

## CONDITIONING AID ON SOCIAL EXPENDITURES

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Aid conditionality forces countries to adopt policies that they would not otherwise choose. We examine how government discretion should be so constrained when the donor cannot fully control public expenditures, but instead can influence a less disaggregated indicator of public policy, namely the allocation of public spending between the social sectors (e.g. education, health, etc.) on the one hand and more traditional public goods (e.g. infrastructure) on the other. We first show how budget allocations will be altered when recipient government preferences are known – i.e. we characterize what policies the donor should “buy” – and how a given aid budget should be allocated between different types of countries. When recipient government preferences are not known by the donor, the permitted policies are distorted due to incentive constraints, and the extent to which aid flows are optimally differentiated between different countries is reduced.

### 1. INTRODUCTION

HOW SHOULD the uses of foreign aid flows to poor countries be constrained, if at all, by external donors? This issue lies at the heart of International Monetary Fund (IMF) conditionality decisions, as incorporated for example in the structure of Poverty Reduction and Growth Facility (PRGF)-supported programs in sub-Saharan Africa (SSA), and is reflected in the design of World Bank and donor-financed budget support within the context of Poverty Reduction Strategies. This paper provides a framework in which first to formally assess the link between the level and uses of foreign aid in a given recipient country, and second, given this link, to inform the allocation of aid across heterogeneous countries.

The composition of the use of foreign aid can be examined at a number of levels ranging from macro to micro. At the highest level is the decision over how much of a given aid inflow should be “absorbed” – that is, how much (current) net imports should increase, the alternative being simply to add the inflow to the country’s foreign exchange reserves.<sup>1</sup> At the next level one can ask what share of absorbed aid should be “spent” – that is, added to net public sector spending, as opposed to reducing domestic debt. Finally, the sectoral composition of public expenditure itself can be conditioned on the

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<sup>1</sup>See IMF (2005) for an exposition of the institution’s “spend and absorb” terminology.



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1 receipt of aid, for example focusing on the “social sectors” (usually this  
2 means health, education, and social protection/insurance).

3 A recent review of aid to SSA (IMF, 2007) examined these issues within  
4 the context of PRGF-supported programs. For example it found that “SSA  
5 PRGFs programmed an immediate absorption of [on average] 63% of anti-  
6 cipated aid increases” (p. 7). However, this average hides important het-  
7 erogeneity – countries with reserves amounting to more than 2.5 months of  
8 imports were programmed to absorb fully 100% of aid increases, while those  
9 with lower reserves were permitted to allocate only 5% of aid to increased  
10 imports. Clearly conditionality is differentiated by country conditions. There  
11 was further heterogeneity among those countries that were programmed to  
12 absorb all aid increases: among those with inflation rates below 5%, 79% of  
13 anticipated aid increases were directed to a net fiscal expansion; for countries  
14 with inflation above 5%, however, 85% of aid was devoted to domestic debt  
15 reduction (p. 9). Finally, at the sectoral level, PRGFs are expected to sup-  
16 port “a reorientation of government spending towards the social sectors,  
17 basic infrastructure or other activities that demonstrably benefit the poor”  
18 (p. 15), and some PRGFs have included conditionality on so-called poverty-  
19 reducing expenditures (PREs).<sup>2</sup> The IMF reports that “[b]y all accounts,  
20 public spending for infrastructure fared less well than education and health  
21 during the evaluation period” and that “the increasingly widespread view is  
22 that SSA’s public-expenditure ‘pendulum’ has gone too far in the direction  
23 of *pro-poor* spending for safety net programs, at the expense of *pro-growth*  
24 spending for infrastructure” (p. 16). As well as providing a prescriptive fra-  
25 mework in which to assess optimal conditionality, the model in this paper  
26 rationalizes why expenditure allocations may, in some cases, be distorted in  
27 the direction suggested above.

28 We argue that it is often useful to examine these conditionality decisions  
29 as constraints on the choice between spending on private and public goods.  
30 At the macroeconomic level, adding aid inflows to central bank reserves  
31 provides insurance against future fluctuations in foreign exchange receipts  
32 (due to volatility in either export earnings or aid), while retiring domestic  
33 debt can reduce interest rates and inflation. Both of these uses of resources  
34 have strong public good features. Similarly, the benefits of some kinds of  
35 public spending (e.g. infrastructure) are more broadly distributed than  
36 others (e.g. health services). Our formal model below examines the alloca-  
37 tion of public spending across sectors, but this can be easily reinterpreted to  
38 inform the allocation of aid to foreign reserves, or the allocation of absorbed  
39 aid to public spending. For the purposes of our analysis, the important  
40 distinction between public and private goods is that the benefits of the

41 <sup>2</sup>PREs are defined at the country level, so are not uniform across countries. PRGFs in Chad,  
42 Guinea, Rwanda, and Uganda included PRE performance criteria, while those in Benin, Ghana,  
43 Malawi, Mauritania, and Sierra Leone included benchmark and/or indicative targets (footnotes  
44 41 and 43, p. 15).

1 former *cannot* be explicitly targeted to individuals, while those of the latter  
2 can be. While this assumption is somewhat extreme – many health and  
3 education expenditures have the features of local public goods, and most  
4 forms of infrastructure spending are less than national in coverage – the  
5 simple idea is nonetheless robust: social sector spending can be more easily  
6 targeted than infrastructure spending.

7 As Bevan (2007) has pointed out, the fact that conditionality is desirable  
8 (to the donor) “indicates either some failure in the budget process, or some  
9 failure of governance more generally” (p. 2). Undesirable budget allocations  
10 may arise due to failures in the budget process itself, deriving either from  
11 inertia or shortcomings in the political process, or more simply due to the  
12 fact that donor preferences differ to those of recipient governments. This  
13 latter rationale for conditionality is the one we adopt in this paper – donors  
14 are focused on improving the wellbeing of the poor, while recipient gov-  
15 ernments care about both the poor and non-poor. The adoption of the  
16 Millenium Development Goals, and the PRGF and PRS approaches sug-  
17 gests that this is a reasonable description of donor objectives.

18 We examine the question of optimal conditionality as an issue of contract  
19 design under various informational assumptions. Our approach is closest to  
20 the recent work of Azam and Laffont (2003) and Kanbur and Tuomala  
21 (2001), and also complements the ideas of Svensson (2003). Following  
22 Svensson, we examine the allocation of an aid budget among different  
23 members of a group of aid-receiving countries. Consistent with Azam and  
24 Laffont we allow for heterogeneity in government preferences across po-  
25 tential recipients of aid, and examine the optimal conditional aid policy  
26 when preferences are private information. In line with this and other papers  
27 (e.g. Adam and O’Connell, 1999; Cordella et al., 2003; Svensson, 2000),  
28 we assume that donor and recipient government preferences for poverty  
29 reduction differ. However, in contrast to much of the existing theoretical  
30 literature, which assumes that aid allocations can be made conditional on  
31 the consumption of the poor, we assume that conditionality is a function  
32 of the categorical make-up of aggregate public spending as described above.  
33 Recent debt relief initiatives have included requirements that the effective  
34 transfer of resources be used to finance such spending.<sup>3</sup>

35 Because we assume that transfers can be made conditional only on ag-  
36 gregate social sector spending, and not its allocation between the rich and  
37 the poor, our model incorporates a moral hazard component that is absent  
38 from the model of Azam and Laffont, in addition to the adverse selection

39 <sup>3</sup>It is rare for international donors to condition aid transfers directly on the distributional  
40 characteristics of government expenditure. For example, aid and development loan allocations  
41 issued through the World Bank are often informed by the Bank’s “public expenditure reviews”  
42 that analyze the structure and sectorial allocation of government spending. While these reviews  
43 attempt to assess the distributional impact of public spending, they often rely on sectoral ex-  
44 penditure allocations to judge public spending patterns.



1 fulfillment of these money-for-policy trades is often incomplete. Recipient  
2 countries backtrack, circumstances change, and as far as donors are con-  
3 cerned the return on aid disbursements seems negligible. Here we assume  
4 that contracts are costlessly enforceable.

5 Empirical analyses (e.g. Burnside and Dollar, 2000; Casella and Eichen-  
6 green, 1996; Collier, 1997, 1999) have emphasized the importance of timing  
7 the delivery of aid correctly and of choosing the “right” countries to support  
8 – that is, a focus on so-called “selectivity.” Indeed, one of the aims of the  
9 U.S. government’s recent Millennium Challenge Grants program is to focus  
10 aid on fewer countries that are deemed to be likely to use it more effectively.  
11 Certainly, buying policy reforms from governments that are willing and able  
12 to deliver is more likely to lead to positive development impacts, but it does  
13 risk marginalizing needy citizens in countries with political elites that are  
14 either severely capacity constrained, or simply less reliable development  
15 partners. This strand of the literature highlights the heterogeneity of re-  
16 cipient governments, a feature that is integral to our model.

17 A complementary strand of the literature (e.g. Svensson, 2003) has fo-  
18 cused on the incentive constraint on donors themselves. In this analysis,  
19 donor support is a two-stage process, whereby development assistance funds  
20 are first committed then disbursed. If it is not possible to reverse commit-  
21 ments, the opportunity cost of disbursing funds to an under-performing  
22 country is zero, and the threat of non-disbursement is not credible. Recipient  
23 governments then have little incentive to deliver on their side of the bargain.  
24 Svensson suggests pooling committed development assistance funds across  
25 countries, allowing disbursements to respond to comparative performance,  
26 thereby increasing the opportunity cost of disbursing aid to a non-  
27 performing country.<sup>4</sup>

28 Finally, it is important to recognize the problem of fungibility of aid, and  
29 that conditionality is essentially meaningless if it is incomplete. Specifying  
30 how aid should be used is only useful if the donor knows what tax and  
31 spending policies would have been adopted in the absence of aid. In principle  
32 the donor could condition receipt of a given aid package on the size and  
33 allocation of the entire government budget, and indeed the shift to budget  
34 support allows this to some extent. In this paper, we assume the recipient  
35 government has no other source of revenue, so in the absence of aid there  
36 would be no public spending. The share of aid in the budgets of many  
37 countries in SSA is sufficiently large that we believe these fungibility issues  
38 can be dealt with in practice.

39 The next section presents the formal description of the preferences of  
40 individuals, country governments, and the donor agency, and derives the  
41 government’s optimum public expenditure program for a given aid policy.

42 <sup>4</sup>See also Federico (2004) for a model of foreign aid in the presence of time consistency  
43 constraints.

Section 3 examines the second-best policy of the donor, when it can observe the preferences of recipient governments, but still relies on them to implement policy choices. Section 4 solves the third-best problem, when recipient country government preferences are not known by the donor. Section 5 briefly concludes with a review of the implications of the model for aid conditionality.

## 2. SOCIAL EXPENDITURES AND DONOR WELFARE

All individuals have the same preferences over a public good  $g$ , and a publicly provided social service  $s$ . An individual's utility of a bundle  $(g, s)$  is assumed to be additively separable, with

$$u(g, s) = f(g) + \phi(s).$$

The marginal utility of each good is positive and declining,  $f', \phi' > 0$ ,  $f'', \phi'' < 0$ , and  $f'(0) = \phi'(0) = \infty$ . All governments and donors know, and agree on, the impacts of the public good and social services on utility. Given a total country per capita budget  $t$ , and expenditure  $g$  on the public good, the per capita social service budget  $\bar{s} = t - g$  is allocated between the poor and the non-poor by the country government in order to maximize the government's assessment of social welfare,  $W(g, s_p, s_n; \beta) = \beta\sigma u(g, s_p) + (1 - \beta)(1 - \sigma)u(g, s_n)$ , where  $\sigma$  is the share of population that is poor, and  $\beta$  is the weight the government puts on their wellbeing. We define the maximum welfare function

$$v(g, \bar{s}; \beta) = \max_{s_p, s_n} W(g, s_p, s_n; \beta) \quad \text{s.t.} \quad \sigma s_p + (1 - \sigma)s_n \leq \bar{s}.$$

Let us further assume  $\phi(s) = s^a$ ,  $a < 1$ . The government's optimal allocation of the social sector budget then satisfies

$$s_n = \frac{\bar{s}}{[\sigma\psi + (1 - \sigma)]}, \quad s_p = \psi s_n = \frac{\psi\bar{s}}{[\sigma\psi + (1 - \sigma)]},$$

where  $\psi = (\beta/(1 - \beta))^{1/(1-a)}$ . The maximum function is then

$$\begin{aligned} v(g, \bar{s}; \beta) &= [\beta\sigma + (1 - \beta)(1 - \sigma)]f(g) + \left[ \frac{\beta\sigma\psi^a + (1 - \beta)(1 - \sigma)}{(\sigma\psi + (1 - \sigma))^a} \right] \bar{s}^a \\ &= \gamma f(g) + \zeta \bar{s}^a, \end{aligned}$$

where

$$\gamma = [\beta\sigma + (1 - \beta)(1 - \sigma)]$$

and

$$\zeta = \left[ \frac{\beta\sigma\psi^a + (1 - \beta)(1 - \sigma)}{(\sigma\psi + (1 - \sigma))^a} \right].$$

The welfare implications of this expenditure policy by a government of type  $\beta$ , as assessed by the donor, are summarized in the donor's welfare function

$$\begin{aligned} \omega(g, \bar{s}; \beta) &= \sigma u(g, s_n) \\ &= \sigma f(g) + \bar{\zeta} \bar{s}^a, \end{aligned}$$

where  $\bar{\zeta}(\beta) = \sigma [\psi / (\sigma\psi + (1 - \sigma))]^a$ , which is increasing in  $\beta$ .

In what follows, we will find it useful to express government and donor preferences over the total per capita budget  $t$  of a country, and expenditure on the public good,  $g$ . Thus let

$$\begin{aligned} V(g, t; \beta) &= v(g, t - g; \beta) \\ &= \gamma f(g) + \zeta(t - g)^a \end{aligned} \tag{1}$$

and

$$\begin{aligned} \Omega(g, t; \beta) &= \omega(g, t - g; \beta) \\ &= \sigma f(g) + \bar{\zeta}(t - g)^a. \end{aligned} \tag{2}$$

### 3. OPTIMAL AID WITH FULL INFORMATION

In this section we examine the optimal allocation of aid funds when the donor can observe, and condition transfers on, the type of government. First we investigate the optimal conditionality requirement for a given level of aid, then use this to determine how the level of transfers should differ across countries.

#### 3.1 Optimal Conditionality

A type  $\beta$  government that is free to allocate a budget  $t$  would choose public good expenditure  $\hat{g}(t; \beta)$  to solve

$$\max_g V(g, t; \beta) \quad \text{s.t.} \quad g \leq t.$$

The first-order condition for this problem is

$$\frac{dV}{dg} = \gamma f'(\hat{g}) - \zeta a(t - \hat{g})^{a-1} = 0$$

or equivalently

$$t(\hat{g}; \beta) = \hat{g} + \left( \frac{\zeta a}{\gamma f'(\hat{g})} \right)^{1/(1-a)}. \tag{3}$$

On the other hand, if the donor provides a budget  $t$  to a country with a type  $\beta$  government, it optimally requires expenditure  $g^*(t; \beta)$  on the public good

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to maximize  $\Omega(g, t; \beta)$ .  $g^*$  solves

$$t(g^*; \beta) = g^* + \left( \frac{\bar{\zeta} a}{\sigma f'(g^*)} \right)^{1/(1-a)}. \quad (4)$$

The donor's maximal welfare from optimally conditioning a budget transfer  $t$  to a country with a government of type  $\beta$  is

$$\begin{aligned} \Omega^*(t; \beta) &= \Omega(g^*, t; \beta) \\ &= \sigma f(g^*) + \bar{\zeta}(t - g^*)^a. \end{aligned} \quad (5)$$

It is straightforward to show that

$$\frac{\bar{\zeta}(\beta)}{\sigma} \geq \frac{\zeta(\beta)}{\gamma(\beta)} \quad \text{as} \quad \beta \geq \frac{1}{2}. \quad (6)$$

Comparing (3) and (4) we observe that the donor prefers lower expenditure on the public good (higher social sector spending) than the government,  $g^*(t; \beta) < \hat{g}(t; \beta)$ , if and only if  $\beta > \frac{1}{2}$ . Thus for a given aid transfer  $t$ , if the government is relatively pro-poor, the donor imposes conditions requiring a *larger* social sector budget than the government would choose. On the other hand, if the government is relatively anti-poor, the conditionality clause requires *lower* social sector spending than the government would choose. These comparative static results are illustrated in Figure 1. Relatively pro-poor governments tend to channel a given level of social spending more to the poor, so the donor forces such governments to increase the share of social spending in the budget. On the other hand, it is better to force relatively anti-poor governments to provide more public goods (which benefit all individuals equally) than to allow them to spend on private goods (which would be heavily biased toward the non-poor).

We next consider how the conditionality requirement changes with  $\beta$  and with  $t$ . As  $\bar{\zeta}$  is increasing in  $\beta$ , so too is  $t(., \beta)$  in (4). Equivalently, for a given budget  $t$ , the donor optimally requires governments with higher values of  $\beta$  to spend less on the public good. Conversely, it requires "bad" governments (those with low values of  $\beta$ ) to spend less on social services.

Finally, as the donor increases the budget available to a country with a given type of government it increases the amount of public good spending required, but also allows social sector spending to increase. This can be seen by noting that, due to the concavity of  $f(\cdot)$ ,  $dt/dg^* > 1$ .

### 3.2 Optimal Conditional Aid Allocation

The donor has a per capita aid budget  $T$ , which it is to allocate across countries. There are two types of governments in recipient countries, with  $\beta = \beta_L$ , or  $\beta = \beta_H > \beta_L$ , and the fraction of  $\beta_L$  governments is  $\rho \in (0, 1)$ . The donor allocates aid funds  $t_X$  to each  $\beta_X$  government, conditional on public

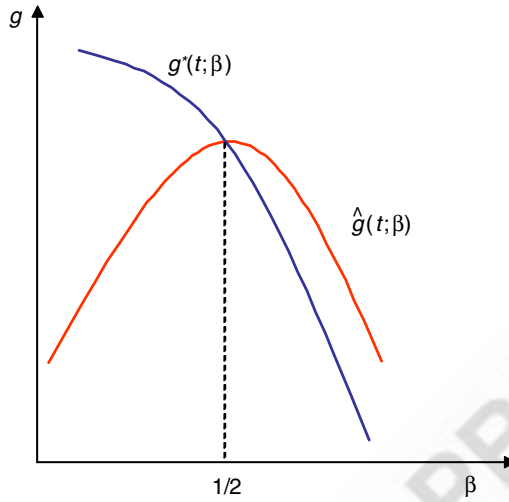


Figure 1. Relatively pro-poor governments ( $\beta > \frac{1}{2}$ ) are optimally required to spend less on public goods than they would like ( $g^*(t; \beta) < \hat{g}(t; \beta)$ ), while relatively anti-poor governments are required to spend more.

good expenditure  $g_X^* \equiv g^*(t_X, \beta_X)$ , for  $X = L, H$ . The donor's maximization problem is

$$\begin{aligned} \max_{t_L, t_H} \quad & \rho \Omega_L^*(t_L) + (1 - \rho) \Omega_H^*(t_H) \\ \text{s.t.} \quad & \rho t_L + (1 - \rho) t_H = T \end{aligned}$$

where  $\Omega_X^*(t_X) \equiv \Omega^*(t_X; \beta_X)$ . The first-order condition for optimal allocations  $(t_L^*, t_H^*)$  is simply

$$\Omega_L^*(t_L^*) = \Omega_H^*(t_H^*).$$

By the envelope theorem and (5),

$$\begin{aligned} \frac{d\Omega_X^*}{dt_X} &= \frac{\bar{\zeta}_X a}{(t_X - g_X^*)^{1-a}} \\ &= f'(g_X^*) \end{aligned}$$

where  $\bar{\zeta}_X = \bar{\zeta}(\beta_X)$ , and the second equality follows from (4). Thus  $t_L^*$  and  $t_H^*$  are chosen so that

$$f'(g_L^*(t_L^*)) = f'(g_H^*(t_H^*))$$

or  $g_L^* = g_H^*$ . From the discussion following equation (5), this implies that  $t_H^* > t_L^*$ .

Thus good ( $\beta_H$ ) governments are rewarded with higher transfers, and both types of government are required to spend the same amount on public goods. Social sector spending in countries with bad ( $\beta_L$ ) governments is lower than that in countries with good governments. Because government welfare (1) is clearly monotonically increasing in  $t$ , this optimal conditional aid allocation policy is implementable only if the donor has full information about governments' types, and can use it explicitly in making the allocation. Under conditions of asymmetric information both good and bad governments will claim  $\beta = \beta_H$ .

#### 4. ASYMMETRIC INFORMATION

The full-information optimum is not incentive compatible, so we must search for the second-best policy that accounts for the implied IC constraints. We show in this section that there are two substantive implications of this for optimal aid allocations. First, the level of aid cannot be differentiated between "good" and "bad" governments as much as under full information. Second, the optimal conditionality clauses induce further distortions to the allocation of aid across sectors. Thus aid is inefficiently allocated both between and within countries compared with the full-information situation.

To start, for a government of type  $\beta$ , we define the marginal rate of substitution between the total budget  $t$  and expenditure on the public good  $g$ , by

$$m(g, t; \beta) \equiv \left. \frac{dt}{dg} \right|_{V=\text{const}} = 1 - \frac{\gamma f'(g)}{\zeta a(t-g)^{a-1}}.$$

The donor's marginal rate of substitution between  $t$  and  $g$ , when expenditure decisions are made by a government of type  $\beta$ , is

$$\mu(g, t; \beta) \equiv \left. \frac{dt}{dg} \right|_{\Omega=\text{const}} = 1 - \frac{\sigma f'(g)}{\bar{\zeta} a(t-g)^{a-1}}.$$

From (6) it follows that

$$\mu \geq m \quad \text{as} \quad \beta \geq \frac{1}{2}.$$

In addition, because  $\bar{\zeta}$  is increasing in  $\beta$ , so too is  $\mu$ . On the other hand, it can be shown that  $\zeta/\gamma$  is decreasing in  $\beta$  for  $\beta \leq \frac{1}{2}$ , and increasing for  $\beta \geq \frac{1}{2}$ , so that  $m$  follows this same pattern – decreasing in  $\beta$  for  $\beta \leq \frac{1}{2}$ , and increasing for  $\beta \geq \frac{1}{2}$ . We can employ standard techniques relying on the Spence–Mirrlees single crossing property to characterize incentive compatible conditional aid allocations only when both  $\beta_L$  and  $\beta_H$  are below  $\frac{1}{2}$ , or when they are both above  $\frac{1}{2}$ . We consider each of these cases in turn below, and briefly discuss the case  $\beta_L < \frac{1}{2} < \beta_H$  in what follows.

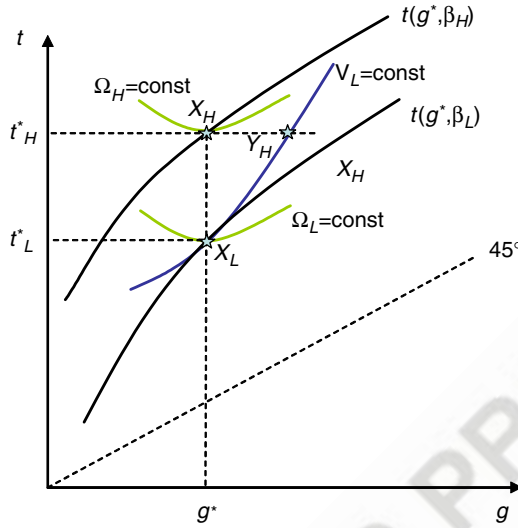


Figure 2. At the full-information optimum both governments spend the same on public goods. Under asymmetric information, when  $\beta_L < \beta_H < \frac{1}{2}$ ,  $\beta_H$  governments must be required to spend more on public goods, at point  $Y_H$ , in order to maintain incentive compatibility.

4.1 Both Government Types Relatively Anti-Poor

The full-information optimum is a pair of conditional transfers  $X_L = (t_L^*, g^*)$ , and  $X_H = (t_H^*, g^*)$  as shown in Figure 2. The curves  $t(g^*, \beta_L)$  and  $t(g^*, \beta_H)$  depict points satisfying equation (4), while  $V_L = \text{const}$  and  $\Omega_X = \text{const}$  represent indifference curves for the government and donor, respectively. Clearly  $\beta_L$  governments will prefer the conditional transfer  $X_H$  to  $X_L$ . Only by distorting the expenditure of  $\beta_H$  governments on the public good above that by  $\beta_L$  governments can the donor maintain the dollar transfers  $t_L^*$  and  $t_H^*$ . The conditional transfer to  $\beta_H$  governments  $Y_H$  satisfies this incentive condition.

However, the dollar transfers  $t_L^*$  and  $t_H^*$  are not necessarily optimal with such a distortion to the spending allocation of  $\beta_H$  governments. Indeed, when  $\beta_L < \beta_H < \frac{1}{2}$ , the donor's optimization problem under asymmetric information becomes

$$\begin{aligned} & \max_{t_L, g_L, t_H, g_H} \quad \rho \Omega_L(g_L, t_L) + (1 - \rho) \Omega_H(g_H, t_H) \\ & \text{s.t.} \quad \rho t_L + (1 - \rho) t_H = T \\ & \text{and} \quad V_L(g_L, t_L) \geq V_L(g_H, t_H). \end{aligned} \tag{7}$$

Substituting  $t_H$  from the first constraint, and letting  $\lambda > 0$  be a Lagrange multiplier associated with the second, the donor's unconstrained

optimization problem is to

$$\max_{t_L, g_L, g_H, \lambda} \mathcal{L}(t_L, g_L, g_H, \lambda),$$

where

$$\begin{aligned} \mathcal{L}(t_L, g_L, g_H, \lambda) = & \rho \Omega_L(g_L, t_L) + (1 - \rho) \Omega_H\left(g_H, \left(\frac{T - \rho t_L}{1 - \rho}\right)\right) \\ & + \lambda \left[ V_L(g_L, t_L) - V_L\left(g_H, \left(\frac{T - \rho t_L}{1 - \rho}\right)\right) \right] \end{aligned}$$

with first-order conditions

$$\frac{\partial \Omega_L}{\partial g_L} \Big|_{(g_L, t_L)} = - \frac{\lambda}{\rho} \frac{\partial V_L}{\partial g_L} \Big|_{(g_L, t_L)}, \quad (8)$$

$$\frac{\partial \Omega_H}{\partial g_H} \Big|_{(g_H, t_H)} = \left( \frac{\lambda}{1 - \rho} \right) \frac{\partial V_L}{\partial g_H} \Big|_{(g_H, t_H)}, \quad (9)$$

and

$$\frac{\partial \Omega_L}{\partial t_L} \Big|_{(g_L, t_L)} - \frac{\partial \Omega_H}{\partial t_H} \Big|_{(g_H, t_H)} = - \frac{\lambda}{\rho} \left[ \frac{\partial V_L}{\partial t_L} \Big|_{(g_L, t_L)} - \left( \frac{\rho}{1 - \rho} \right) \frac{\partial V_L}{\partial t_H} \Big|_{(g_H, t_H)} \right]. \quad (10)$$

Condition (8) indicates that at the optimum a small increase in public good spending by  $\beta_L$  governments would have opposite effects on donor-assessed welfare and country-assessed welfare. As  $\mu_L < m_L$ , this implies that public good spending by  $\beta_L$  governments is below what the donor would otherwise prefer, given the transfer  $t_L$ , but it is above what the recipient would prefer. Differentiating (1) and (2), condition (10) simplifies to

$$\left( \bar{\zeta}_L + \zeta_L \frac{\lambda}{\rho} \right) (t_L - g_L)^{a-1} = \left( \zeta_H + \zeta_L \frac{\lambda}{\rho} \right) (t_H - g_H)^{a-1}.$$

Because  $\bar{\zeta}_L < \zeta_H$ , it follows that  $(t_L - g_L)^{a-1} > (t_H - g_H)^{a-1}$ . But the right-hand side of (10) is  $-(\lambda/\rho)\zeta_L \left[ (t_L - g_L)^{a-1} - (t_H - g_H)^{a-1} \right]$ , so the left-hand side is negative. That is,

$$\frac{\partial \Omega_L}{\partial t_L} \Big|_{(g_L, t_L)} < \frac{\partial \Omega_H}{\partial t_H} \Big|_{(g_H, t_H)}.$$

Countries with  $\beta_L$  governments thus receive relatively more aid than they would otherwise (given the level of public good spending required), and those with  $\beta_H$  governments receive relatively less. Bad governments earn a rent at the expense of good governments due to the information asymmetry, and aid transfers are not differentiated as much as they would be under full

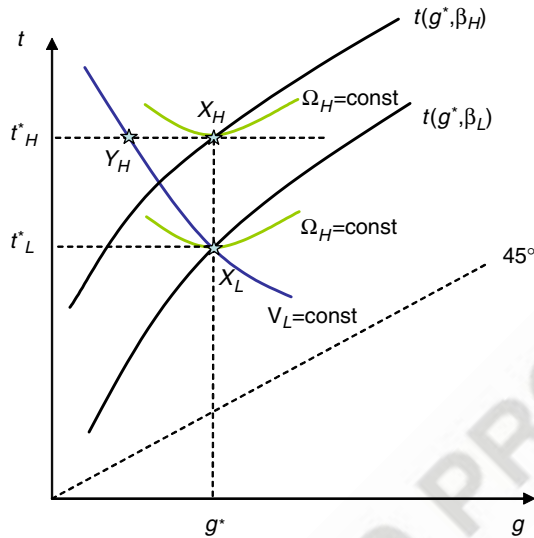


Figure 3. When  $\frac{1}{2} < \beta_L < \beta_H$ ,  $\beta_H$  governments must be required to spend *less* on public goods in order to maintain incentive compatibility.

information. Because  $\beta_L < \beta_H < \frac{1}{2}$ , given the transfers  $t_L$  and  $t_H$ , both  $\beta_L$  and  $\beta_H$  governments are permitted to spend less on the social sectors than they would prefer. However, *from the donor's perspective*,  $\beta_L$  governments are required to spend *too much* on the social sectors, and  $\beta_H$  governments are required to spend *too little* on them.

#### 4.2 Both Government Types Relatively Pro-Poor

When  $\frac{1}{2} < \beta_L < \beta_H$ , the marginal rate of substitution of a  $\beta_L$  government is less than that of the donor,  $m_L < \mu_L$ . Thus the incentive constraint continues to bind for  $\beta_L$  governments, but the donor optimally distorts the public good expenditure by  $\beta_H$  governments below the otherwise optimal level. For example, if it were to maintain the full-information optimal dollar transfers,  $t_L^*$  and  $t_H^*$ , then  $\beta_H$  governments would receive the conditional transfer  $Y_H$  as shown in Figure 3.

The donor's constrained maximization problem, and the associated first-order conditions are the same as in program (7) and conditions (8)–(10), respectively. However, now as  $\mu_L > m_L$ , condition (8) implies that public good spending by  $\beta_L$  governments is above what the donor would otherwise prefer, given the transfer  $t_L$ , but it is below what the recipient would prefer. Thus  $\beta_L$  governments are required to spend more on social services than they would like, but  $\beta_H$  governments are required to spend even more. In fact, even though  $\beta_H$  governments receive more aid than  $\beta_L$  governments, they are permitted to spend less on the public good.

### 4.3 Discussion

Asymmetric information, or more generally the inability of a donor to explicitly condition aid transfers on a government's type, introduces distortions to public expenditure allocations. The directions of these distortions differ, depending on whether both governments are thought to be relatively anti-poor, or relatively pro-poor. However, the intuition for the nature of the distortions is the same in both cases.

When both governments are relatively anti-poor, the donor favors public goods spending over social sector spending, as it is harder for the government to direct public good spending to the non-poor. However, the asymmetry of information means that the donor cannot force  $\beta_L$  governments to spend as much on public goods as it would like, and that it optimally forces  $\beta_H$  governments to spend too much on them.

The qualitative features of the distortion when both governments are relatively pro-poor are the same. Now the donor favors social sector spending in general, and it would like to force aid recipients to tilt spending in that direction. However, for the same incentive reasons, it finds it optimal not to force  $\beta_L$  governments to spend so much on the social sectors as it would otherwise like. In contrast it forces  $\beta_H$  governments to spend even more on the social sectors than it (the donor) would prefer under full information. Finally, in both cases, because the efficiency of public spending is reduced, the gains (to the donor) of differentiating aid transfers between the two types of recipients are also lower, and aid transfers are closer to uniform than they would otherwise be.

When  $\beta_L < \frac{1}{2} < \beta_H$  the single crossing property does not hold and the optimum under asymmetric information is not easily characterized. To do so requires that significantly more structure be put on individual, and hence government and donor, preferences. One reason that this does not significantly weaken the analysis of the paper is that donors might find it relatively easy to distinguish between two groups of countries – those with very little concern for the poor, and those that are more responsive to the needs of the poor. As long as aid policies can be explicitly differentiated between the two groups, then our analysis holds for each group separately.

## 5. CONCLUSIONS

Aid conditionality forces countries to allocate public expenditures, or more generally to adopt policies, that they would not otherwise choose. This paper examines how government discretion should be constrained when the donor cannot fully control public expenditures, but instead can influence a less disaggregated indicator of public policy, namely the allocation of public spending between the social sectors (e.g. education, health, etc.) on the one hand and more traditional public goods (e.g. infrastructure) on the other. This conditionality instrument is blunt, because aggregate social spending

can be targeted by the government to different individuals, in particular to the poor or non-poor. Nonetheless, as long as the government cares less about the poor than the donor, the donor will wish to force the recipient to spend either more or less on the social sectors than it otherwise would choose, depending on whether the government tends to favor the poor or non-poor, respectively. That is, the donor “buys” certain policies from recipient governments, depending on the concern those governments exhibit for the poor. For example, “bad” governments (who have little regard for the poor) should be required to focus spending on public goods, the benefits of which are less easily diverted to the non-poor. “Good” governments (who favor the poor over the non-poor) are required to focus spending more on the social sectors, as the donor knows that this expenditure will be biased toward those about whom it cares.

If the donor does not know the preferences of the recipient, it faces an additional problem: simply put, it does not know what policy to buy. The incentive problem that emerges is corrected by further distorting the choices available to aid recipients, so that now the donor forces countries to adopt policies that, under full information, even it (the donor) would not want it to follow. This of course does not mean that including conditionality clauses in aid transfers is ineffectual, but does suggest a limitation on their ability to achieve the full potential benefits of conditionality. We have characterized the resulting distortions under two regimes in this paper: first, when both types of governments are relatively anti-poor, and second when both are relatively pro-poor. For example, when dealing with relatively pro-poor governments, the donor will tend to require better governments to spend more on the social sectors than they would like. This could explain the perceived donor bias in favor of social spending in some recipient countries.

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#### REFERENCES

- Adam, C. and S. O’Connell, 1999, Aid, taxation and development in Sub-Saharan Africa. *Economics and Politics* 11, 225–253.
- Azam, J.-P. and J.-J. Laffont, 2003, Contracting for aid. *Journal of Development Economics* 70, 25–58.
- Bevan, David, 2007, Promoting and protecting high-priority public expenditures. Background paper produced for the Working Group on IMF-Supported Programs and Health Expenditures, Global Health Policy Research Network, Center for Global Development.
- Burnside, C. and D. Dollar, 2000, Aid, policies, and growth. *American Economic Review* 90, 847–868.
- Casella, A. and B. Eichengreen, 1996, Can foreign aid accelerate stabilization? *The Economic Journal* 106, 605–619.

- 1 **Q3** Collier, P., 1997, The failure of conditionality, in: C. Gwin and J. M. Nelson, eds.,  
2 *Perspectives on Aid and Development. Policy Essay*, Vol. 22 (ODC, Washington,  
3 DC).
- 4 ———, 1999, Aid ‘Dependency’: a critique. *Journal of African Economies* 8, 528–545.
- 5 Cordella, T., G. Dell’Ariccia, and K. Kletzer, 2003, Conditional aid, sovereign debt,  
6 and debt relief. International Monetary Fund, Research Workshop, Macro-  
7 economic Challenges in Low Income Countries, Washington, DC.
- 8 Federico, G., 2004, Aid and policies under weak donor conditionality. *Journal of*  
9 *African Economies* 13, 395–416.
- 10 International Monetary Fund (IMF), 2005, The macroeconomics of managing in-  
11 creased aid inflows – experiences of low-income countries and policy implications,  
12 SM/05/306, August, International Monetary Fund, Washington, DC ([http://](http://www.imf.org/external/np/pp/eng/2005/080805a.pdf)  
13 [www.imf.org/external/np/pp/eng/2005/080805a.pdf](http://www.imf.org/external/np/pp/eng/2005/080805a.pdf)).
- 14 ———, 2007, *The IMF and Aid to Sub-Saharan Africa* (Independent Evaluation Office  
15 of the IMF, International Monetary Fund, Washington, DC).
- 16 Kanbur, R. and M. Tuomala, 2001, Incentives, inequality and the allocation of aid  
17 when conditionality doesn’t work: an optimal nonlinear taxation approach.  
18 Cornell University Working Paper.
- 19 Lambert, S. and D. Sahn, 2002, Incidence and implications of public spending in the  
20 health and education sectors in Tanzania, in: C. Morrisson, ed., *Education and*  
21 *Health Expenditure and Poverty Reduction in East Africa* (OECD, Paris).
- 22 Svensson, J., 2000, When is foreign aid policy credible? Aid dependence and con-  
23 ditionality. *Journal of Development Economics* 61, 61–84.
- 24 ———, 2003, Why conditional aid does not work and what can be done about it?  
25 *Journal of Development Economics* 70, 381–402.

