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The Implications of Foreign Aid Fungibility for Development Assistance

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To address the fungibility of foreign aid funds, a proposed new lending instrument — a public expenditure reform loan — would tie an institution's lending strategy to the recipient country's achieving mutually agreed-upon development goals.

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Summary findings

A foreign aid or foreign lending policy that focuses exclusively on project financing may have unintended consequences, report Devarajan and Swaroop. New research shows that aid intended for crucial social and economic sectors often merely substitutes for spending that recipient governments would have undertaken anyway and the funds that are thereby freed up are spent for other purposes.

If the aid funds something that would have been done anyway, traditional ways of evaluating the aid's effectiveness are not really accurate. If aid funds are fungible and the recipient's public spending program is unsatisfactory, project lending may not be cost-effective. If the recipient's public spending program is satisfactory, perhaps the donor should finance a portion of it instead of financing individual projects.

One solution to the problem of fungibility, then, is that donors could tie assistance to an overall public spending program (in the recipient country) that provides adequate resources to crucial sectors.

To make this kind of reform operational, Devarajan and Swaroop propose a new lending instrument: a public expenditure reform loan (PERL). A PERL would tie an institution's lending strategy to the recipient country's achievement of mutually agreed-upon development goals.

Everyone agrees that better donor coordination is needed, but it has been difficult to achieve because some donors tend to prefer projects (usually with the national flag flying over them). By agreeing on a public expenditure program and financing a portion of it, the Bank can credibly ask other donors to do the same.

This paper — a joint product of the Development Research Group and the Poverty Reduction and Economic Management Network — is part of a larger effort in the Bank to understand better the development impact of aid. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Cynthia Bernardo, room MC2-501, telephone 202-473-1148, fax 202-522-1154, Internet address cbernardo@worldbank.org. The authors may be contacted at sdevarajan@worldbank.org or vswaroop@worldbank.org. December 1998. (16 pages)

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The Implications of Foreign Aid Fungibility for Development Assistance *

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***Preliminary Draft**

1. Introduction

Since 1960 nearly \$1.7 trillion (measured in 1995 dollars) has flown from rich to poor countries as foreign aid.¹ In the 1990s, however, aid fatigue has been setting in. With the end of the Cold War and many rich countries facing their own fiscal problems, foreign-aid budgets are being squeezed. Donor governments and aid agencies are asking new questions about whether the assistance they provide is as effective as possible in promoting economic growth and reducing poverty, two oft-stated development policy objectives. Much of this attention is focused on the impact of foreign aid on public expenditures in recipient countries. Public expenditures have long been considered one of the main channels through which foreign aid influences development outcomes. The donor community has been increasingly concerned that aid development assistance earmarked for critical social and economic sectors is being used directly or indirectly to fund unproductive expenditures including those on defense.²

What has aid financed in developing countries? What is the evidence on the “fungibility” of aid? What are the implications of aid fungibility for donors in assessing the impact of their assistance programs? These are the issues this paper addresses.

The paper is organized in three sections. In section 2, we first define aid fungibility and then analyze its consequences. The section also provides a review of the literature on fungibility of foreign aid. The review examines the evidence—both cross-country and country specific—on the link between foreign aid and the recipient country's public spending. In section 3 we develop a link between fungibility and a donor agency's lending strategy. Moreover, in light of the empirical

¹Based on 36 years of data from 1960 to 1995 on Official Development Assistance (OECD, 1997).

²See the UNDP's Human Development Report (UNDP, 1994) for an analysis of the human development cost of arms imports in developing countries.

findings on aid fungibility, we draw lessons for donor assistance and make recommendations for designing better lending instruments. In this section, we also define and provide a blue-print of a new lending instrument—a public expenditure reform loan (PERL).

2. Fungibility of Economic Assistance

By providing assistance, foreign governments and international donor agencies attempt to influence the public expenditure policies of recipient governments. Similarly, in a federal system of governance, subsidies and grants are used by governments to influence the budget of a subsidiary government. Aid is also used to influence individual behavior (e.g., food stamps). The link between aid and the recipient's budgetary allocation, however, is not straightforward because some aid may be "fungible." For example, if a government would have undertaken a donor-financed project in the absence of that financing, then donor funds simply relax the government's budget constraint and finance, at the margin, something else. In a federal structure of governance, aid earmarked for a subsidiary government could end up replacing funds that the federal government would have given in the absence of that aid. Similarly, food stamps or rent subsidies to poor individuals may end up financing other consumption.

2.1 Aid fungibility: A definition

Suppose an aid donor gives money to build a primary school in a poor country. If the recipient government would have built the school anyway, then the consequence of the aid is to release resources for the government to spend on other items. Thus, while the primary school may still get built, the aid is financing some other expenditure (or tax reduction) by the government. In such a case, donor assistance is said to be fungible.

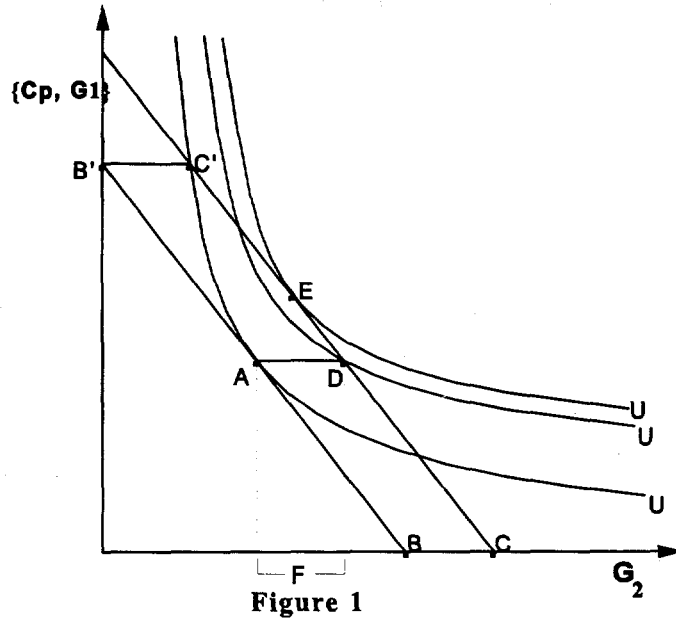


Figure 1

This concept of fungibility could be illustrated a bit more rigorously. Suppose a country spends its total resources on a single private good, C_p , and two public goods, G_1 and G_2 . All three goods are normal (non-inferior). It pays for these goods by means of domestically generated resources. In addition to its own resources, the country receives earmarked assistance towards the purchase of good G_2 from a donor agency. For simplicity, we assume that there is no impact of aid on the relative price of the two goods. Figure 1 captures this scenario. BB' represents allocation choices that can be financed from domestic resources, and given the preferences of the recipient country, point A represents the preferred resource allocation. An amount F of earmarked foreign aid is given for G_2 . The donor agency and the recipient country are assumed to have different preferences regarding how aid should be spent. (If they have identical preferences, then the distinction between earmarked aid or pure budgetary support has no meaning.) While the donor agency would like the aid funds to be spent on G_2 at the margin, for a variety of reasons, it is unable to monitor the intended pattern of public spending. Upon receiving aid, therefore, the recipient

country is able to make it fungible by changing both the level and composition of its public expenditure program.

If the recipient country can treat the entire aid amount as a pure supplement to its domestic resources, then aid is fully fungible.³ As illustrated in Figure 1, the post-aid resource constraint is $B'C'C$; the horizontal segment, $B'C'$, indicates that at least the aid amount has to be spent on G_2 . The new optimal resource allocation is given by the point E . The latter indicates that in spending the acquired aid resources on good G_2 , the country diverts some of its own resources from G_2 to C_p and G_1 . Suppose, on the other hand, the recipient country does not divert any of its resources away from the aided good while spending the earmarked aid on it. This could be due to the donor agency's effective public expenditure monitoring process. In such a case, aid is fully non-fungible. The optimal allocation mix of the country's *own* resources is not influenced by the aid amount and point A (in Figure 1) continues to be the country's preferred mix. Aid to G_2 , however, increases overall utility. The post-aid consumption point, D , is on a higher indifference curve U_2 . This indicates that even if the aid was fully non fungible, the recipient country would still benefit. Finally, if the country can treat a portion, ϕ ($0 < \phi < 1$), of the aid as a resource supplement, then aid is said to be partially fungible and the fungible portion of the aid is given by ϕ . In such a case, the post-aid resource line (not drawn in Figure 1) moves out by the fungible amount. In choosing the optimal resource mix, the country includes the fungible amount as an additional resource supplement to be spent but disregards the non-fungible portion, $1-\phi$. Depending on the value of ϕ , the final consumption point lies between points E ($\phi = 1$) and D ($\phi = 0$) in Figure 1. This is the basic model

³In the literature on the effects of intergovernmental aid in federal systems, this is known as having no "flypaper" effect. See Gramlich [1969].

that has been applied to data, when the fungibility coefficient ϕ is estimated (see Feyzioglu *et al.*, 1998, for an application).

2.2 *Consequences of aid fungibility*

The preceding section shows that if donor and recipient preferences differ, it is possible that the latter could convert aid into fungible resources. In granting aid, donors often require that proceeds be used for the purposes for which they are granted. The recipient could fulfill that conditionality by spending aid money for the purposes for which it was given. Yet, the earmarked funds may be releasing resources—that are already available to the recipient—for some other purpose. Is this a bad outcome? Not necessarily. Proponents of foreign aid argue that notwithstanding the diversion of local spending, aid money is intrinsically more effective than local spending as it comes packaged with technical assistance and superior management skills of donor agencies. Indeed, it is quite likely that donor involvement may increase the rate of return on the project. It may also lead to changes in policy, institutions, and project design. Yet, if aid funds crowd-out domestic resources from that activity, they may end up financing, at the margin, very different and perhaps undesirable activities. In such a case, the developmental impact of external assistance may be quite different from that perceived from traditional measures of project success including the economic rate of return.

Precluding aid fungibility appears to be simple, at least on paper. All that is needed is conditionality on incremental spending. In practice, however, it is difficult to figure out what the recipient government would have done in the absence of that donor financing. Estimating the counterfactual is problematic. In most cases when they target aid to particular sectors, donor agencies use a proxy (e.g., the previous year's spending) of what the recipient government would have spent in the absence of aid. Treating past years' composition of spending as the pre-aid composition may not be very meaningful if the change in domestic resources is large relative to foreign aid. Moreover, the multiplicity of donors further complicates the analysis. The bottom line is that in most cases it is difficult to preclude switching of donor funds at the margin. Even if non-fungibility can be established, the recipient may not feel "ownership" for the project if it was not planning to include in its expenditure program. The win-win situation results only if there is preference matching between the donor and the recipient and they both want to undertake the project which would not have been feasible in the absence of donor financing.

If most aid is fungible and it is difficult to search for non-fungible projects, what choices do the donors have to make aid more effective? In section 3 of this paper, we argue that a solution to this fungibility problem is to tie assistance to an overall public expenditure program (of the recipient country) that provides adequate resources to crucial sectors. To operationalize this reform program, the section proposes a new lending instrument—a public expenditure reform loan (PERL). A PERL would tie an institution's lending strategy with the achievement of a set of mutually agreed development goals of the recipient country.

2.3 Aid fungibility: A research review

Past research has analyzed aid fungibility along two main lines. Gramlich [1977], McGuire [1977], Mieszkowski and Oakland [1979], Rosen [1988], Zou [1996], among others, have studied the fiscal effects of inter-governmental grants and subsidy programs. Recently, there have been several studies which have analyzed whether foreign assistance provided for specific categories of expenditure is shifted by the recipient government, contrary to the wishes of donors. In a mix of cross-country and individual country studies, Boone [1994], Cashel-Cordo and Craig [1990], Devarajan *et al.* [1998], Feyzioglu *et al.* [1998], Gang and Khan [1991], Gupta [1993], Heller [1975], Pack and Pack [1990, 1993, 1996], and Khilji and Zampelli [1994], among others, have analyzed whether foreign assistance provided for specific purposes is shifted by the recipient government. One study that synthesises the two approaches is Jha and Swaroop [1998] which, in tracing the fiscal effects of foreign aid in India, analyzes the link between central and state governments.

The empirical literature on the effects of intergovernmental aid in federal systems has generally supported Gramlich's "flypaper" theory. (Many of these studies are summarized in Inman [1979]). According to this theory, an addition to resources through grants stimulates greater public expenditure than an additional dollar in local resources. In terms of the fungibility definition of section 2, there is little evidence that aid from higher to lower tier government is fully fungible. The presence of a flypaper effect, however, does not preclude partial fungibility. Using data on U.S. local government expenditure on education for the period 1964-71, McGuire [1978] found that restrictions placed by donors were largely ineffective and a large fraction of education grants were converted into fungible monies. McGuire analyzed the impact of a grant into price and income changing components and devised a statistical method to estimate each component from data on the

receiver's expenditure.

The literature on the effectiveness of foreign aid is replete with studies linking aid with macro economic variables—such as economic growth, consumption, investment (both public and private) and taxation—on the one hand and outcomes such as poverty, on the other hand.⁴ Despite its importance to policy, there have been few studies which analyze economic fungibility of aid at the level of sectoral spending. One reason has been the difficulty in obtaining data on sector specific aid and spending. In a study of 46 developing countries, Cashel-Cordo and Craig [1990] analyzed the impact of foreign aid (over the period 1975 to 1980) on the size and composition of government expenditure. The expenditure components in their analysis were limited to defense and non-defense non-debt spending. Their main finding was that aid was quite stimulative of public spending and none of it was spilling over into the defense budget. Similarly, in examining the fungibility of U.S. aid among eight major aid recipient countries, Khilji and Zampelli [1994] looked at defense and non-defense expenditures. They concluded that U.S. aid was highly fungible with a major portion financing private sector consumption through some tax relief mechanism.

Recently there has been a number of studies that have analyzed, among other things, the fungibility of earmarked sectoral assistance. Several have relied on time-series data to analyze the question of aid fungibility across the sectoral classification of expenditures (Gupta [1993], McGuire [1978], Pack and Pack [1990, 1993, 1996]). Analyzing the foreign aid experience of Indonesia over the period 1966 through 1986, Pack and Pack [1990] did not find any evidence of fungibility across sectoral expenditures. On the other hand, in their analysis of the Dominican Republic (Pack and

⁴For a comprehensive review of the foreign aid literature, see White and Luttik [1994].

Pack [1993]) they found major shifts from development expenditures to deficit reduction, debt service and tax relief. Based on data from 14 developing countries over 20 years Feyzioglu et al. [1998] found that roughly three-quarters of a dollar given in development assistance is spent on current expenditure and one-quarter on capital expenditure by the recipient countries. To test aid fungibility across public spending categories, they employed a newly constructed data series on the disbursement of sectoral concessionary loans. Their findings were: Concessionary loans given to agriculture, education and energy sectors are fungible; only loans to the transport and communication sector are non-fungible. Based on their findings, the authors argued that (a) the success of an aid program should not be judged by the proportion of assistance going to capital expenditure and (b) because most aid is fungible, the rate of return on a specific donor-funded project tells little about the impact of that assistance.

Yet another recent paper on foreign aid fungibility is by Devarajan *et al* [1998] which analyzes the experience of sub-Saharan Africa—the region with the largest GDP share of aid. Based on a data set of 18 sub-Saharan countries from 1975 through 1995, the authors explore two issues: (i) the extent of aid fungibility in sub-Saharan Africa; and (ii) reasons why aid was fungible or not. In terms of the first question, they find that the broad pattern of aid fungibility observed in cross-country and country-specific studies is reflected in their analysis of African countries. Specifically, they find relatively little evidence that aid leads to greater tax relief in Africa; every dollar of aid leads to a 90-cent increase in government spending. The effect of aid on the composition of public spending between current and capital expenditures is also broadly consistent with international evidence: Aid in Africa leads to an increase in current and capital spending in equal amounts. The result that appears as striking is that an almost equal amount of aid—equal to the amount going for

current and capital spending—goes towards repaying the principal on past loans. The argument that the inability to meet debt-service payments would have threatened many African countries with a complete cutoff from foreign capital, and therefore, the use of aid resources to relax this constraint could have been quite rational. In their analysis of sectoral aid fungibility, Devarajan, *et al.* find that sectoral aid in Africa is partially fungible: governments do not spend all sectoral aid in that sector, nor do they treat such aid as merely budget support.

In a federal structure of governance, foreign aid could also influence the inter-governmental fiscal transfer mechanism. Upon receiving aid on behalf of a subsidiary government, the federal government could make adjustments in its fiscal transfers to that lower level of government. An example of this comes from the practice of “Budget Offset” in Ethiopia, a federal country. The federal government reduces the budget subsidy to states—which is based on a formula that includes weights for population, development indicators and state’s own revenue efforts—by the full amount of expected external loans and grants that have been committed by donors towards projects in the respective states. While no such direct budgetary mechanism exists in India, concerns have been raised that states that procure externally aided projects are not able to reap the full benefits; central-government transfers to states are reduced when foreign aid is secured for state projects. In India almost all external assistance (including funds earmarked for projects for the state governments) accrues to the central government, which is also liable for any repayments. Jha and Swaroop [1998] look at this issue. They find that external assistance intended for development purposes merely substitutes for spending that governments—central and states—would have undertaken anyway; the funds freed by aid are spent on non-development activities in general and administrative services in particular. Moreover, in passing external assistance to states, the central government makes a

reduction in other transfers to states.

3. Lending Instruments and Strategies: The Implications of Economic Fungibility

At this point, a natural question to ask is: “So what?” Fungibility may be a fact of life, and recent empirical evidence seems to support this notion, but are there any implications for development policy? We now argue that there are two, rather profound, implications for donor assistance. The first has to do with how donors evaluate the impact of development assistance. If funds are fungible, the traditional approach of calculating the project’s rate of return will clearly not answer the question of the impact of the aid—since the aid is financing some other expenditure than the project (Devarajan *et al.* [1997]). The second implication has to do with the instruments used by donors to deliver aid. If funds are fungible, and the recipient’s public expenditure program is not satisfactory, then project lending may not be a cost-effective instrument. If the country’s public expenditure program *is* satisfactory, the donor may as well finance a portion of this program, rather than concentrate on individual projects.

3.1 Evaluating development assistance

Consider the following problem. A country has a public expenditure program of \$100 million, consisting of \$40 million in education expenditures, \$40 million in agriculture, and \$20 million in expenditures about which we know nothing. The rates of return on education and agriculture are 30 and 20 percent, respectively. A donor is considering a \$10 million primary-education project that has a rate of return of 35 percent. What is the development impact of the \$10 million?

Once we realize that aid may be fungible, the answer is not straightforward. Even though the

primary-education project has a high rate of return, if it is a project the government would have undertaken anyway, the donor's \$10 million is releasing resources for some other component of the public expenditure program, possibly something in the "unknown" category. The development impact of the \$10 million could be the rate of return of one of these unknown expenditures. In any event, the development impact is almost surely not 35 percent.

Yet, donors spend enormous resources calculating the rate of return on their projects (or some other summary measure of the project's net benefit). As a first step, then, these resources could be better spent on appraising the recipient's overall public expenditure program, so we have a better idea of where the marginal dollar is going. Second, donors and the development community in general should not read too much into the traditional rate of return calculations. For instance, it is not at all surprising that the correlation between World Bank project rates of return and the country's growth rate is around 0.3. The Bank's loans may have been financing projects with much lower rates of return than those in the appraisal document.

We should emphasize that calculating the rate of return to projects is still important for the recipient country. The calculations (if done properly) indicate whether the project is beneficial to the country. They could be used to guide the country's resource allocation process. But they should not be used by donors to evaluate the impact of external assistance, much less guide resource allocation within donor agencies.

3.2 Lending instruments

If a country's overall public expenditure program (PEP) is satisfactory, then the donor could just as well finance a portion of that program, rather than appraise and finance individual projects.

If the PEP is not satisfactory, then projects are not achieving their development impact. These two statements lead to the question of whether projects are the most appropriate vehicle for delivering assistance.

The alternative, which has been dubbed a Public Expenditure Reform Loan (PERL) at The World Bank, would involve replacing all project loans to a country with direct budgetary support, based on an agreement about the quality of the country's public expenditure program. Such an instrument has several advantages:

- Cost-efficiency: The Bank would save on appraisal and preparation costs of the individual loans to the country. The additional cost of appraising the country's PEP—currently estimated at about \$250,000—is still substantially less than the administrative costs of projects.
- Leverage: At present, the donor can only influence policies in the sectors he is involved in. Yet if, due to fungibility, the donor's money is going to other sectors, there could be significant gains if the donor could help improve the policy framework in those sectors. By financing a portion of the budget, a PERL provides that kind of leverage.
- Donor coordination: Everyone agrees that more coordination by donors is better. But this has been difficult to achieve, partly because individual donors have a preference for projects (usually with the national flag flying over them). By agreeing on a public expenditure program and financing a portion of it, the Bank can credibly ask other donors to do the same.

There would still be a role for projects in the aid relationship, but now it will be concentrated on the

transfer of know-how and policy advice, rather than on financing. Typically, these two are bundled together in a project, which means they are supplied in fixed coefficients. PERLs permit the two to be unbundled, and the scale of each tailored to the country's individual needs.

Despite their advantages, PERLs contain some risks as well. They are likely to elicit resistance from the recipient countries, especially those that are uncomfortable with having their whole public expenditure program scrutinized. At the same time, PERLs may not find much support among traditional project specialists in donor institutions. But the point is whether converting all lending into a single instrument such as a PERL is an improvement over the status quo. In light of the evidence on fungibility, it certainly must be.

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