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## Applications and Policy

### Giving Overseas And Public Policy

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#### Abstract

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# **Giving Overseas and Public Policy<sup>1</sup>**

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## **Abstract**

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## 1. Introduction: overseas giving

Giving by individuals for development has been illustrated by some spectacular examples. Bill Gates and Warren Buffett have made available for global development sums that are truly remarkable. But equally remarkable in scale is the number of people giving modest amounts for overseas development. In the UK, 1 person in 10 is reported to be giving for development (Micklewright and Schnepf, 2007).<sup>2</sup> The aim of this paper is to consider how such giving behaviour is modelled and the implications for public policy. How is overseas giving best interpreted? Why do people not free-ride when there are millions of potential donors? What is the interrelation between private giving and government provision of Official Development Assistance (ODA)? Does ODA crowd out private giving? What should be the government response to increased private giving?

The answers to these questions depend on (a) how we understand the determinants of individual giving for development, and (b) how we specify the social welfare function. This paper is concerned with both of these aspects. The literature on the economics of charitable giving, which dates back to Becker (1961), Boulding (1962) and Vickrey (1962), contains valuable insights, such as the difference between concerns for the “public good” and the personal benefit that people derive from the act of giving (“warm-glow”). This distinction provides a point of departure in section 2 of the present paper, but I argue that, taken on their own, neither the public good nor the warm glow models are fully satisfactory in the specific case of overseas development. In section 3, I suggest a new “identification” approach to individual giving in the case of development, which combines the results focus of the public goods formulation with the scale of the warm glow model. In section 4, I examine the implications for public policy, including the extent to which ODA crowds out private giving and the optimal determination of the level of ODA, where giving for development raises specific issues for the specification of social welfare. The final section 5 concludes.

## 2. Standard models of charitable behaviour applied to overseas giving

The standard model of charitable giving employed by economists (see the survey by Andreoni, 2006) assumes that individuals maximise the utility derived from private consumption and from charitable donations. The utility from donations has been assumed to take one of two main forms. The first is that derived directly from the act of giving, which has come to be known as the “warm-glow” (Andreoni, 1990); the second is derived from the achieved results of the gift, referred to as the “public good”. In the first case, a person derived utility from giving to the Tsunami Appeal; in the second case, the person derived utility from the fact that Tsunami victims are being helped. As has been demonstrated in the literature, these two motives for giving can have quite different implications. This is evident even without any formal analysis, as may be seen from asking how far official giving “crowds out” private giving? The extent of government aid to the victims does not affect the warm glow

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<sup>2</sup> In the US, according to *Giving USA 2002*, “international” accounted for some 4 per cent of the giving identified by cause other than that for religion (Havens, O’Herlihy and Schervish, 2006, page 561).

that the person derives from his or her contribution, so that, on this basis, there is no crowding out. But, with the public good motive, government aid reduces the urgency of the public good case for giving, and hence tends to reduce the contributions by individuals. The distinction is therefore important.

Which, if either, of these two models is more applicable to giving for development?

### *The Warm-Glow Motive*

On a purely warm-glow approach, individual utility is derived from private consumption and from the contribution of gifts to development, denoted by  $d$ . The person has a gross income,  $y$ , which is subject to tax at a proportional rate,  $t$ . A fraction  $\theta$  of the gift is assumed to be tax deductible, so that net income is equal to  $y - t(y - \theta d)$ , and the net cost of the gift in terms of foregone consumption is  $d(1 - t\theta)$ . In order to provide some mathematical shape to the model, I assume that the utility function is additive and logarithmic:

$$U \equiv (1 - \alpha) \log\{y(1 - t) - d(1 - t\theta)\} + \alpha \log\{1 + d/d_0\} \quad (1)$$

The first term measures the utility from consumption. The second term measures the utility from donations and is zero if the person does not make any gift.  $\alpha$  ( $0 \leq \alpha < 1$ ) and  $d_0$  ( $\geq 0$ ) are constants that represent preferences for giving. The level of gifts that maximises  $U$  is given by

$$d = \alpha y(1 - t)/(1 - t\theta) - (1 - \alpha)d_0 \quad \text{where this is positive, otherwise zero} \quad (2)$$

The coefficient  $\alpha$  measures the marginal propensity to give out of an extra £ of income. If, in the absence of tax relief, the person tithes a tenth of extra net income, then  $\alpha = 0.1$ . But the person is only assumed to do this if their income is sufficiently large. This is the role of  $d_0$ , which governs the threshold income level at which the person begins to give. As the degree of tax deductibility rises, the threshold income falls and the marginal propensity to give increases.

The theoretical framework set out above can be used to derive various policy implications, such as the optimal tax treatment of charitable donations (see, for example, Atkinson, 1976 and Diamond, 2006). However, the model assumes that the donor is completely unconcerned with the use made of the gift and with the effectiveness of charitable activity. This assumption is particularly unappealing in the case of giving for overseas development. In the debates about aid for development a key role is played by issues of “effectiveness”. A reason frequently advanced for *not* giving is that the money is wasted: it disappears in administrative costs or is lost in corruption. People may share the goal of wishing to aid poor countries but lack confidence in the means. Qualitative research (Atkinson and Eastwood, 2007) has shown the role played by negative stories about misgovernment in dissuading people from giving for development. It does indeed seem reasonable to assume that, in the case of development, a primary preoccupation of donors is with the usefulness of their contribution. This brings us to the “public good” model.

## Public Good Motives

If giving behaviour depends on the achieved results, then a wider set of factors have to be taken into account. In addition to the leakages just discussed, the impact on the public good depends on the contributions of the  $(n-1)$  other donors and of the government. Suppose that the per capita consumption of the  $r$  recipients, assumed to be all identical, is  $\pi$  in the absence of private gifts or ODA. This is then augmented by the individual gift,  $d$ , plus the total given by others, divided by  $r$ . The total given by others is made up of the giving by the other  $(n-1)$  donors averaging  $\delta$  per person and of  $gn$  contributed by the government in ODA. However, a certain proportion  $\ell$  of the total given is lost in leakage. As a result, the per capita consumption of the  $r$  recipients becomes  $\pi + (1-\ell)[d + \delta(n-1) + gn]/r$ .

How does this enter the utility function for an individual donor? The “public good” in this case is not a single public facility, like a park or a hospice, but involves the consumption of  $r$  recipients. It is possible that the donor acts as a utilitarian, adding to the utility from personal consumption the utility of all  $r$  recipients. This would however mean that the maximand is dominated by the latter terms as  $r$  becomes large: there would be a sum taken over 1 donor and millions of recipients. On the face of it, this does not seem a reasonable assumption, and a more natural parallel to the pure public good approach is to add a term representing the average consumption of the recipients, again weighted by a preference parameter  $\alpha$ :

$$U \equiv (1-\alpha) \log\{y(1-t) - d(1-t\theta)\} + \alpha \log\{\pi + (1-\ell)[d + \delta(n-1) + gn]/r\} \quad (3)$$

Suppose that the person takes as fixed the amounts given by others and by the government. The utility maximising choice of  $d$  by the individual becomes

$$d = \alpha y(1-t)/(1-t\theta) - (1-\alpha)\{\delta(n-1) + gn\} - r(1-\alpha)\pi/(1-\ell)$$

where this is positive, otherwise zero (4)

The giving function (4) is of the same mathematical form as before, with the intercept depending on the giving of others and on the amount of ODA. From this, we can immediately see how there may be crowding out. Suppose that there is an increase of £1 in total government support ( $gn$ ). From (4), we can see that the individual is predicted to reduce giving by all but a proportion  $\alpha$  of this increase (or to reduce giving to zero). So, with  $\alpha = 1/10$ , there is 90 per cent crowding out. Put another way, the overall total of assistance is

$$d + \delta(n-1) + gn = \alpha[y(1-t)/(1-t\theta) + \delta(n-1) + gn] - r(1-\alpha)\pi/(1-\ell) \quad (5)$$

The person treats the increase in  $gn$  as an increase in total resources and “spends” a fraction  $\alpha$  on development assistance. (No allowance is made here for any taxes necessary to finance the increase in  $g$ ; if taxes are increased, this will have an offsetting effect in reducing  $y$ , and the degree of crowding out will be larger.)

It may be seen from (4) that the amount given is a decreasing function of the extent of leakage ( $\ell$ ). The greater the rate of leakage, the higher the threshold for giving. The model therefore captures the observation that increased leakages make people less willing to support development charities. The threshold also increases with  $r$ , to an extent that does not seem realistic. The total consumption of recipients ( $r\pi$ ) will dominate  $y$  which is one person's income. In this respect, the model does not seem appropriate for giving for development where large numbers of potential recipients are a very evident feature. Everyone knows that the number of people living below the World Bank poverty line is measured in hundreds of millions. Whereas a cheque for \$10,000 will make a material difference to the financing of a local hospice at home, it would not, on its own, make a material difference to the solution of world poverty.

### *Public goods and large numbers of donors*

In addition to large numbers of recipients, there are large numbers of potential donors, an aspect which has led to criticism of the public goods approach by Sugden (1982) and others. To discuss this, we need to take into account the responses of other donors. The term  $\delta$  is the result of the decisions of others about their values of  $d$ . The outcome depends on what an individual believes about the behaviour of others. The standard assumption in the economics literature is that made above: i.e. people determine their giving assuming that the behaviour of others is independent of their own decision (a "Nash" assumption). Suppose that this holds, as may indeed be plausible where  $n$  is large. If everyone is identical, then  $\delta = d$ , and we can solve for the value of  $d$ , where there is an interior solution:

$$d = \alpha y(1-t)/(1-t\theta)/[n(1-\alpha)+\alpha] - (1-\alpha)\{g+(r/n)(\pi/(1-\ell))\}/[(1-\alpha)+\alpha/n] \quad (6)$$

In the literature on charitable giving, attention has focused on large  $n$ , but, as we have just noted, in the case of giving for development,  $r$  is also large. It therefore makes sense to focus on their ratio, denoting  $r/n$  by  $\sigma$ . If  $\sigma$  is fixed, then, as  $n$  rises, everyone reduces their donations. For a fixed  $g$  ( $>0$ ), the threshold income level rises, so that fewer and fewer people give. The larger the number of potential donors, the more willing people are to "free ride" on the contributions of others.<sup>3</sup> Indeed, as  $n$  tends to infinity, individual giving goes to zero.<sup>4</sup> This is why Andreoni summarised the literature as saying that, as the number of people rises "warm-glow will become the dominant if not the exclusive motive for giving" (2006, page 1223). Given the large number of potential donors to fund world development, the public good model does not seem adequate. As Sugden argued many years ago, "the public good theory of philanthropy is untenable as an explanation of the behaviour of those people who contribute to large charities" (1982, page 348).

Taken on their own, neither the public good as formulated here nor the warm glow models seem therefore satisfactory as a basis for analysing giving for

<sup>3</sup> As discussed by Jones and Posnett (1993, page 135), free-riding may be less with alternatives to the Nash assumption. If contributors expect that increases in their own giving will stimulate others to give more, then the degree of free-riding is reduced.

<sup>4</sup> Andreoni (1988) shows that, with individuals differing in income, as  $n$  increases, there are positive total donations but the proportion of the population who give, and the average gift, tend to zero.

development. They do not allow us to introduce a concern for outcomes in a way that is consistent with positive private giving in the presence of large numbers of potential donors and recipients. In the next section I suggest an alternative that blends the two approaches.

### 3. The “identification” model

A combination of the warm-glow and public goods formulations seems more relevant to the case of giving for development. Melding the *scale* of the warm-glow approach with the *results* focus of the public goods formulation yields an explanation of giving in the case of large populations that seems to capture the way in which giving is presented by charitable agencies. In what I shall call “the identification approach”, the donor is assumed to be concerned with the impact on the living standards of the recipients; it is not enough simply to put the cheque in the envelope. But the donor does not regard the cheque as being divided among millions of potential recipients. The donor is assumed to visualise a single recipient or a family or a village. Such a visualisation is indeed much promoted by development charities, and is made concrete in programmes where donors “adopt” families, to whom the transfer is channelled. Even where there is no explicit adoption, donors often are encouraged by development charities to “identify” with the situation of recipients on a one-to-one or one-to- $m$  basis, where  $m$  is a small number. “It only takes \$X to do Y” is a common marketing strategy. The “giving a goat” campaign had considerable resonance.

The identification approach may be formalised by writing the utility function as

$$U \equiv (1-\alpha) \log\{y(1-t)-d(1-t\theta)\} + \alpha m \log\{\pi + (1-\ell)d/m\} \quad (7)$$

The potential donor attaches a weight  $\alpha$  to the welfare of each of the  $m$  recipients, where their welfare depends on the recipient’s own resources, denoted by  $\pi$  and the amount given after leakage and divided by the number of perceived recipients. The resulting level of giving is

$$d = \{\alpha y(1-t)/(1-t\theta) - (1-\alpha)\pi/(1-\ell)\} / [(1-\alpha)/m + \alpha]$$

where this is positive; otherwise zero (8)

Since the number of potential donors,  $n$ , does not directly enter (8), the identification model may appear closer to that of warm-glow. In some respects, the giving relation is indeed similar. But there are significant differences. First, the amount given depends on the perceived situation of the recipients, via the term  $\pi$ . Here there may be an impact of the media and NGOs. If the activities of bodies such as the Commission for Africa or of development charities make potential donors more aware of the low levels of living, then this will increase both the proportion of donors and the amount given. Secondly, the number of recipients per donor,  $m$ , affects the amount given but not the threshold. If donors extend their range of concern, increasing  $m$ , then this increases the level of giving. Suppose  $\alpha = 0.1$ . Then, with  $m = 1$ , the term in square brackets in (8) is equal to 1; with  $m = 3$ , it is equal to 0.4, so that the amount given is 2½ times higher.

## Large numbers

The potential number of donors and the extent of government aid do not enter (8) directly, but indirectly via the term  $\pi$ , the perceived living standard of the recipient in the absence of giving. Suppose that, in the identification model, the potential donor envisages a single recipient ( $m = 1$ ), say a village, out of a potential total of  $r$  villages. The donor sees the gift as allowing a programme to be “extended to another village”. On this approach, *other* donors are seen as helping *other* villages; the amount given by others does not affect the utility derived by the donor. On the other hand, the potential donor does see the living standard of his or her village in the absence of the gift being affected by ODA. ODA equal to  $g$  per head of potential donors (making a total  $gn$ ) is assumed to be spread over the  $r$  villages. Let us assume that the perceived effectiveness of ODA is  $(1-\lambda)$  times that of individual donations, where  $\lambda$  may be positive or negative. So the effective transfer is  $(1-\ell)(1-\lambda)gn/r$  per village, and hence the perceived standard of living in the absence of an individual gift to the village with which the donor identifies is

$$\pi = \pi_0 + (1-\ell)gn(1-\lambda)/r \quad (9)$$

The constant  $\pi_0$  denotes the standard of living in the absence of any aid or giving. In what follows, I assume that  $m=1$ . The level of giving is then<sup>5</sup>:

$$d = \alpha y(1-t)/(1-t\theta) - (1-\alpha)\pi_0/(1-\ell) - g(1-\alpha)(1-\lambda)/\sigma \quad \text{or zero} \quad (10)$$

Giving is positive where income exceeds a threshold level that depends on preferences and a number of parameters, including  $\sigma = r/n$ , which may be seen as an indicator of the scale of the problem. As argued earlier, it is of the essence of giving for development that both  $n$  and  $r$  are large, but their ratio may differ. If the populations of potential donors and of potential recipients are broadly matched, then  $\sigma = 1$ ; if donors fall short, then  $\sigma$  is greater than 1 and vice versa. It may be noted that the population of the countries that currently belong to the OECD Development Assistance Committee is quite similar (a little less than 1 billion) to the estimated number of people living below the MDG target level of \$1 a day.

## Summary

The “identification” model combines the scale of the warm-glow approach with the results focus of the public goods formulation to yield an explanation of giving where there are large numbers of potential recipients and large numbers of potential donors. The level of giving is a simple linear function of income on account of the assumptions made, but both the slope and intercept reflect some of the key determinants, as summarised in Figure 1. Moreover, the underlying motivation seems close to the way in which giving is envisioned by charitable agencies and approached in their campaigning activities.

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<sup>5</sup> The level of giving is similar to that obtained with the “utilitarian” version of the public goods model, but with the significant difference that it is uninfluenced by the level of giving by other private donors.



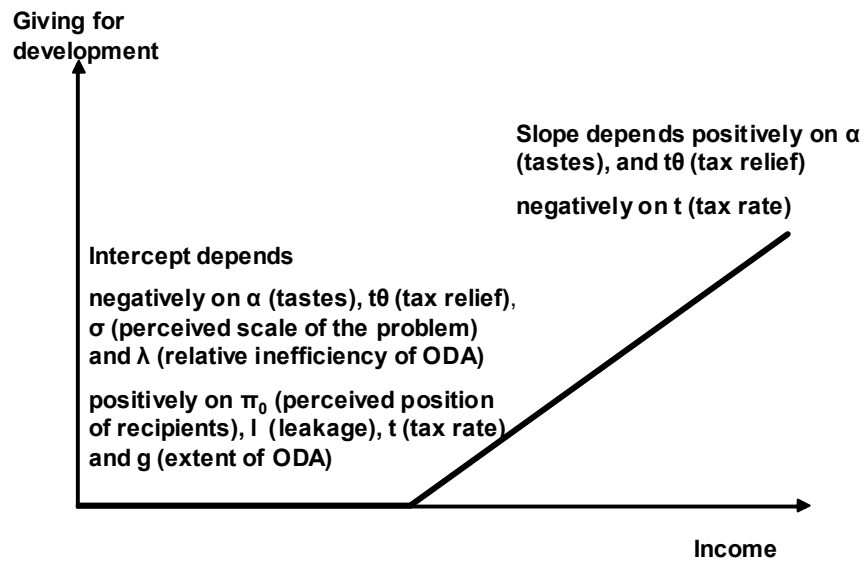


Figure 1 Giving for Development in “identification” model

#### 4. Implications for public policy

This section considers the two-way interaction between private giving and public policy. The first issue, already evoked, concerns the ways in which policy affects private donations. Crowding out has already been discussed, but public policy also affects charitable giving in general via tax relief. Moreover, public policy can influence the channelling of private giving towards specific causes via its coverage of different needs. The second issue concerns the reverse interaction. How should changes in private giving affect government policy towards the determination of the levels of ODA? If individuals give more overseas, should governments give less or should they give more? I am concerned here with normative, rather than political economy, arguments, and this requires us to consider the appropriate form of the social welfare function in the presence of private giving overseas.

##### *Crowding out*

As we saw earlier, in the public goods model all but a fraction  $\alpha$  (or smaller) of an increase in  $g$  was crowded out. In the case of the identification model, we can see from (10) that the sum of  $d$  and  $g$  increases with  $g$  according to  $[1-(1-\alpha)(1-\lambda)/\sigma]$ . The second element measures the degree of crowding out, and decreases with all three of the parameters: the taste for giving, the perceived relative inefficiency of ODA, and the scale of the problem.

If the private donor sees ODA as equally efficient ( $\lambda=0$ ), and donors and recipients are equally matched ( $\sigma=1$ ), then all but  $\alpha$  is again crowded out. But the degree of crowding out is less if donors regard ODA as less effective. With  $\sigma=1$  and  $(1-\alpha)$  close to 1, the degree of crowding out is close to  $(1-\lambda)$ , so if the relative degree of effectiveness is 50 per cent, then the crowding out is around a half. In the limit, if people believe that governments are totally ineffective, then there is no crowding out. If the government takes measures to persuade the public of the relative effectiveness of ODA, then this may have a negative impact on the level of private donations.

The degree of crowding out depends also on the perceived scale of the problem. If the private donor sees ODA as equally efficient ( $\lambda=0$ ), and potential donors and recipients are seen as matched ( $\sigma=1$ ), the degree of crowding out is  $(1-\alpha)$ , or close to 1. If the scale of the problem is perceived as double ( $\sigma=2$ ), then the crowding out is halved. This alerts us to another issue: the difference between the policy of a single donor country and the policies of all donor countries collectively. If the recipients are viewed as world-wide, whereas the ODA is being provided by a subset of donors, then this serves to raise  $\sigma$ . There is more likely to be crowding out from a general agreement among all Development Assistance Committee members to raise ODA than from the decision to raise ODA by a single country.

##### *Tax relief*

An increase in the proportion,  $\theta$ , of gifts allowed as a tax deduction has the effect of increasing individual giving; it has however a cost in terms of foregone

revenue. If we suppose that the lost revenue is subtracted from ODA, then the net effect is given by the change in  $d(1-t\theta)$ . From equation (10), with everyone identical, we can see that this is positive: an increased charitable deduction raises the net transfer. It should however be stressed that this is an artefact of the particular functional form, which constrains the “price” elasticity to be greater than 1. An alternative functional form could give the reverse answer.

### *Public awareness and perceptions*

If the government wishes to stimulate private giving for development, then it can do so by persuading the public that both private giving and ODA are more effective as a result of reduced leakages. From (10), we can see that reducing  $\ell$  has the effect of increasing  $d$ . Reducing the perceived leakage from a half to a third has the effect of reducing the term subtracted by a quarter. In this respect, positive publicity surrounding ODA will work in the direction of increasing private overseas giving.

The government can increase public awareness of the scale of the development problem. This can operate in two ways. From (10), giving is an increasing function of  $\sigma$ , so that government (as well as development charities) can increase private giving by making people aware that the problem is one of large scale. In the same way, the government can make people aware of the low current levels of living ( $\pi_0$ ), which has the effect of raising giving.

### *Social welfare in the presence of private giving*

I now consider the position of the government of a single country of  $v$  (less than  $n$ ) potential donors, where the transfers via private giving or ODA are made to  $r$  recipients who are overseas. How should its policy with regard to ODA be influenced by changes in private giving? Here I am concerned with the normative arguments, so that we need to begin by considering the national social welfare function of this donor country.

The national social welfare function is assumed here to be the sum of elements corresponding to individual welfares. (It would also be interesting to examine non-welfarist approaches.) I assume initially that the population consists of  $v$  identical individuals, all with the same income, the same taste parameters, and the same perceptions of the development problem. In the identification model (with  $m = 1$ ), the individual utility function, maximised by the individual donors, is made up of two elements:

$$U \equiv (1-\alpha)\log\{y(1-t)-d(1-t\theta)\} + \alpha\log\{\pi_0 + (1-\ell)g(1-\lambda)/\sigma + (1-\ell)d\} \quad (11)$$

----- A -----                      ----- B -----

How should the two elements (A and B) enter the national social welfare function? Different positions have been taken. The first position is simple: the social welfare function aggregates the individual utility derived from consumption, and

ignores the concern for others embodied in the second term. We only sum the terms A. This has obvious appeal in certain situations. If the second element captured *negative* feelings towards others, then we would have little hesitation in ignoring such feelings of jealousy. But there are also those who argue that we should ignore the second term where the feelings are *positive*. In his discussion of warm glow preferences for giving for public goods, Diamond notes that “the fact that warm glows improve the description of individual behaviour does not necessarily imply that social welfare should be defined including warm glows” (2006, page 915). In part, his counter-arguments are specific to the warm glow formulation, treating it as a concern with process rather than outcome, whereas here I have adopted an outcome interpretation of giving for development. But in terms of outcomes, too, Diamond is critical of the inclusion of the second term. In part, his argument, drawing on Hammond (1987), is that inclusion of these private redistributive motives involves double counting, since the consumption by others is already included in the social welfare function. In the present case, however, there is no double counting since the recipients are assumed to be in a different country. The only way in which they can enter is via the second term, B.

### *Optimal ODA*

In view of these considerations, I take the case where the national social welfare function contains both elements: it is the sum of  $U$ . This has the implication that variations in  $d$  have no first-order impact on social welfare, since individual donations are chosen to maximise  $U$ . Where donations are tax deductible, changes in  $d$  do affect the government budget constraint, which is given by, where  $vR_0$  is the total revenue required for other purposes:

$$gv + R_0v = t(y - \theta d)v \quad (12)$$

It follows that the tax rate has to be adjusted to finance increases in  $g$  according to

$$[(y - \theta d) - t\theta \partial d / \partial t] dt/dg = 1 - t\theta (-\partial d / \partial g) \quad (13)$$

Differentiating  $U$  with respect to  $g$ , and substituting for  $dt/dg$ , shows that social welfare increases or decreases with a rise in  $g$  according to

$$U_2 (1 - \ell)(1 - \lambda)/\sigma > \text{or} < U_1 [1 - t\theta (-\partial d / \partial g)] / [1 - t\theta \partial d / \partial t / (y - \theta d)] \quad (14)$$

In this expression,  $U_1$  denotes the derivative of  $U$  with respect to consumption and  $U_2$  the derivative with respect to the consumption of the recipient. The general first-order condition for individual choice of giving is that

$$(1 - \ell) U_2 = (1 - t\theta) U_1 \quad \text{or} \quad (1 - \ell) U_2 < (1 - t\theta) U_1 \text{ and } d = 0 \quad (15)$$

Where private donations are positive, the condition for social welfare to increase with  $g$  becomes

$$(1 - \lambda)/\sigma (1 - t\theta) > [1 - t\theta (-\partial d / \partial g)] / [1 - t\theta \partial d / \partial t / (y - \theta d)] \quad (16)$$

Where there is no tax relief for donations ( $\theta=0$ ), the condition reduces to a simple comparison of effectiveness. Increases in ODA raise social welfare if  $\rho \equiv (1-\lambda)/\sigma > 1$ . This means that, even where ODA is regarded as just as effective as private charity ( $\lambda=0$ ), this condition can only be satisfied where  $\sigma$  is less than 1: i.e. the scale of the problem has to be within the reach of the donor population. In interpreting this condition, we have to bear in mind that  $\sigma$  is now  $(r/v)$ , and that the contribution of a single country is less than that of all donors. The parameter  $\rho$  may be seen as a measure of the overall impact of ODA on securing improved living standards for the village with which the representative donor identifies, relative to that of private giving. This impact may of course be greater if the country targets its ODA towards countries with which its citizens identify. It should also be noted that the formulation of social welfare in terms of individual utility has the consequence that it is *perceived*, rather than actual, effectiveness of ODA that determines the optimal response.

If we now assume from this point that full tax relief is given ( $\theta=1$ ), as is indeed the case in many countries, the expression (16) also simplifies, since  $d$  does not depend on the tax rate. With the specific logarithmic form of the utility function used here,

$$\partial d / \partial g = - (1-\alpha)\rho \quad (17)$$

Substituting into (16), and re-arranging, the condition for social welfare to increase with  $g$  becomes

$$t\alpha < 1 - 1/\rho \quad (18)$$

ODA has to be more effective, in the sense described earlier, for the right hand side to be positive, and the tax rate required to raise revenue for other purposes has to be sufficiently small. On the other hand, with a small private willingness to support overseas development ( $\alpha$  small), (18) may be satisfied for all  $t$ . An interior solution for  $t$  only exists where  $1 < \rho < 1/(1-\alpha)$ . Where there is an interior solution, the tax rate and level of ODA are given by

$$t = (1 - 1/\rho)/\alpha \quad \text{and} \quad g = [(1-\alpha)(1-1/\rho)\{y+\pi_0/(1-\ell)\}-\alpha R_0] / [1-\rho(1-\alpha)] \quad (19)$$

The tax rate and  $g$  rise with the impact of ODA ( $\rho$ ), and are lower the greater private willingness to give for development ( $\alpha$ ). The latter is not evident, as an increase in  $\alpha$  both raises private donations, reducing the need for ODA, and increases the weight of the welfare of recipients in the social welfare, which operates in the opposite direction. Increased need for revenue for other purposes ( $R_0$ ) reduces the level of ODA, there being no change in the tax rate.<sup>6</sup> Conversely, an increase in the level of income ( $y$ ) leaves the tax rate unchanged but a fraction of the increase is allocated to ODA.

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<sup>6</sup> One purpose of the revenue requirement may be to finance a tax exemption (or basic income). Mirrlees (2005) describes how in a population with different income levels an increase in ODA may optimally be financed by a reduction in the tax exemption level (basic income) rather than by an increase in tax rates. He gives conditions for the optimal linear tax rate being independent of the level of government expenditure.

### *Differing preferences with regard to charitable giving*

In the case where everyone is identical, and all give or no one gives, it is not surprising that the main factor influencing the optimal level of ODA is a comparison of relative effectiveness. I now assume that the population consists of two types, one type are potential donors, and the other type have  $\alpha = 0$  and make no donations. The former are assumed to be a fraction  $\gamma$  of the population. Social welfare is the sum of  $\gamma$  times the utility of donors, where there are two components, and  $(1-\gamma)$  times the utility of non-donors, in which case there is simply the utility derived from consumption.

Where there is no tax deductibility, the condition for an increase in  $g$  above zero to raise social welfare becomes

$$\rho > 1 + [(1-\gamma)/\gamma][1 + \{\pi_0/\gamma(1-\ell)\}/(1-t)] \quad (20)$$

There is a higher hurdle to cross (previously the condition was  $\rho > 1$ ) for two reasons. The first is that assistance to people in need abroad now receives less weight in the social welfare function, since only a fraction  $\gamma$  attach value to this aid. The second is that the marginal cost of foregone consumption is now higher for the  $(1-\gamma)$  non-donors. On the other hand, we can see that an increase in the proportion of private donors,  $\gamma$ , has the effect of lowering the hurdle. In this sense, the government should respond by increasing ODA if there is increased support for development charities.

### *How should governments respond to increased individual giving?*

In recent years there has been heightened awareness of the needs of developing countries. For example, the Commission for Africa, chaired by Tony Blair, widely publicised the ways in which Africa is being left behind by global development. If this has led to a shift in private willingness to give for overseas development, how – if at all – should government policy react?

From the earlier results, we can see that the effect could go either way. Where everyone is identical, and already giving, a rise in the weight  $\alpha$  attached to the utility derived from aid has the effect, in the interior case, of lowering the tax rate chosen and the level of ODA. The more weight people attach to development, and the more that they give, the less the case for ODA. There is reverse crowding out. On the other hand, we have just seen that a rise in the proportion of donors (a rise in  $\gamma$ ) has the effect of making it more likely that an increase in ODA has a positive effect on social welfare, and raises the tax rate chosen where there is an interior solution.

This section's discussion of optimal policy design has led to a number of results, but it serves also to highlight a number of issues surrounding the welfare criterion applied. I have already referred to the debate surrounding the inclusion of the private utility derived from giving for development, and to the use of perceptions of aid effectiveness. We need also to consider the relative treatment of citizens within the donor country. As has been discussed by Dasgupta and Kanbur (2007), the proper treatment of donors and non-donors raises a number of serious issues. Do we measure inequality within the donor country taking account of the utility derived from giving?

## 6. Conclusions

Neither of the standard models of charitable behaviour used by economists appears wholly satisfactory as a basis for explaining giving for development. We need to combine the scale of the warm-glow approach with the results focus of a public goods formulation to yield an explanation of giving in the case of large populations. I have suggested a new “identification” model that provides one way in which this can be done. This model can explain individual giving for development in a world where there are large numbers of potential recipients and large numbers of potential donors. The model introduces a number of elements missing from the standard treatments of charitable giving, including the extent of leakage and perceived effectiveness of official development aid.

The identification model provides a framework to examine a number of key public policy issues. Do government transfers in the form of Official Development Assistance (ODA) crowd out private giving? It has been shown that if the government demonstrates greater efficiency in the application of ODA this may reduce individual giving, but that if government makes people more aware of the scale of the problem, this has the reverse effect. The model has been used to characterise the optimal level of ODA. It throws light on the response of government giving to increased willingness by individuals to provide private help for development. The normative conclusions do however raise issues concerning the specification of the welfare function that need to be further discussed.

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