sunk costs *F* as start-up, where *F* is larger than a single donor's total amount of aid. Let this technology be represented by the production function:

$$y^M ((1-\alpha)a_M, F)), \tag{2}$$

where $(1-\alpha)$ is the share of this aid used to reduce poverty. We call y^M the multilateral technology, and assume that this function is twice differentiable. To reflect the standard explanation for having multilaterals, we let y^M have locally increasing returns to scale, in addition to the standard assumptions of product functions of a positive first derivative with respect to the input and a negative second derivative. In other words, this technology increases the reduction of poverty in the amount of aid that is allocated, but at a decreasing rate.

Bilateral technology does not require sunk costs, but is also twice differentiable, and is represented by the production function y^B:

$$y^B (a_B) \tag{3}$$

where a_B is the amount of aid given by a particular donor to its own bilateral aid agency. This bilateral production function is assumed to have the same signs of its

derivatives as the multilateral production function, but is assumed to always have a lower marginal productivity than the multilateral technology for a given amount of aid. Summing up, the properties of the poverty reducing technology can be represented in a general form as:

$$\frac{dy^j((1-\alpha_j)a_j,F^j)}{da} > 0 \; , \; \frac{d^2y^j((1-\alpha_j)a_j,F^j)}{da^2} \leq 0 \; , j=M,B,$$

$$\alpha_B = 0 \; , F^B = 0 \; , \alpha_A > 0 \tag{4}$$

$$\frac{dy^M((1-\alpha_j)a_M,F^M)}{da} > \frac{dy^B((1-\alpha_j)a_B,F^B)}{da} \; for \; a_M = a_B, \; \alpha_A > 0$$

Since we are aiming to understand why we have similar institutions performing overlapping tasks financed by the same donors, the production function that determines the international society's ability to reduce poverty seems important. Note, however, that our approach is to use standard textbook production functions.[14] We believe that this gives a realistic set-up since it seems plausible that increasing the amount of aid to these institutions will contribute more towards developing the world, and further, that the reduction of poverty increases at a decreasing rate for each institution.

Moreover, when we observe the enormous resources flowing to the multilateral institutions, we believe that there must be certain efficiency reasons for this pattern, as under most circumstances countries generally prefer to sit in the driver's seat. Thus, our assumption of the existence of efficiency gains from giving aid to multilateral institutions as compared to aid to bilateral organizations seems plausible, and in line with several donors' reasoning with regard to their support to these institutions. This is particularly the case when the amount of aid to be disbursed is large. Moreover, when aid projects are big, like the construction of a dam with a hydro-electric power plant, or when they are very complex and overarching, like designing a flexible exchange rate regime, then it is feasible that a multilateral agency is more efficient in carrying it than a small bilateral institution.

Some may argue that poverty reduction by one institution will impact on the marginal productivity of poverty reduction of other institutions. This would be the case if, for example, the source of increasing returns from scale comes from the production of some type of public good, like the production of knowledge implicit in developing new vaccines. However, our assumptions focus on specific poverty reduction efforts that concern concrete projects and initiatives which have no spillover-effects. To illustrate this further, there is, for example, no reason to believe that the efficiency of WHO in operating programmes to prevent the further spread of HIV/AIDS in Uganda will affect the efficiency of USAID in combating locusts in the Sahel region in Africa. Finally, we also assume that aid is the only input in the poverty reduction function, but this is only a simplification to avoid an unnecessarily complicated disposition.

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[14] See, for example, Varian (1992).

3.2 The payoff functions

Assume that among the three UN member countries, two are donors, with one being altruistic and the other with both selfish and altruistic motives for giving aid. The third country is a recipient that maximizes the inflow of aid, and derives increasing utility in the total amount of poverty reduction, $Y = y^M + \sum y^B$ where the latter term represents the sum of the reduction in poverty with the bilateral aid of two donors. We also assume that the recipient has an increasing utility in the number of foreign policy issues solved. Then, its utility function can be denoted as:

$$R(\alpha f, Y, a_R) \qquad\qquad (5)$$

where a_R is the amount of aid given directly by the strategic donor to the recipient without the involvement of a bilateral or multilateral aid agency. To simplify, we assume that a_R does not reduce poverty. Rather, we assume that this aid is used for other purposes such as, for example, investments that benefit the population in the upper sections of the income distribution or for consumption by the governing elite.

The altruistic donor, D^A, is concerned with poverty reduction only:

$$D^A(Y), \qquad\qquad (6)$$

and D^A is increasing in *Y*.

The strategic donor, D^S, gives aid to serve two motives. The first stems from a true desire to reduce poverty, and hence, it has an increasing utility in *Y*. The second motive, however, is to achieve the donor's own foreign policy aims, which can be interpreted as arising purely from securing its own self-interests. The larger number of foreign policy issues solved, the higher the utility of the strategic donor will be. Assume further that this donor has the opportunity to pursue its foreign policy goals by giving bilateral aid directly to the recipient. Let the strategic donor's direct grant to the recipient be denoted by a_R^S. Then we can let this donor's utility function be denoted as:
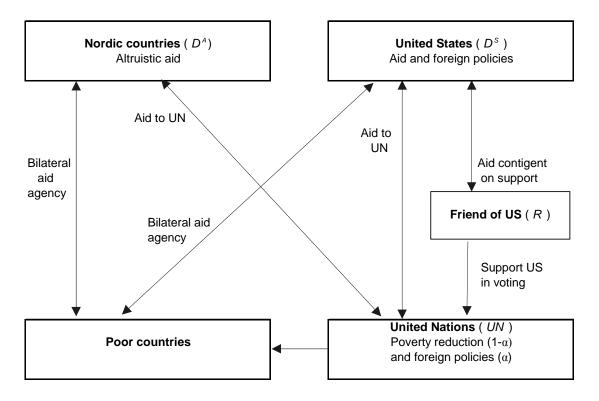
$$D^S(\alpha f, Y, a_R^S) \qquad\qquad (7)$$

Thus, the strategic recipient has three different channels for giving aid. It can disburse aid through the UN, give aid to the bilateral aid agency, and finally, channel an amount directly to the recipient.

Together with the findings of Alesina and Dollar (2000) as well as Gates and Hoeffler (2004), we can now portray our model with respect to different donor motives for giving aid and the linkages between the agents. Figure 1 illustrates the empirical evidence relevant to our model:

Figure 1
Motives for giving aid: the model and the empirics

3.3 The rationale for overlapping institutions

Recall that each donor's amount of aid is exogenously determined, and that they are obliged to disburse the total aid amount. This feature of the aid system turns out to play an important role to our results. Further, assume for simplicity that the UN General Assembly is to vote on whether to devote a high or a low share of UN's resources to foreign policy issues, α^h, α^l, respectively. Then let $\alpha = (\alpha_R^g, \alpha_A^n, \alpha_S^i)$, *where* $g, n, i \in \{h, l\}$, be the vector that describes the voting pattern of the different countries. Then, $\alpha = (\alpha_R^h, \alpha_A^l, \alpha_S^h)$ indicates, for example, that the recipient votes for the high share together with the strategic donor, while the altruistic donor votes for the low share. Thus, the result of this voting is that the UN will use a high share of its resources on foreign policies, α^h.

The altruistic donor maximizes its utility by choosing how to divide its exogenous aid budget, $\overline{a}^A$, between the UN, a_M^A, and the donor's own bilateral aid agency, a_B^A:

$$\underset{a_M^A, a_B^A, \alpha_R^g}{Max} \quad D^A(y^M((1-\alpha)a_M^A, F), y^B(a_B^A)) \text{ subject to } \begin{array}{l} \overline{a}^A = a_M^A + a_B^A \\ \alpha_R^g \in \{\alpha_R^l, \alpha_R^h\} \end{array} \tag{8}$$

Since the altruistic donor does not derive any utility from foreign policy issues, it will always vote for the low level of the UN resources to be used for this purpose. Solving

this straightforward maximization problem further yields the following disbursement rule for the altruistic donor:

$$\text{If}\begin{cases}(a) & \dfrac{dy^M}{da} > \dfrac{dy^B}{da}, a \leq \bar{a}^A \Rightarrow \bar{a}^A = a_M^A \\[2ex] (b) & \dfrac{dy^M}{da} < \dfrac{dy^B}{da}, a \leq \bar{a}^A \Rightarrow \bar{a}^A = a_B^A \\[2ex] (c) & \dfrac{dy^M}{da} = \dfrac{dy^B}{da}, a \leq \bar{a}^A \Rightarrow \bar{a}^A = \hat{a}_M^A + \hat{a}_B^A \\[3ex] & \qquad\qquad\quad \text{where} \quad \dfrac{dy^M(\hat{a}_M^A)}{da} = \dfrac{dy^B(\hat{a}_B^A)}{da}\end{cases} \qquad (9)$$

The first two scenarios, (a) and (b), simply imply that the altruistic donor will channel all its aid to the most efficient organization as long as it can spend its entire aid amount on this institution. The third scenario is the case where the decreasing marginal productivity of aid implies that this donor should fund the most efficient institution to the point where it becomes more efficient to start giving aid to the other institution. Thus, in our set-up, this implies that the fixed cost of creating a new multilateral is too large to be an alternative, and the donor disburses aid to an inferior bilateral aid institution. In this latter case, the donor splits the aid between the multilateral and bilateral institutions in such a manner that the marginal productivity between them is equal.

The interior solution of the donor's maximization problem identifies one plausible reason for the co-existence of multilateral and bilateral aid organizations with almost identical tasks. If there are economies of scale in reducing poverty, then two altruistic donors will cooperate to form a multilateral organization, but note that the presence of an interior solution implies that the fixed cost not be too high. One could perceive the solution as following: If one of the donors has more aid to disburse after the economies of scale are exhausted in the multilateral institution, and the fixed cost of establishing a new multilateral institution is so great as to rule out this alternative, then it may be efficient to finance a bilateral programme for utilizing the rest of the aid budget.
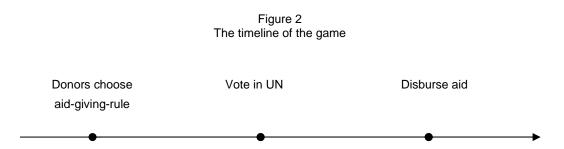
It is evident that this modelling resembles the structure of the public-good framework where free-riding and underprovision of the public good can be a severe problem. However, free-riding here is not a concern, as it would never be rational to reduce one's own aid contributions when others are increasing theirs. This arises from the well-documented fact that parliaments set the amounts of aid to be allocated, and that it is imperative for the donor government to use the aid before the end of the financial year.

3.4 The impact of strategic behaviour on the foreign aid system

Assumptions

In order to focus on the interesting situations where strategic behaviour may occur, we need to impose some further assumptions.

The actions are typically sequential, so we need to specify the timeline of the game. Modelling it as a dynamic game,[15] we let it begin with the donors announcing their rules for disbursement. Thus, at stage one, the strategic donor announces that it will give aid directly to a recipient only if the recipient votes similarly with the strategic donor in the UN.[16] The altruistic donor, on the other hand, indicates that it will give aid so as to maximize poverty reduction. At the second stage, then, the countries vote in the UN regarding the degree of UN involvement in foreign policy issues and thus, the share of UN involvement in poverty reduction issues. At stage three, donors disburse their funds. The following timeline displays the sequence of the game:

Figure 2
The timeline of the game

Assume that the recipient government always prefers that aid be given directly to its country, rather than disburse it to the UN or through the bilateral aid agency. The rationale for this is straightforward: the recipient places greater value on the development of its own country than on global poverty reduction, or wishes to use the aid for other purposes considered more important than global poverty. Assume then that it is important for the recipient to continue to be a 'friend' of the strategic donor and vote in tandem with this country in UN and thus receive aid, as compared to voting independently of the strategic alliances and not be rewarded with aid from the strategic donor. Formally:

$$R(\alpha_{-R}, \alpha_R^h, Y^0, \hat{a}_R^s) > R(\alpha_{-R}, \alpha_R^l, Y^1, \overline{a}_R^S) \tag{10}$$

where $\hat{a}_R^S > 0$ is the amount of aid which is donated directly by the strategic donor, $\overline{a}_R^S = 0$. Further, Y^0, Y^1 is the level of poverty being reduced if the strategic donor gives $\hat{a}_R^S$ to the recipient and the balance through the aid institutions, and the level of poverty reduced if nothing is channelled directly to the recipient, respectively. Further, we assume that the recipient will, *ceteris paribus*, prefer to vote for the low share to solving foreign policy issues:

$$R(\alpha_R^h, Y, a_R^s) < R(\alpha_R^l, Y, a_R^S) \tag{11}$$

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[15] We could also model this as a repeated game. This would imply that it is easier for the strategic donor to control the recipient's voting pattern since it could always make next disbursement contingent on the recipient's vote in the previous period. However, the more complicated calculation would rather blur than clarify the picture.

[16] This is in line with findings reported in Alesina and Dollar (2000) and Gates and Hoeffler (2004) regarding most bilateral donors, with Nordic countries being the notable exception, see section 2.

Now, if it is to be worthwhile for the strategic donor to give aid directly to the recipient in order to make the recipient vote for a *high* share for foreign policy purposes, then the following condition must be satisfied:

$$D^s(\alpha_{-R}, \alpha_R^h, Y^0, \hat{a}_R^s) > D^s(\alpha_{-R}, \alpha_R^h, Y^1, \overline{a}_R^s) \qquad (12)$$

Thus, it must be more important to have the recipient to vote for the high share and thus give $\hat{a}_R^S$ directly to the recipient, as compared to targeting all its aid for poverty reduction and hence lose the support of the recipient in the UN voting. Assume further that if the strategic donor is unable to convince the recipient vote for the high share, then this donor would rather transfer all its aid through the aid institutions, and thus, $\overline{a}_R^S = 0$ in this case.

The benchmark: no strategic play

Recall that the UN General Assembly is to vote on whether to devote a high or low share to foreign policy issues, α^h, α^l, respectively. In the benchmark scenario, where the strategic donor exerts no influence on the recipient, i.e., $\overline{a}_R^S = 0$, it is straightforward to show that the low share will be chosen since both the altruistic donor and the recipient will secure the majority for the low share. The strategic donor's maximizing problem is then reduced to:

$$\underset{a_M^S, a_B^S, \alpha_S^g}{Max} \quad D^S(\alpha f, Y, \overline{a}_R^S) \text{ subject to } \begin{matrix} \overline{a}^S = a_M^S + a_B^S \\ \alpha_S^g \in \{\alpha_S^l, \alpha_S^h\} \end{matrix} \qquad (13)$$

It then follows that the payoff to the players in this game will be $D^s(\alpha^l, Y^1, \overline{a}_R^s)$, $R(\alpha^l, Y^1, \overline{a}_R^S)$, $D^A(Y^1)$, where Y^1 solves (8) and (13).

The impact of strategic behaviour on bilateral and multilateral institutions

Now, if we allow the strategic donor to form alliances, then the game alters radically. From (12) it is evident that the strategic donor will benefit if it gives $\hat{a}_R^S$ to the recipient since this induces the recipient to vote for the high share. From (10) we have that the recipient will vote for the high share if this implies that it will get $\hat{a}_R^S$. Since the recipient's vote will turn the voting majority compared to the benchmark, the strategic donor will offer $\hat{a}_R^S$ in return for α_R^h, which will result in the UN using a high share of the UN resources on foreign policy issues. The partial equilibrium of these actions will result in a payoff of $D^s(\alpha^l, Y^0, \overline{a}_R^s)$, $R(\alpha^l, Y^0, \overline{a}_R^s)$, $D^A(Y^0)$, to the players, where Y^0 solves (8) and (13) when $\overline{a}^S = a_M^S + a_B^S + \hat{a}_R^S$.

However, it is interesting to analyse how this will affect the aid institutions since the marginal productivity of the two technologies are no longer equal after the change in α. Two scenarios emerge. The first is that the lower share of aid to UN's poverty reduction implies that we move downward along the y^M curve. This implies that donors will reduce their aid shares to their own bilateral institutions while increasing their share to

the multilaterals in order to restore equality between the marginal productivity of the technologies.

The second scenario is that the increase in α implies that the y^M shifts downwards, i.e., that the marginal productivity decreases for all a. In this case, an opposite aid-giving pattern will emerge. Both donors will reduce their contributions to the multilateral institution and increase their donations to the bilateral aid organization up to the point where (9) is restored.

When the increase in α reduces the returns to scale for each a

Recall that locally increasing returns to scale are important in our explanation on the existence of multilaterals. Thus, it is feasible that a reduction in the share of aid being channelled to poverty reduction may lower the multilateral production technology's returns to scale for each level of aid. It is straightforward to show that if the reduction in the share reduces the returns to scale of the multilateral production function, then this may imply that there will be a larger amount of aid to the bilateral institution and less to the multilateral institution, as discussed above.

Assume, for example, that the multilateral production function depends on the share that the UN uses to reduce poverty:

$$(1-\alpha)y^M(a_M, F),\tag{14}$$

which illustrates the situation that might arise if the changes in $(1-\alpha)$ are large.

Giving more aid for foreign policy purposes in this context shifts (14) downwards. Thus, instantaneous marginal productivity after a reduction in $(1-\alpha)$, i.e., the marginal productivity after the cut but before the donor's response, will be lower in (14) as compared to the case before the reduction. Then it follows that donors respond by transferring aid from multilateral institutions to the bilateral organization to restore equality between the marginal productivity of the two. Hence, the strategic donor's behaviour reduces the amount of aid that accrues to the multilateral, which is also the most efficient aid institution.

4   Concluding remarks

Strategic donor behaviour has been an important part of the aid allocation process for many years. In this paper we develop a model of strategic donor behaviour in which a donor's effort to pressurize a recipient to support the foreign policy goals of the donor in the decision process in a multilateral organization is endogenously determined. Our game-theoretic, multi-agent model illustrates the virtue of using foreign aid relationships as an instrument of foreign policy, as perceived by the mighty donor. The model shows how this strategic donor behaviour is damaging for the developing countries in general—and for the poor people in particular, since less aid is channelled to poverty reduction. We also show that other donors that do not share the foreign policy aspirations of the strategic, influential donors may, in fact, reduce their aid contributions to multilateral organizations. Both decreasing the amount of aid

channelled to poverty reduction and undermining efficient multilaterals are factors that work against what is really needed to meet the MDGs by 2015.

We use a simplifying assumption that the amount of aid going from a strategic donor directly to a recipient does not have an impact on poverty reduction. However, we believe that when the motive of the donor is to secure its own strategic interests and to support its allies, then it is in fact very likely that the strategic donor will avoid being very active in following up the usage of aid, as this could annoy the recipient and thus undermine the donor's opportunity to get their vote. In this case, there is an additional drawback of the strategic use of aid. If one believes that the efficiency of aid is improved by donor-recipient dialogue regarding its usage, or by donor demands for reforms in the recipient country to improve the impact of aid as spelled out in the conditionality literature, or that other donor requirements for giving aid are important to poverty reduction outcomes, then strategic aid will contribute even less to poverty reduction than outlined above. The follow up from the strategic donor and dialogue will concern former foreign policy stances and votes to secure its self-interests, as compared to the altruistic donor's motivation of aid-giving for maximum poverty reduction.

Finally, our model sheds light on one explanation for the existence of bilateral and multilateral aid institutions performing almost identical tasks. When the economies of scale in multilateral organizations are exhausted, donors wishing to disburse more aid can benefit from starting their own bilateral aid agency as long as the additional aid is not sufficiently large to start a new multilateral organization.

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