Company influence on foreign aid disbursement:
Is conditionality credible when donors have mixed motives?

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CONTENTS

1. Introduction[*]

Empirical evidence indicates that poor countries frequently abstain from implementing the conditions that the donors have set as a requirement for granting foreign aid. Still, it is found that the aid is disbursed irrespective of the recipient's implementation record (Sachs 1989, World Bank 1992, Mosley et al. 1995 , Collier 1997 and Svensson 2000a). The World Bank (1992) concluded that even though the compliance rate on World Bank conditions was only 50 %, the release rate of loans was nearly 100%. In other words, despite the donors' intentions of inducing the recipients to undertake what is perceived by the donor to be "good policies", usually regarding fiscal, monetary and trade policies to increase economic growth, it is found that aid does not induce these policies (Burnside and Dollar 2000).[1] Even more uncontroversial conditions like setting a certain minimum level of expenditures on health care and education seem to fail (World Bank 1992, Mosley et al 1995, Oxfam 1995).

The malfunctioning of conditionality is a serious problem for the donor community and the multilaterals because this instrument is viewed as a necessity for achieving the goals of aid (Kanbur 2000). At the same time, receiving aid is a very important income source for poor countries. On average, aid accounted for more than half of the central government expenditures for fifty of the most aid-dependent countries from 1975-1995 (World Bank 1998b), and a typical low-income country now receives around seven to eight percent of GNP in foreign aid (World Bank 1998a). This gives raise to a puzzle: If it is vital for the recipients to get aid, and also essential for the donor to have the conditions implemented, why cannot the seemingly powerful donors force the seemingly weak recipient to implement the conditions before aid is disbursed?

[1] There is a discussion in the literature about whether or not "good" macroeconomic policies are necessary for aid to induce economic growth. In addition to Burnside and Dollar (2000), see Hansen and Tarp (2000, 2001), and Dalgaard and Hansen (2000).

Ravi Kanbur's (2000) observations as a World Bank representative in Ghana in 1992 illustrate one potential explanation for the failure of conditionality. At this time, the Ghanaian government had refused to implement the conditions set by the World Bank for granting a loan, and the bank had to decide whether or not to disburse this loan. In this situation, private companies that had contracts with the Ghanaian government put pressure on the World Bank to release the loan because they were afraid of not getting paid. Eventually, the loan was disbursed without the implementation of the conditions, and Kanbur concludes that the pressure surrounding conditionality is important in explaining its failure. Thus, strategic recipients may refuse to implement the conditions, and then threaten to cancel contracts with companies in order to put pressure on the donor to disburse aid.

Building upon the triadic[2] modeling structure of Basu (1986), we consider the interdependence that sometimes arises between donors, recipients and large companies with interests in both countries. [3] In this model the donor takes into account both his own and the company's relationship with the recipient when deciding on aid disbursement and, more generally, each of the agents always takes account of the triadic structure when making their decisions. If the recipient can influence the company to put pressure on the donor to disburse the aid, we show that this could make the donor provide the aid even when the recipient has not implemented the conditions. Hence, the recipient is not necessarily as weak as it may seem, because the recipient might be able to utilize the company's influence over the donor.

This paper is related to the literature on foreign aid in general, and to the work on the failure of aid conditionality in particular. Despite its importance, conditionality has received little attention with regards to theoretical modeling (Drazen 2000). The main contribution to the understanding of the failure of aid conditionality is Svensson's (2000c) principal-agent model where he illustrates how altruistic donors' time inconsistency problem gives rise to

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[2] Most models of economics are dyadic, which means that all the agents interact pairwise. In a triadic model, an agent i does not only take account of his relationship with agent j, but also takes account of his own and agent j's relationship with a third agent k. See Basu (2000) for a discussion on dyads and triads.

[3] The main difference between our approach and Basu (1986) is that Basu aims at explaining how a landlord in a rural economy can be able to use a third party (a merchant) to extract a larger surplus from a laborer than would be possible without the third party's influence. Our focus is on foreign aid and, as opposed to Basu's model, we do not operate explicitly with markets. However, the important triadic structure is the same as the rural setting in Basu (1986).

continued aid even when conditions are not implemented.[4] In Svensson's framework, the donor and the recipient share the perception that implementing the conditions improves the wellbeing of the recipient, so the recipient would implement some of the conditions even if the donor did not exist. The failure of conditionality arises because the level of poverty determines the amount of aid, and this gives incentives for the recipient not to implement costly poverty-reducing policy-conditions. Another contribution that illuminates the problem is Mosley et al. (1995) where they model the interaction between the donor and recipient as a dyadic bargaining game. They find that there will always be some slippage on the conditions that the recipient has agreed to implement.

In our model, we incorporate the empirical finding that there are frequently disagreements between the donor and the recipient on what constitutes "good policies" (Mosley et al. 1995, Dollar and Svensson 2000b, Kanbur 2000). The policies stated in the conditions will often harm politically important groups in the recipient country, and this can be critical for the political viability of the implementation of the conditions (Summers and Pritchett, 1993).[5] So we assume, ceteris paribus, that the recipient would prefer not to implement the conditions.

To substantiate the rationale for imposing conditionality, we assume that the donor follows the World Bank (1998a) in adhering to the empirical findings of Burnside and Dollar (2000) that aid only increases economic growth if the right macroeconomic policies are sustained. Thus, the donor conditions aid on these policies believing that implementation of the policy conditions is essential in order to achieve the intended effect from aid. So even if aid has some positive effects if the conditions are not implemented, the donor's assessment is that granting aid is wasted in this situation. With this divergence of opinion, it is not necessary to restrict our focus to Samaritan donors, and this differs substantially from the existing work

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[4] For other principal-agent models that discuss foreign aid, see Pedersen (1996) on how it is crucial for the donor to have the first mover advantage if aid is to increase investment, or Pedersen (2001) for an illustration of how adverse incentive effects of aid may cause poverty to increase due to a Samaritan's dilemma problem. See Drazen (2000) for a survey of the political economy of foreign aid. A related problem to the failure of conditionality is that aid can be fungible, see for example Hagen (2001).

[5] Policy-conditions can yield a change in relative prices, reduced government spending and reduced absorption to achieve external balance, which in turn may hurt or benefit different groups in a country (Summers and Pritchett (1993).

on foreign aid policy where time-inconsistency is crucial (see Mosley et al. 1995, Pedersen 1996, 2001, Svensson 2000c). Hence, our results are not related to the Samaritan's dilemma.

Obviously, as Svensson (2000c) and World Bank (1998a) also note, donors' rationale for giving aid may in reality be guided both by altruistic and self-interest motives. The empirical studies of Burnside and Dollar (2000), Trumbull and Wall (1994) and Alesina and Dollar (2000) all suggest that both motives are present among donors. Thus, we incorporate a self-interest motive and an altruistic motive in the donor's preferences. So if a donor has self-interests with regard to its own domestic industries, and an altruistic motive for maintaining aid conditionality, we show how recipients can grant contracts strategically to companies with origin in the donor country and that this may cause a time-consistent failure of conditionality.

In general, the literature on foreign aid uses traditional dyadic models to explore the donor-recipient relationship, and we show why the triadic framework may be important in explaining the failure when companies are able to influence the donor's disbursement decision. In our model, restricting the donor, the recipient and the company's interaction to be dyadic yields the opposite results in comparison to allowing for triadic relations: Assuming dyadic interactions implies that the recipient is unable to influence the company's eventual pressure on the donor; this causes the recipient to implement the conditions, and conditionality becomes successful. Our framework should thus be regarded as complementary to Mosley et al. (1995) and Svensson (2000c). One novel policy implication that may be important for the players on the foreign aid scene is that this setup provides a rationale for donor guarantees to companies (from the donor countries) that operate in the recipient country.

This paper is organized as follows. The institutional background for triadic interactions in international relations is described in section 2, and a formal game-theoretic framework that models the interdependency between donors, recipient and companies is proposed and analyzed in section 3. Section 4 discusses suggestions for improving the record of conditionality, and section 5 provides some concluding remarks.

2. Institutional background

The literature on international relations offers anecdotal evidence of a number of triadic institutions in the world economy, and in this section we briefly provide some examples of how private companies are used as a third party to influence transactions between two agents. In explaining how parties other than the recipient influence a donor's decision of disbursing a loan, Kanbur (2000) reports his experience in 1992 when the World Bank assessed whether or not to release a tranche to Ghana:

> "In fact, as the representative of the World Bank on the ground, I came under pressure from several sources, some of them quite surprising, to release the tranche with minimal attention to conditionality. There was a steady stream of private sector representatives, domestic and foreign, arguing for release of the tranche both because of fears of what macroeconomic disruption would do to the business climate in general, and also because some of them had specific contracts with the government which were unlikely to be paid on time if the government did not in turn get the money from the World Bank and other donors. …. Yet others found their projects slowing up because government counterpart funds were not available, and many project agreements stipulate that donor money flows in a fixed relationship to government contributions. ... In the end, ... the tranche was released."

This illustrates the potential gain to a recipient of strategically influencing companies and other third parties to put pressure on the donor's disbursement decision. When Ghana's government is aware of this link between the donor and the company, it can effect cuts where it hurts companies most in order to increase the pressure on the donor. So if there is a company with strong ties to the donor waiting for a payment from the recipient, the recipient government could announce that there will be no payment unless the loan is disbursed. If the announcement is credible and the company is able to influence the donor, then the recipient could neglect conditionality and expect that the pressure towards the donor will release the loan. The recipient's actual reason for withholding the payment, whether it is due to lack of liquidity or because the recipient is using strategic behavior, is difficult for the other parties to reveal.

Strategic use of third parties in international lending need not involve donors. Gwynne's (1983) account of his role as a loan officer in an American bank in a ten million dollars loan to a Philippine construction company gives insight into private banking decisions that are seldom revealed to the public. The construction company had a leverage ratio of seven to one, meaning that the debt was so high compared to the equity that, in Gwynne's own words, "it might be pure insanity to make this loan". However, the construction company was going to use the loan to purchase equipment from an American company that was also an old client of this particular bank. The chief financial officer of this equipment company put pressure on the bank's loan officer to grant the loan so they could get the contract with the construction company. Even though it is not explicitly stated, both the bank and the equipment company were aware of the large amounts of funds the bank was administering for the equipment company through demand deposits and pension funds. Ten minutes after a call from one of the executives of the equipment company, emphasizing the importance of the deal, the president of the bank called to put pressure on the loan officer to submit the case to the bank's loan committee, irrespective of the borrower's repayment ability.

It seems clear that no loan would have been approved if it had been just a two-way relationship between the bank and the Philippine construction company. This illustrates the large potential for important customers of a bank to influence the bank's lending decisions to other parties. Lucrative contracts to a firm can imply large deposits to the bank, which in turn enable the bank to expand its lending.

Darity and Horn (1988) discuss similar relationships where American banks' lending to foreign companies was initiated for financing American exports both in the 1920s and the 1970s, particularly for lending to third world companies.[6] As the quote from Lewis (1938)[7] of observations in the 1920s illustrates, the phenomenon of companies securing a contract after influencing banks to grant credit to the company's customer is not a new one: "…big American construction companies [that] sometimes helped finance public works in foreign

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[6] For some indirect support of banks following their customers abroad, see Jain (1986), where he finds strong statistical support for US bank loans to a country and the contemporaneous US investment and trade activity.
[7] Quoted in Darity and Horn (1988).

countries sometimes secured their contracts on a competitive basis after the financing had been arranged."

Similar ties can also be found between multinational companies and their home country governments, particularly because of the national interests attached to exports and to the companies' impact on the domestic economy.[8] Promoting their own companies' interests abroad is often part of a country's foreign policy.

3. Triadic structure

Let us now take a closer look at the difference between a dyadic and a triadic structure. Assume first that there is a traditional bilateral relationship between a donor and the recipient, where the donor adheres to conditionality. From the donor's point of view, maintaining conditionality implies that aid is only disbursed if the recipient has implemented the conditions. In line with the empirical findings, we also assume that the recipient would prefer not to implement these conditions, but subjects to the donor's demand because implementation results in aid being disbursed. Hence, in this pair-wise (dyadic) relationship, conditionality is successful. With these preferences established, we now open the stage for a *third* party that interacts with both of the two other agents. Introducing the third party could alter the outcome between the donor and the recipient so that conditionality fails, and whether we assume triadic or dyadic relations may be crucial for this result as we shall se below.
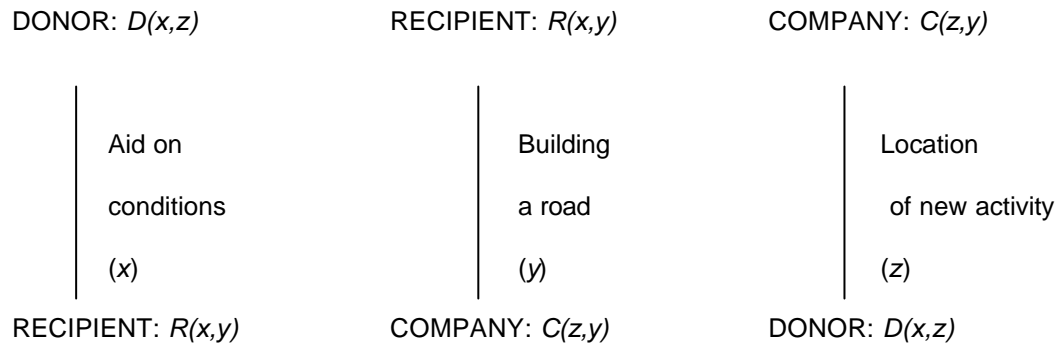
In our setting, the recipient is going to build a road. Let a construction company be the potential constructor and hence the third party. Assume also that the company is large and influential, so it has some leverage on the donor. We could treat the company's influence on the donor as a black box, but for illustrative purposes we assume that the company is about to locate a new project, and that the donor is interested in having this project located in its own country. Note also that the donor is indifferent to whether or not the road is built. Let the aid conditionality relationship be denoted x, building the road y and the location z, and the payoff functions to the donor, recipient and company as $D(x,z)$, $R(x,y)$ and $C(z,y)$, respectively.

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[8] See for instance Cohen (1986), Darity and Horn (1988) and Wellons (1986) on the close relationships between "transnational" banks and the government in the country where the bank's headquarters are situated.

Usually, one would think of the interactions between the three parties as dyadic, and such pair-wise relations between the parties can be illustrated by the following figure:
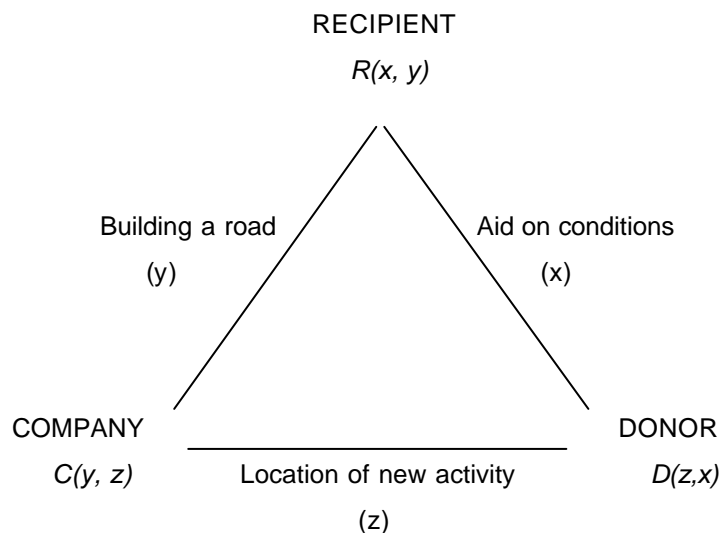
Figure 1. The traditional dyadic relationship

DONOR: $D(x,z)$	RECIPIENT: $R(x,y)$	COMPANY: $C(z,y)$
Aid on	Building	Location
conditions	a road	of new activity
(x)	(y)	(z)
RECIPIENT: $R(x,y)$	COMPANY: $C(z,y)$	DONOR: $D(x,z)$

As can be seen from figure 1, each pair of agents interacts in isolation under the dyadic assumption, which implies that aid conditionality is not influenced by the introduction of the company.

However, assume now that the three agents are not bound to act pair-wise. In a general triadic structure with three agents, each agent's optimization problem does not only take into account its own interaction with the two other agents. In addition, each agent also takes account of the other agents' interaction with each other, as is illustrated in figure 2:

Figure 2. The influence of a third party on the donor-recipient relationship in triadic interactions.

RECIPIENT
R(x, y)

Building a road   Aid on conditions
(y)   (x)

COMPANY   DONOR
C(y, z)   Location of new activity   *D(z,x)*
(z)

The interesting cases in the triadic structure arise when one agent takes actions it would not have taken in traditional dyadic relations. In our triadic setting, the recipient may be able to make the company influence the donor's conditionality decision by making the contract to the company contingent upon the company's pressure towards aid disbursement. Assume that the recipient announces that it will give the road contract to the company only if the company manages to influence the donor to disburse the aid even when the conditions are not implemented. Thus, the company may be forced to use the location decision to influence the donor's disbursement decision in order to secure the contract: The company can let the donor know that it will only locate in the donor country if the donor disburses the aid. If the location is more important to the donor than enforcing aid conditionality, this pressure may cause the donor to disburse aid even if the conditions are not implemented, which is opposite to the result in dyadic relations.

Models of triadic interactions are usually *not* straightforward to solve, and in particular, the literature on triadic models raises important credibility issues. We therefore develop the donor–recipient–company relationship in a formal framework to analyze the interactions.

4. The Model

We use a game-theoretic framework to model the interaction between a recipient, a donor and a company, where the company has business in both the donor's and the recipient's country. In section 4.1 we develop the utility functions for the agents, and section 4.2 describes the payoffs necessary to illustrate the important features of the game. The outcome of the game when assuming dyadic relations shows that conditionality is successful under traditional assumptions of pair-wise interaction. This result is described in section 4.3. Section 4.4 discusses a triadic solution: Even though the recipient's threat of not giving the road contract to the company is not credible in the stage game, it becomes credible under certain conditions when we allow for infinitely repeated interactions. The subgame perfect equilibrium of the infinitely repeated game shows that it is possible for the recipient to lock the donor into repeatedly granting aid even if the conditions are not implemented.

In this game, it is common knowledge that the recipient will link the donor's disbursement decision to the road contract. No threat is explicitly stated, but the agents know that if the donor does not disburse the aid, then the recipient's intention is to refuse to give the contract to the company unless it locates the new activity abroad. This implicit triadic threat is meant to create a pressure towards the donor to give aid even if the conditions are not satisfied, and we will return to the credibility issue.

The timing of the game is as follows. At stage one, the recipient decides whether or not to implement some conditions defined by the donor ex ante, and at stage two the donor chooses whether or not to give aid to the recipient.[9] At stage three, the company decides on whether to locate a new activity in the donor's country, termed "at home", or some other country, which is denoted as "abroad". Finally, at stage four, the recipient decides on whether or not to pay the company for building a road in the recipient's country. The game tree in figure 3 illustrates the feasible actions, which will be elaborated upon in the following sections.

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[9] For other models with recipients as first movers, see Pedersen (1996), Svensson (2000) and Hagen (2001).

Figure 3. The game tree.
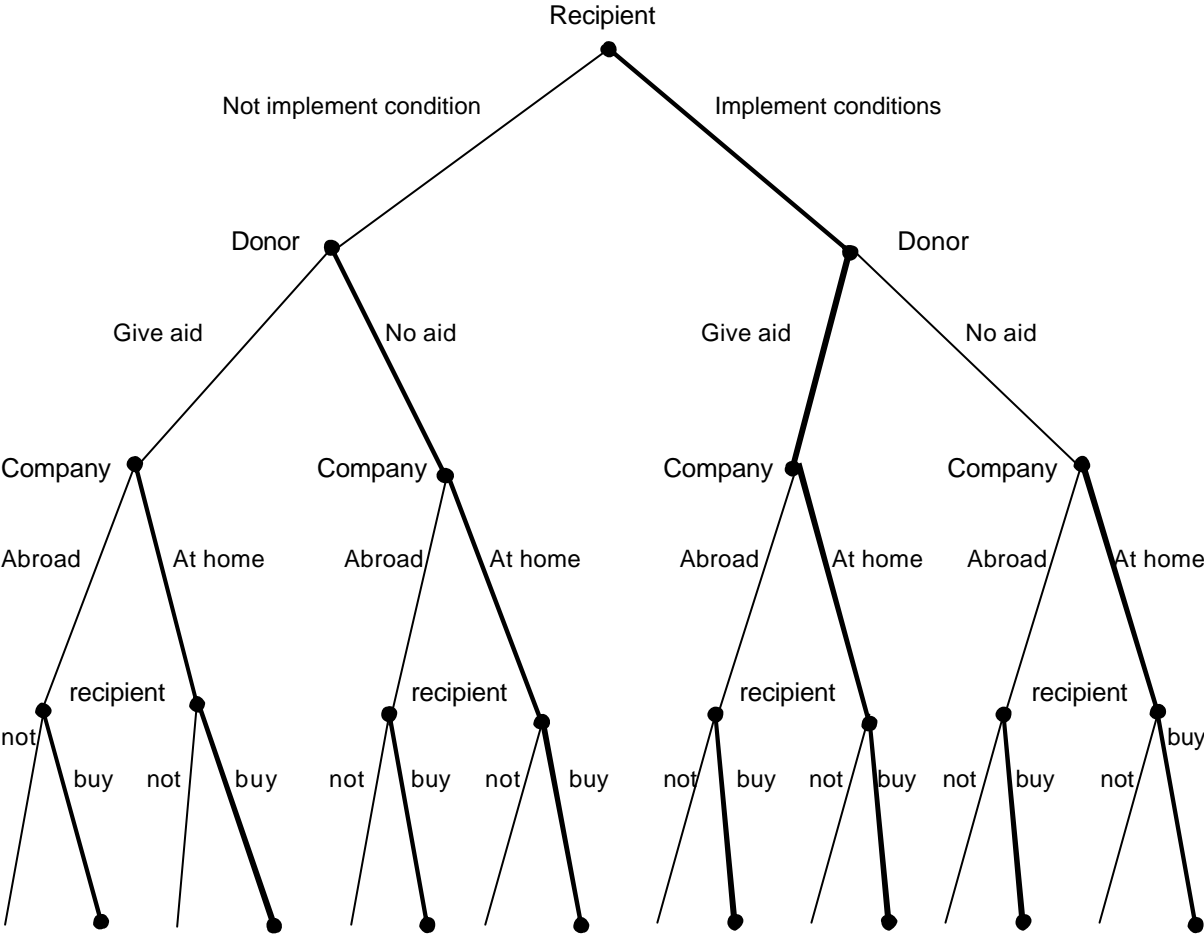
4.1 The general structure of the payoff functions

All three agents are assumed to be rational, forward-looking and acting in a utility- or profit-maximizing manner. The profit of the company can be represented as

(1) $C = C(m, s)$

$$+ \quad +$$

where s denotes the level of activity the company has in the donor country and m is the recipient's payment for the road. The company can choose to allocate its business between the donor's country and some other country different from the recipient. Let $s*$ denote the optimal size of its business in the donor's country. Assume that the company gets an assignment from an agent other than the donor and the recipient. Then the company must choose between locating these new activities to the donor's country, or to some other (third) country. Assume

further that the optimal choice for the company, ceteris paribus, is to locate the new activities to the donor's country, and let the optimal size of the company's activities in that country be denoted s^*. Hence, if the new activities is located elsewhere, this would represent a net cost for the company compared to locating in the donor's country. Let this non-optimal size of the company's activities in the donor's country be denoted by $s^u < s^*$, and let the difference $s^* - s^u$ be interpreted as the cost of locating abroad.

The recipient's payment to the company, m, takes only two values: $m = m_0 = 0$ if the recipient does not buy the road, or $m = m_1 > 0$ if the recipient does buy the road. The price m_1 for the road should be understood as the result of negotiations between the recipient and the company, and hence we can assume that both parties are better off if the road is built for the price of m_1 compared to not having the road built.

The recipient, in addition to being better off paying m_1 and having the road built, also experiences an increase in utility R if the donor grants bilateral aid $a>0$. However, the donor specifies a set of conditions, for instance some "sound" macroeconomic policies, that the recipient must implement in order to receive the aid. Let c be a dummy variable that indicates whether or not these conditions are implemented, let $c_1=1$ denote that the conditions are implemented, and $c_0 = 0$ that they are not.

Even if implementing the conditions would result in increased growth in the recipient's country, we assume that the altered policies would redistribute resources from groups that are favored by the recipient government. Hence, when we incorporate the political costs of implementing conditions, we assume that the net impact on the recipient's utility of implementation is assumed to be negative.[10,11] So, in the absence of aid, or if aid was given

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[10] Net costs from implementing conditions that increase growth could also arise if the conditions also increase inequality, if equality is highly valued by the government. Note also Hansen and Tarp's (2001) empirical finding that aid increases growth irrespective of policies, which implies that implementing the conditions will *not* increase growth. This supports our assumption of negative utility of implementation because in this case there is no gain from growth of implementation, only the political costs.

[11] Empirical studies support our assumption that donors impose conditionality on unwilling recipients (Mosley et al. 1995, Kanbur 2000), and this lies at the heart of conditionality: If the recipient agreed on implementing the conditions, there would be no need for the donor to condition aid on their implementation. The recipient would simply implement the policies irrespective of the aid. Mosley et al. (1995) argue that the recipient will resist any attempt of influence through conditionality that does not harmonise with its own political priorities or economic analysis. Kanbur (2000) also notes that " Conditionality is no doubt "imposed" on unwilling recipients at the time of signing the document...", and Summers and Pritchett (1993) argue that stabilising policies will change relative prices in disfavor of concentrated and visible groups in the recipient country.

unconditionally, the recipient in this model would not implement the policies stated in the conditions. The recipient's utility function can then be expressed as

(2) $R = R(m,\ a,\ c)$

$$+ \quad + \quad -$$

We assume that the donor's utility is increasing in the amount of aid granted if the recipient complies with the conditions. So if the conditions are not implemented, the donor believes it is a waste giving aid because macroeconomic disruption would cause the aid to have no effect. Then the donor prefers not to give the aid. However, if aid is still given in this situation, the donor has a decreasing utility in the amount disbursed because giving more aid means losing more funds. Consistent with the idea of conditionality, this means that, ceteris paribus: (1) It is rational for a donor to grant aid to the recipient if it implements the conditions, and (2) It is rational not to grant aid if the conditions are not implemented.

The idea of conditionality can then be captured in the donor's utility function, D, which, for the sake of simplicity, is assumed to be differentiable: Define the aid conditionality function $h(a,\ c)$ and let D depend on h in that $\partial D/\partial h > 0$, where h is increasing in a if $c = c_1$, and decreasing if $c = c_0$. Since the donor believes that implementation of the conditions yields the best policies for the recipient, the utility of the donor is increased if the recipient were to implement the conditions even in the absence of aid (i.e. $h(a,\ c_0) < h(a,\ c_1)$). The donor's preferences with regard to conditionality can be illustrated in the following figure:

Figure 4. The donor's motive for conditionality (the donor's utility increases in h: $\partial D/\partial h > 0$)

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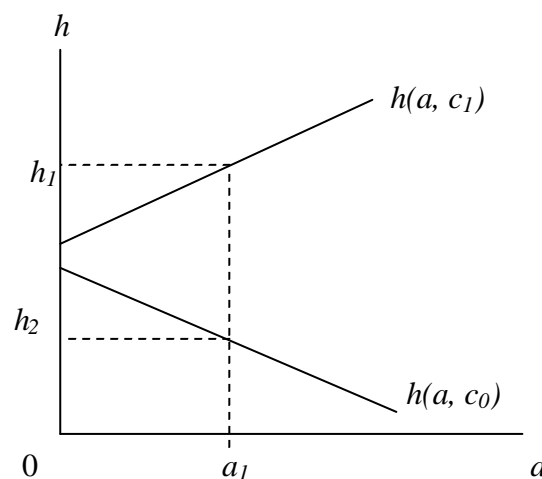
Take any given amount of aid, for example a_1. Note that according to the partial aid conditionality function, the donor would be worse off if it must disburse aid when the conditions are not implemented (h_2), compared to not giving aid in that situation (h_1). In addition, the donor is interested in having as much of the company's activity located in its own country as possible. Hence, the company's scale of business in the donor's country, s, is also included in the donor's utility function, D, which we can state as

(3) $D = D(h(a, c), s)$

The donor's preferences in this model, as stated in (3), then reflect the empirical findings that both self-interest and altruistic motives play a role for the donors (Trumbull and Wall 1994, Alesina and Dollar 2000)[12] [13].

4.2 Specific payoffs[14]

To keep the analysis as simple as possible, and to highlight the endogeneity of the implementation of the conditions, assume that the parameter values a_0, a_1, m_0, m_1, s^u and s^* are exogenously determined.[15] Moreover, assume that the donor and the recipient have signed a contract ex ante, which guarantees a certain amount of aid a_1 to the recipient if the recipient implements some conditions c_1. The contract also states that if the recipient does not implement the conditions, then there will be no aid disbursement, and let "no aid" be denoted $a_0 = 0$.

Initially, we assume that the recipient prefers to fulfil the conditions and get the aid, compared to refraining from the aid/conditionality package: $R(m, a_1, c_1) > R(m, a_0, c_0)$. The

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[12] Trumbull and Wall (1994) suggest that among other unobserved motives for giving aid, is "their [the recipients] strategic value to the donors". Alesina and Dollar (2000) find that the direction of foreign aid disbursement is determined as much by political and strategic considerations as by poverty and policy performance of the recipients.

[13] The well-known institution of tied aid, where donors link their funds to procurement of investment goods from companies in the donor country, is also supportive of the assumption that consequences for domestic industry are taken into account in foreign aid policy.

[14] It could be more confusing than clarifying to display all possible payoffs for all players in these games, so only the payoffs necessary to illustrate the important equilibria of the games are described.

[15] The amount of bilateral aid that is to be granted to a particular recipient can also be determined outside the donor agency, for instance in a parliamentary committee. This is only a simplifying assumption that does not influence the results.

recipient's utility is determined by whether or not the road is built, whether or not aid is granted and whether or not conditions are implemented:

(4) $R_a = R(m_1, a_1, c_0)$ buy road, get aid, not implement conditions

(5) $R_b = R(m_1, a_1, c_1)$ buy road, get aid, implement conditions

(6) $R_c = R(m_1, a_0, c_0)$ buy road, no aid, not implement conditions

(7) $R_g = R(m_0, a_0, c_0)$ no road, no aid, not implement conditions

From the assumptions of the recipient's utility function, note that $R_a > R_b > R_c > R_g$.[16]

The company's payoff depends on whether or not it is granted the road-contract and whether or not it locates its new activity in the donor country:

(8) $C_a = C(m_1, s^*)$ road is built and location in the donor's country

(9) $C_b = C(m_1, s_u)$ road is built and location in another country (abroad)

(10) $C_c = C(m_0, s^*)$ road is not built and location in the donor's country

Recall the assumption that if the road contract is not tied to the company's location decision, the company would always choose to locate at home. Note also that usually, the infrastructure projects must be of a substantial dimension to attract multinational companies. Thus, we assume that it is a large road project to be built and that the contract is of great value to the company. In this setting, then, it seems most realistic to assume that the value to the company of the road contract is larger than the cost of locating the new activity abroad. Hence, let the company always choose to "build the road and locate abroad" instead of "not build the road and locate the new activity in the donor's country" if it must choose between the two:

(11) $C_b > C_c$

By assumption, then, $C_a > C_b > C_c$.

As stated above, the recipient intends to withhold the contract from the company unless the company locates the new activities abroad in case no aid is granted. Thus, the donor's choice of giving aid or not in a situation where the recipient has not implemented the

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[16] Note also that we let the subscripts of the utilities of each player follow the alphabetical order to indicate the ranking of that player's utility.

conditions may be determined by which of the states yield the highest utility for the donor: Either to achieve

(12) $D_l = D(h(a_0, c_0), s_u)$

by not granting the aid (and hence maintaining conditionality) and loosing the company's new activities to a another country, or to achieve

(13) $D_c = D(h(a_1, c_0), s^*)$

by giving aid and having the new activity located in the donor country.

We assume that the donor is more concerned about the activities in its own country than the potential waste that could occur in the aid-conditionality scheme. So losing the new activity to another country is considered a substantial loss for the donor, while the waste of granting the aid when the conditions are not implemented is considered to be less severe. Hence, we assume

(14) $D_c > D_l$.

Note also that the donor achieves its highest feasible payoff in this game if aid is disbursed when the recipient has implemented the conditions and the company locates in the donor country. This case is defined by

(15) $D_a = D(h(a_1, c_1), s^*)$.

Before turning to the triadic game, we explore the outcome of the game if the players interact in a pairwise manner.

4.3 The dyadic outcome

Assume for now that the three players are restricted to only interact pair-wise, that is, we impose traditional dyadic relations in the game. Since this assumes that it is not possible for the donor to take account of the recipient's relationship with the company when interacting with either the company or the recipient, the dyadic donor-recipient game is restricted to the two first stages of the stage game in figure 2. Then we can see from the backward induction solution in the game tree in figure 2 that conditionality is successful because the recipient will always implement the conditions to get the aid. Hence, the outcome will be *(implement conditions, give aid)*.

In the interaction between the company and the recipient regarding the road-contract, we have by assumption that they have found a price that is acceptable to both. Hence, the outcome will be *(buy road)*. Similarly, for the interaction between the company and the donor, we have assumed that the optimal location for the company is in the donor country, and this is also the best result for the donor. Therefore, the outcome will be *(locate at home)*. From these actions, it is evident from (5), (8) and (15) that the payoffs to the recipient, the company and the donor will be R_b, C_a and D_a, respectively.

It is essential to notice that the donor achieves its best feasible payoff if we have dyadic interactions. However, it is evident that there is a gain for the recipient if it is able to get aid without implementing the conditions, but this would induce a loss for the donor. So in order to capture this gain, the recipient can go into an alliance with the company. This three-party structure requires a triadic framework to be fully analysed.

4.4 The failure of conditionality in the triadic structure

From the game tree in figure 3, the backward induction outcome of the triadic stage game reveals that the recipient's threat is not credible because it is in the recipient's own interest to grant the road contract to the company at stage four. So the subgame perfect equilibrium path of the stage game follows the sequence that the recipient implements the conditions, the donor disburses the aid, the company locates in the donor country and the recipient grants the road-contract: *(implement, aid, home, m_1)*.[17] Thus, compared to the payoff in subgame perfect equilibrium of the stage game, there would be a gain to the recipient if it could manage to get aid without implementing conditions.

Since the company is sure to have the road contract in this game, the recipient needs another "carrot" to make the company willing to punish the donor, because locating abroad imposes a cost on the company. In other words, if the donor does not disburse aid, then the recipient must compensate the company for taking these costs. The repeated nature of the

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[17] The bold lines in figure 2 show the optimal choice for each agent at each stage, so the subgame perfect equilibrium path of the stage game is easily traced.

failure of aid conditionality leads us to investigate the game in infinitely repeated interactions when such a compensation is offered.

We show here that by repeating the stage game infinitely, the recipient's threat may become credible if it shares some of the gain by offering a road contract on better terms than the original contract m_1. Hence, a subgame perfect equilibrium where the donor must grant the aid without the conditions being implemented can be sustained.[18] Two differences need to be highlighted. First, we assume now that the company is able to switch parts of its tax base between its branch in the donor's country and a branch in another country, and this decision replaces the company's decision of location at stage three. To follow the specified payoff function of the company (section 4.1), assume that the tax system in the donor's country is slightly more preferable to the company than the tax system in the other country. So an optimal tax decision in isolation from other concerns would be to render the full tax base to the donor country's tax authorities.

The second modification of the game is more important. Assume that the recipient may offer the company a strictly more favorable contract, m_f, compared to the contract described in section 4.1, so $m_f > m_1$.[19] Then let the game tree in figure 2 describe the players' feasible actions each year. Together with the payoff functions in section 4.1 and the restrictions in section 4.2, this game tree describes the stage game that is repeated infinitely. Here we provide the intuitive explanation for the existence of a subgame perfect equilibrium where aid is disbursed when conditions are not implemented, and describe its 4 necessary conditions. For the mathematical representation of the conditions and the proof of the equilibrium, see the appendix.

Assume that the recipient applies a trigger strategy where it announces that it will only offer the favorable contract each year as long as the company complies with the recipient and

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[18] Such a result might also be maintained in more short-term relationships. An example of how allowing for a simultaneous coordination game with one good and one bad equilibrium to be played between the recipient and the company after the forth stage in the original stage game can yield a credible threat is available from the author upon request.

[19] See Hatlebakk 2002 for the idea of offering a favorable contract in the triadic structure. See the appendix for the differences between the two theoretical solutions.

influences the donor to keep the aid flowing even if the conditions are not implemented. Then, from the recipient's perspective, the company complies as long as it locates abroad if aid is not disbursed, but also if it locates at home when aid is granted. If the company does not comply in a particular year, the recipient will play according to the subgame perfect equilibrium of the stage game and hence offer the regular contract, m_1, forever after. In that case, the company looses the opportunity to earn the extra profit from the favorable contract in the future, and that serves as the recipient's punishment of the company for not complying.

Assume further that the company also apply a trigger strategy, where it will only punish the donor for not giving aid as long as the recipient has offered the favorable contract in the previous years. Should the ordinary contract be offered, then this triggers the company to play according to the subgame perfect equilibrium of the stage game for ever. Thus, offering an ordinary contract implies that the company will never punish the donor in the future, which in turn removes the recipient's opportunity to get aid without implementing the conditions forever after.

The recipient and the company's trigger strategies are crucial in this game, but in order to explain the necessary conditions for the equilibrium of interest, we need to specify the full set of the players' strategies. So let one element in the players' strategy profile be to play according to the sequence (*not implement, aid, home, m_f*), the equilibrium path, as long as no player deviates from this path.[20] Assume further that the other part of the players strategy profile is that any deviation from the equilibrium path by any player leads to one of the two following paths: The first is (*not implement, no aid, abroad, m_f*). This path can be termed "the donor-specific punishment path" because it is followed once only for the situation where the donor does not give aid and the company complies with the recipient and punishes the donor by locating abroad. In case this deviation from the equilibrium path occurs, the players revert to the equilibrium path in the next stage game. The second is the path that may be triggered by the recipient or the company from the trigger strategy specified above: If the company does not comply, that is if it locates at home in a situation where no aid is given, or if the recipient does not offer a favorable contract, then this triggers the subgame perfect

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[20] See Abreu (1988) for the specification of strategies in terms of *paths*.

equilibrium of the stage game forever: *(implement, aid, home, m_1)*. This can be termed "the company-specific punishment path". Moreover, this path is triggered by any other deviation from the equilibrium path than the donor specific punishment path, and hence, both the recipient's and the company's trigger strategies described above are contained in this strategy profile.

Now turn to the necessary conditions for these strategies to yield an subgame perfect equilibrium where the recipient succeed in having aid without implementing the conditions. It is straightforward to see that if maintaining conditionality is very important for the donor while the company's location is not, then aid may not be disbursed if the conditions are not implemented even if the company should punish the donor for not giving aid. In this case, there is no scope for the recipient to use the company to influence the donor. Hence, the first necessary condition is that if the conditions are not implemented, then the donor must be better off to disburse aid and have the location to its own country, compared to not giving aid and losing the location abroad. The assumption that donor self interests may overshadow other goals in foreign aid policy seems to be well documented for several large contributors of foreign assistance, as noted above.

The second conditions is that the company must be willing to take the cost of rendering its tax base to another country in case the donor does not disburse aid. If the company is not willing, then the recipient has no means of influencing the donor. So assume that the recipient has not implemented the conditions and the donor has rejected to disburse aid. Then two important scenarios can be depicted.

In the first scenario, the company chooses not to comply with the recipient, and hence continue to render its tax base to the donor's country. Then the company can secure itself the payoff from the subgame perfect equilibrium of the stage game each year, because non-cooperation triggers this outcome forever.

In the second scenario, the company complies with the recipient and punishes the donor. Hence, the company follows the donor specific punishment path and incurs the cost that particular year when locating abroad. This secures the company m_f in that stage game, since the recipient's strategy is to offer a favorable contract as long as the company complies.

Then, according to the strategy profile, all will play according to the equilibrium path forever after which results in the highest feasible yearly payoff to the company.

So if the recipient is to get aid without implementing the conditions, then the company must be better off in the latter scenario. If this is the case, then the company would actually carry out the punishment of the donor in case no aid is given. Hence, the second condition implies that the company must be sufficiently patient to await the future reward of cooperating: The discounted payoff from following the subgame perfect equilibrium of the stage game must be lower than the total discounted payoff from punishing the donor once for not giving aid and then "being rewarded" with the favorable contract (and locate at home) forever after. In other words, the second necessary condition implies that the company's extra profit from the favorable contract must be sufficiently large to allow for punishment, given the company's discount factor. The intuition is that the company will maintain a cooperation with the recipient and punish the donor once if warranted in order to continue to get a share of the recipient's gain from having aid without implementation.

Now turn to the third necessary condition. Assume that all behave according to the recipient's intentions and follow the equilibrium path, which implies that the recipient has not implemented the conditions, the donor has given aid in fear of being punished and the company has located at home. In this case, the recipient can grab a rent by offering an ordinary contract, m_1. Hence, by walking away from the stated promise of offering a favorable contract, the recipient can achieve both the gains from having aid without implementing the conditions and save itself the costs of offering the company a favorable contract. However, this triggers the subgame perfect equilibrium of the stage game forever after, because the company requires the favorable contract to cooperate. Hence, the third conditions is that the favorable contract must not be so costly for the recipient that it is worthwhile to grab the rent by offering an ordinary contract when the other players follow the equilibrium path and then having the outcome of the subgame perfect equilibrium forever after, compared to not deviating from the equilibrium path every year. Note that a "costly contract" in this setting could imply a high value of the favorable contract in terms of money, but also that the recipient is impatient.

The same reasoning can be used to see that the recipient must also be better off to follow the donor specific punishment path in case the conditions are not implemented, aid is not given and the company complies and locates abroad. This fourth conditions arise from a similar situation as described in the previous paragraph: The recipient can grab a one period surplus by offering m_1, instead of following the donor specific punishment path and offer m_f. The former offer triggers the subgame perfect equilibrium of the stage game forever, while the latter results in the equilibrium path being played forever. Hence, the final conditions is that offering m_f must yield a higher total discounted payoff to the recipient than offering m_1 in a situation where the company has punished the donor for not giving aid. This may not very different from the third condition, and we show in the appendix that these conditions become identical if the recipient's utility loss of offering a favorable contract compared to an ordinary is constant.

So if these conditions are satisfied, the recipient starts out by declining to implement the conditions. Then the donor gives the aid, the company does not alter its optimal location of tax base, and the company is granted the favorable contract. Hence, in our subgame perfect equilibrium, the yearly payoff to the recipient, the donor and the company will be $R(m_f, a_1, c_0)$, $D(h(a_1, c_0)s^*)$, $C(m_f, s^*)$, respectively. If the donor were to deviate from the equilibrium path and refuse to disburse the aid in a given year, the company will punish the donor that year by shifting its tax base to another country. Then the players, in accordance with their equilibrium strategies, revert to the equilibrium path the following year.

This result sheds light on what may happen in these relations over time. The recipient ensures that the company puts pressure on the donor by offering a share of the gain attained by getting aid without implementing conditions. Note also that the utility of the donor if it did not involve itself in giving aid would have been

(16) $D_j = D(h(a_0, c_0), s^*) > D(h(a_1, c_0), s^*)$.

Hence, the donor would in fact be better off if it had never entered the arena of aid at all. This is due to the fact that the donor believes it is a waste of money to give aid when the conditions are not implemented, but is forced to disburse the aid because of the fear of losing some tax income abroad.

5. Aid institutions for preventing strategic behavior

Despite the abstraction from a number of issues relevant for the interaction between donors, recipients and private firms at the development scene, our model offers new insight into the failure of aid conditionality. When building aid institutions, an important question to the donor is how to make the recipient implement controversial conditions when there is scope for strategic behavior. Three suggestions emerge from the above analysis and are only briefly noted here: Delegation of the disbursement decision, governmental guarantee schemes and cooperation between the donor and the company.

Delegation to an agent with different objectives is often used as a means to avoiding commitment problems. Svensson (2000c) shows that delegating responsibility to a donor agency with less aversion to poverty than the donor can be optimal when the donor is unable to commit itself. In our model, however, it is only required that the agency to which the responsibility is delegated does not have interests competing with the concern for the aid/conditionality decision. It follows from the structure of the infinitely repeated game that as long as the agency is indifferent with respect to the company's tax-base decision, there is no scope for the recipient's strategic behavior.

Another opportunity for the donor to enforce conditionality, is to offer a governmental guarantee that the company shall not become worse off from engaging in the recipient's country than the equilibrium payoff.[21] Take the infinitely repeated game first. Once the company has been chosen as the constructor of the road, the donor can guarantee compensation equal to the company's loss if it is denied the favorable contract. Such a scheme is credible without a contract as long as the donor is better off redeeming the guarantee than being forced to give aid without the conditions implemented. On the margin, the donor would set the monetary value of the guarantee, denoted G, equal to the monetary loss for the company if the recipient carries out its threat and punishes the company. Hence, in the infinitely repeated game, the company must at least be guaranteed a compensation for the

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[21] One empirical example of governmental guarantees for national companies that engage in poor countries can be found in the Norwegian Guarantee Institute.

favorable contract, so $G \geq m_f - m_1$ must be satisfied every year. Then, if paying G to the company is better for the donor than to take the loss of giving aid without conditions implemented, which is $D_a - D_c$, the guarantee scheme is credible. In addition, if the donor and the company are from the same country, this could be set up in an enforceable contract and, hence, the guarantee would be credible without the donor's condition for a credible scheme to be satisfied. Either using a guarantee or a contract secures that the recipient's threat to influence the company would not have a bite.

The last suggestion on mitigating the problem of a strategic recipient could be for the company and the donor to agree on speaking with one voice on issues involving the recipient. It is straightforward to show that there will be no scope for strategic behavior in such a setting as long as a joint body between the donor and the company attaches sufficiently low weight to the company interests. Keeping in mind the close ties between many of the large northern private firms with interests in developing countries and their governments as exemplified by tied aid, such a constellation does not seem too unrealistic.

6. Concluding remarks

While earlier work has pointed towards time inconsistencies of altruistic donors as an explanation for the failure of aid conditionality, this paper sheds light on failure arising from company influence on the disbursement decision. Supported by the institutional setting in which the donor–recipient relationship is embedded, our model suggests that recipients can influence the decision of granting aid through introducing commercial interests into the game. Such strategic behavior can enable a recipient to avoid implementing the conditions attached to the aid.

It is also found that a donor subjected to credible threats could in fact be better off by never involving itself in the aid-relationship. When donors perceive that giving aid when the conditions are not implemented is equivalent to wasting the money, they would rather withdraw over time when forced by private companies to give aid when the conditions are not implemented. Even if players' preferences are constant in game-theoretic models, we believe that donors might be less eager to give aid over time if they are subjected to the type of

strategic behavior modeled here. Then the trend of reducing the level of aid (World Bank 1998a) over the last decade is not surprising in light of our model.

These problems of strategic behavior arise because of the recipient taking advantage of the donor's many competing interests, and the model offers some theoretical solutions. One possible solution to this problem is to give governmental guarantees to companies that involve themselves in the recipient country. Another way to deal with this particular strategic behavior, would be to delegate the disbursement decisions to an agent who is confined to maintaining the prevailing disbursement policy. Finally, by creating a joint body for donor and company interests towards the recipient one would also be able to maintain conditionality.

Appendix: The subgame perfect equilibrium in infinitely repeated games and the proof.

1. The required assumptions

Four assumptions are necessary for there to be a subgame perfect equilibrium in the infinitely repeated game described in section 4.4:

1. If the recipient has not implemented the conditions, the donor must be better off to disburse the aid in the case where the company locates at home, compared to not giving aid in a situation where the company locates abroad:

(14) $D\big(h(a_1,c_0), s^*\big) > D\big(h(a_0,c_0), s^u\big).$

2. The company must be better off to locate abroad and have the favorable contract once, and then locate at home and have the favorable contract forever, compared to playing according to the subgame perfect equilibrium of the stage game in every period:

$$(16)\quad \frac{1}{1-\boldsymbol{d}^C}C(m_1,s^*) < C(m_f,s^u) + \frac{\boldsymbol{d}^C}{1-\boldsymbol{d}^C}C(m_f,s^*)$$

$$\Rightarrow m_1 + s^* < (1-\boldsymbol{d}^C)(m_f + s^u) + \boldsymbol{d}^C(m_f + s^*)$$

$$\Rightarrow s^* - s^u < (\frac{1}{1-\boldsymbol{d}^C})(m_f - m_1)$$

where $\boldsymbol{d}^C$ is the company's discount factor. This condition implies that the adjusted profit from the favorable contract must be sufficiently large to allow for punishment once. Moreover, the contract must be of such a value that $\boldsymbol{d}^C > \hat{\boldsymbol{d}}^C$ where

$$(16b)\quad \hat{\boldsymbol{d}}^C = \frac{m_f - m_1 - s^* + s^u}{s^* - s^u}$$

is the critical discount factor from (16).

3. The recipient must be better off to give the favorable contract in a situation where the company has punished the donor for not giving aid , and then play according to the equilibrium path, compared to giving an ordinary contract after the company has punished the donor for not giving aid and then play according to the subgame perfect equilibrium of the stage game:

$$(17)\quad R(m_f,a_0,c_0) + \frac{\boldsymbol{d}^R}{1-\boldsymbol{d}^R}R(m_f,a_1,c_0) > R(m_1,a_0,c_0) + \frac{\boldsymbol{d}^R}{1-\boldsymbol{d}^R}R(m_1,a_1,c_1)$$

where d^R is the recipient's discount factor. $d^R \in \langle 0,1 \rangle$, which implies that d^R must satisfy $d^R > \hat{d}^R$ where

(17b) $\quad \hat{d}^R = \dfrac{R(m_1, a_0, c_0) - R(m_f, a_0, c_0)}{R(m_1, a_0, c_0) - R(m_f, a_0, c_0) + R(m_f, a_1, c_0) - R(m_1, a_1, c_1)}$

is the critical discount factor from (17).

4. The favorable contract must not be so costly for the recipient that it is not worthwhile to offer this contract to get aid without implementing the conditions in every period, compared to deviate from the equilibrium path by giving an ordinary contract and then have the subgame perfect equilibrium of the stage game forever:

(18)

$$\frac{1}{1-d^R} R(m_f, a_1, c_0) > R(m_1, a_1, c_0) + \frac{d^R}{1-d^R} R(m_1, a_1, c_1)$$

$$=> \hat{\hat{d}}^R = \frac{R(m_f, a_1, c_0) - R(m_1, a_1, c_0)}{R(m_1, a_1, c_1) - R(m_1, a_1, c_0)} \quad where \quad d^R \in \langle 0,1 \rangle$$

which implies that d^R must satisfy $d^R > \hat{\hat{d}}^R$.

2. The strategy profile

Suppose that (14) is satisfied and that $d^R > \hat{d}^R, \hat{\hat{d}}^R$ and $d^C > \hat{d}^C$. Then the following complete strategy profile constitute a subgame perfect Nash equilibrium:

Equilibrium path: The players' sequence of actions is, at stages one to four, respectively: not implement conditions, give aid, locate in donor country, offer favorable contract; (c_0, a_1, s^*, m_f).

Any deviation from the equilibrium path implies that one of the following punishment paths are followed:

-If the *donor deviates* from the equilibrium path and plays "no aid" after the recipient has played "not implement conditions": Play(s^u, m_f), hence the donor specific punishment path (c_0, a_0, s^u, m_f) is played once. Then return to the equilibrium path.

-Any other deviation, by any player, from the equilibrium path or the donor specific punishment path: All agents play according to the stage game outcome (c_1, a_1, s^*, m_1) forever.

3. The proof

No player will deviate from the subgame perfect equilibrium of the stage game once triggered. Thus, neither the donor nor the company will deviate from the company specific punishment path if triggered.

The donor will never deviate from the equilibrium outcome if the payoff when being punished once for not giving aid when conditions are not implemented, $D(h(a_0, c_0), s^u)$, leaves the donor worse off than giving aid without the conditions being implemented and thereby avoiding punishment, $D(h(a_1, c_0), s^*)$. This follows directly from the assumption in (14).

The company will never deviate from the

-*donor specific punishment path* as long as $d^C > \hat{d}^C$ is assumed. Assume that the donor plays (*no aid*), which, according to the strategy profile, implies that the donor specific punishment path is played once. If the company deviates from this path and locates at home, it will achieve a total profit of $\frac{1}{1-d^C} C(m_1, s^*)$ because this triggers the subgame perfect equilibrium of the stage game forever (according to the strategy profile). However, to follow the donor specific punishment path after (*no aid*) is observed yields

$$C(m_f, s^u) + \frac{d^C}{1-d^C} C(m_f, s^*). \qquad \text{Since} \qquad d^C > \hat{d}^C \qquad \text{implies} \qquad \text{that} \qquad (16)$$

$\frac{1}{1-d} C(m_1, s^*) < C(m_f, s^u) + \frac{d}{1-d} C(m_f, s^*)$ is satisfied, the company will never deviate from the donor specific punishment path.

-*equilibrium path*, both because it is strictly better off when having m_f when the equilibrium path is followed, compared to m_1 in the subgame perfect equilibrium of the stage game, and

because there is a cost for the company of locating abroad. Moreover, the company achieves its highest feasible profit in this game when the equilibrium path is played, so there exists no gain to the company of any deviation from the equilibrium path.

The recipient will never deviate from the

-equilibrium path at stage four as long as the total payoff from following this sequence infinitely, $\frac{1}{1-d^R} R(m_f, a_1, c_0)$, is larger than the payoff from deviating by offering the company an ordinary contract. This deviation from the equilibrium path yields $R(m_1, a_1, c_0)$ in the deviation year, and $R(m_1, a_1, c_0)$ forever after because the strategy profile implies that the subgame perfect equilibrium of the stage game is triggered. Since $d^R > \hat{\hat{d}}^R$ satisfies (18)

$\frac{1}{1-d^R} R(m_f, a_1, c_0) > R(m_1, a_1, c_0) + \frac{d^R}{1-d^R} R(m_1, a_1, c_1)$, the recipient will never deviate from the equilibrium path at stage four.

-equilibrium path at stage one by implementing the conditions because, according to the strategy profile, this triggers the stage game forever. To deviate from the equilibrium path at stage one is worse for the recipient than not to deviate: $R(m_f, a_1, c_0) > R(m_1, a_1, c_1)$, from (18).

-donor specific punishment path as long as $d^R > \hat{d}^R$. Assume that (*not implement, no aid, abroad*) has been played, which implies that the recipient should offer m_f according to the donor specific punishment path. However, assume that the recipient deviates from this path and offers an ordinary contract, m_1. According to the strategy profile, this triggers the stage game equilibrium forever, and the total payoff to the recipient is thus $R(m_1, a_0, c_0) + \frac{d^R}{1-d^R} R(m_1, a_1, c_1)$. If the recipient does not deviate from the donor specific punishment path, it would have $R(m_f, a_0, c_0) + \frac{d^R}{1-d^R} R(m_f, a_1, c_0)$ instead because offering a favorable contract implies that the company and the recipient continues to cooperate (according to the strategy profile). Since $d^R > \hat{d}^R$ satisfies

(17) $\quad R(m_f, a_0, c_0) + \frac{d^R}{1-d^R} R(m_f, a_1, c_0) > R(m_1, a_0, c_0) + \frac{d^R}{1-d^R} R(m_1, a_1, c_1)$, the recipient will never deviate from the donor specific punishment path. Note that the donor specific

punishment path is followed once (*no aid*) is observed at stage two, so it is not a feasible action for the recipient to deviate from the donor specific punishment path at stage one.

q.e.d.

4. On the recipient's discount factor, and the cooperation

Since both (17) and (18) specify a lower bound for the recipient's discount factor, we know that the recipient's time preferences must satisfy the largest of the two factors in order for the recipient to be willing to carry out the specified actions in the strategies. Thus, for the equilibrium to exist where the recipient get aid without implementing the conditions, the recipient's discount factor must be larger than (17) and (18). Unfortunately, we are unable to find an analytical solution to which factor is the largest. However, a straightforward solution is within reach if we assume that the cost of offering the favorable contract compared to the ordinary contract has the same impact on the recipient's utility irrespective of the value of the other variables.

So assume that, ceteris paribus, $R(m_1, a, c) - R(m_f, a, c) = x$. In that case, we can see that (17) and (18) represents the same condition:

(17a) $\quad \hat{d}^R = \dfrac{-x}{R(m_1, a_1, c_1) - R(m_1, a_1, c_0)} = \dfrac{-x}{R(m_1, a_1, c_1) - x - R(m_f, a_1, c_0)}$

(18a) $\quad \hat{\hat{d}}^R = \dfrac{x}{R(m_1, a_0, c_0) - R(m_f, a_0, c_0) + R(m_f, a_1, c_0) - R(m_1, a_1, c_1)}$

$\qquad = \dfrac{x}{R(m_1, a_1, c_1) + R(m_f, a_0, c_0) - R(m_f, a_1, c_0) - R(m_1, a_0, c_0)}$

$\qquad = \dfrac{-x}{R(m_1, a_1, c_1) - x - R(m_f, a_1, c_0)}$

$\qquad \Rightarrow \hat{d}^R = \hat{\hat{d}}^R$

However, as shown in the proof, it is not necessary to restrict the recipient's utility function for our equilibrium to exist

Let us contrast the proof with Hatlebakk (2002). There are two important differences. First, we let the third party keep the favorable contract when cooperating, which seems more realistic than giving an ordinary contract in the donor specific punishment path. Second, we specify the condition that the first mover must not be better off by offering an ordinary

contract once the equilibrium path is started, see (17). A parallel to this condition is also necessary for the solution in Hatlebakk (2002), but not stated explicitly. As we have shown in section 4.4, it is not sufficient to assume that the player that offers the favorable contract does not offer so favorable terms that this player looses the whole surplus from making the threat credible (i.e. making the third party comply). The equilibrium also requires the restriction that this player do not grab the rent from offering an ordinary contract once the equilibrium path is started.

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Summary

When donors enforce conditionality upon recipients who do
not implement the conditions, companies can suffer from
cancellation of their contracts with the recipient when aid
dries up. A strategic recipient may avoid implementing
controversial conditions by only granting a contract to a
company that puts pressure on the donor to keep aid
flowing. In our model, each of these three agents takes
account of each of the two other agents' actions. We show
that this triadic structure can be crucial when explaining
recipients' use of companies to influence donors to give aid
unconditionally, and offer a time-consistent explanation for
the failure of conditionality.

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