Morrissey, Oliver (2014) Aid and government fiscal behavior: assessing recent evidence. World Development, 69 . pp. 98-105. ISSN 0305-750X

ELSEVIER
www.elsevier.com/locate/worlddev

CrossMark

World Development Vol. 69, pp. 98–105, 2015
0305-750X/

http://dx.doi.org/10.1016/j.worlddev.2013.12.008

Aid and Government Fiscal Behavior: Assessing Recent Evidence

OLIVER MORRISSEY*
University of Nottingham, United Kingdom

Summary. — This paper reviews evidence published in the last 10 years that has added to our understanding of the effects of aid on government spending and tax effort in recipient countries, with a discussion of when (general) budget support is a fiscally efficient aid modality. Three generalizations are permitted by the evidence: aid finances government spending; the extent to which aid is fungible is over-stated and even where it is fungible this does not appear to make the aid less effective; and there is no systematic effect of aid on tax effort. Beyond these conclusions effects are country-specific.

Key words — aid, fiscal effects, fungibility, budget support

1. INTRODUCTION

Aid flows to developing countries represent significant inflows of money, especially in poorer recipients. Headline aid figures reported by donors do overstate the value actually spent in the recipient country, as significant amounts are effectively spent in the donor country on consultancy and technical services (although these may be delivered in the recipient country) or in providing food and humanitarian relief. In the majority of recipients, most of the aid that is spent in the country goes through the government (in sector or budget support) or finances the provision of services (through donor operated projects) that would otherwise be a demand on the budget, although donors also make use of non-government agencies to deliver aid. In general, aid should be expected to impact on fiscal behavior, in particular the level and composition of government spending, especially in the low-income countries that receive significant amounts of aid relative to Gross Domestic Product (GDP).

McGillivray and Morrissey (2004, chap. 4) provided a thematic review of the literature on the fiscal effects of aid, concentrating on fungibility (aid and the allocation of public spending) and fiscal response (the broader effects on spending, taxation, and borrowing within the budget framework). This paper is an update that addresses recent research to identify significant developments that have added to our understanding of three issues: fungibility, aid and the allocation of government spending; aid and taxation; and the specific issue of budget support (especially insofar as this relates to spending allocation). The paper provides a thematic assessment of recent literature; it is not a systemic review and does not aim to be comprehensive, but the assessment is balanced by representing conflicting views and findings in the literature. The focus is on how aid relates to fiscal behavior; we do not aim to cover literature addressing macroeconomic effects,[1] aid effectiveness (on growth, poverty reduction, or particular sectors),[2] or donor policies and practices (except those directly related to fiscal behavior, such as budget support).

Table 1 presents summary data on the core variables of interest, with averages by geographic regions for the 1990s and 2000s, to set the context. A number of observations are appropriate as they relate to issues that will be raised throughout the paper. First, consistent data on government spending are limited, especially for the poorest (highest aid) countries, so the averages here are based on fewer than 60 developing countries (see discussion in Morrissey, 2012, pp. 6–9). For example, the average spending/GDP ratio for sub-Saharan Africa (SSA) is based on 12 countries in the 1990s and only nine in the 2000s (listed in the Appendix Table). Average spending/GDP ratios tend to be higher for lower income countries but exhibit considerable regional variation; in the 1990s this ranges from 15% in middle-income Latin American and Caribbean (LAC) to 30% in South Asia.

Second, tax/GDP ratios are quite low, ranging from around 14% in low-income countries (regions such as SSA and LAC_Low) to 18% in middle-income countries (such as Asia Pacific), and have not consistently risen in the 2000s compared to 1990s. Unsurprisingly, revenue/GDP ratios (accounting for non-tax revenues) are higher, but still lower than spending ratios (except in LAC where aid is negligible).

Third, the OECD Development Assistance Committee (DAC) data overstate the amount of aid, both in terms of what actually goes to the recipient and how much goes through the budget; hence the aid/spending (A/G) ratio is exaggerated. For example, in the 2000s on average in SSA aid was 16% of GDP (equivalent to 67% of spending) but as revenue was 21% together these would support spending at 37% of GDP compared to the actual 23%. Morrissey, M'Amanja, and Lloyd (2007, chap. 16) illustrate this for Kenya where, on average over 1964–2004, aid recorded in the budget is rarely more than 3% of GDP (compared to over 6% using DAC data). Obviously, when donor aid allocations to a country are equivalent to over two-thirds of government spending yet domestic revenue supports a similar proportion of spending, much of the aid is not going through the budget (it may be in parallel, through donor operated projects, or may not even be spent in the recipient); the donor allocation overstates the amount of aid that affects government spending.

* This study has been prepared within the UNU-WIDER project "Foreign Aid: Research and Communication (ReCom)" directed by Tony Addison and Finn Tarp, and supported by specific contributions from the governments of Denmark (Ministry of Foreign Affairs, Danida) and Sweden (Swedish International Development Cooperation Agency—Sida). Useful comments were received on earlier versions from Tony Addison, Finn Tarp and participants at UNU-WIDER ReCom meetings in Helsinki (September 30–October 1, 2011) and Nairobi (December 2–3, 2011). Three anonymous referees provided constructive comments, and the content has benefitted from research collaboration and discussions with Alessia Isopi and Paul Clist over a number of years. The usual disclaimer applies..

Table 1. *Revenue, spending, and aid averages (% GDP)*

Country	Revenue	Tax	Spending	Aid	A/G
1990s					
SSA (12)	19.66	14.41	21.64	15.65	83.56
MENA (5)	25.71	17.87	28.16	4.49	15.45
South Asia (4)	26.09	12.63	30.10	9.16	27.64
Central Asia (4)	15.60	12.69	18.77	16.88	111.66
Asia Pacific (6)	21.90	18.38	23.27	7.98	32.35
LAC (11)	15.71	12.89	15.32	0.62	4.20
LAC_Low (4)	17.67	13.54	19.68	9.98	53.84
2000s					
SSA (9)	21.18	16.05	23.44	16.12	67.49
MENA (3)	26.01	18.82	29.07	2.91	9.37
South Asia (5)	23.89	11.80	28.59	6.17	23.59
Central Asia (4)	19.37	14.85	20.28	15.06	88.25
Asia Pacific (4)	20.86	17.28	23.46	3.57	13.10
LAC (9)	17.10	13.33	17.97	0.34	2.01
LAC_Low (3)	16.11	12.82	18.48	10.03	48.17

Notes: The table provides simple average of available observations for the regions in each decade (number of countries in parentheses); Revenue, tax, and spending relate to central government only and all figures are as a percentage of GDP except final column which is aid (A) as a percentage of public spending (G). The regions are: Sub-Saharan Africa (SSA); Middle East and North America (MENA); Latin America and Caribbean (LAC), with lower income countries separate (LAC_Low); and three regions in Asia.
Source: Compiled from data collected for 58 countries, cited in Morrissey (2012, pp. 6–9). The list of countries is in the Appendix.

Nevertheless, aid should have a direct and significant impact on the level (relative to GDP), evolution (increases over time), and composition (the allocation to different types of public goods and services) of government expenditure. Indeed, aid is intended to increase government spending, in total and on particular areas; Gomanee, Morrissey, Mosley, and Verschoor (2005) provide evidence that aid increases spending on social sectors (health, education, and sanitation) and this contributes to development through human capital (see also Morrissey, 2009, chap. 6); Gomanee, Girma, and Morrissey (2005) show that aid finances government investment spending in SSA countries. Despite this, there is relatively little evidence on the effects of aid on the level and evolution of government spending. Most studies on aid and spending focus on fungibility, i.e., on whether aid is spent on the headings donors intend, and provide little analysis of the effect on total spending. The scope here is broader in addressing:

1. The effect of aid on the composition of government spending, specifically has spending in areas favored by donors increased? Section 2(a) addresses the recent contributions on fungibility.
2. The effect of aid on government spending, specifically the level of total spending (relative to GDP) and how it evolves over time. Section 2(b) comments on the very limited evidence on whether government spending increases fully by the amount of aid received. Section 2(c) assesses recent fiscal response studies.
3. The effect of aid on taxation, specifically how total aid, and whether it is given in the form of a grant or a loan, affects the tax/GDP ratio. Can aid and the associated policy reforms (conditionality) contribute to increasing domestic revenue mobilization? Section 3 reviews a number of studies on aid and taxation.
4. As a form of aid, does budget support have particularly beneficial fiscal effects? Section 4 reviews some literature on general budget support.
5. Section 5 concludes by observing that there is no consistent relationship between aid and the level or composition of spending because this relationship is mediated by the broader fiscal dimension, and discusses implications for aid policy.

2. AID AND GOVERNMENT SPENDING

Many studies on aid and government spending focus on fungibility. Indeed, this was a specific focus in World Bank (1998) where fungibility, interpreted as the diversion of aid away from its intended uses for investment and development, was presented as a factor limiting aid effectiveness in promoting growth. McGillivray and Morrissey (2004) note three important distinctions—general fungibility, sector fungibility, and additionality. Some studies focus on whether aid in general is fungible; on the assumption that aid is intended to finance public investment, the question asked is how much of the aid is "diverted" to finance government consumption spending. This is misleading as government consumption includes expenditures to maintain and operate investment projects; public investment spending is mostly construction costs (such as building a hospital), whereas the recurrent costs essential for productive investment (such as medicines and wages for nurses and doctors) are included as consumption. Thus, consumption (or recurrent) spending is a necessary complement to investment and may often be human capital investment.

Even if the aid is spent on the intended sector (i.e., not fungible) it may not be fully additional, i.e., does government spending on the sector increase fully by the amount of aid received? Additionality is difficult to establish, which may be one reason for the lack of empirical evidence (McGillivray & Morrissey, 2004). For example, donors could ensure the aid is spent as intended by undertaking the spending themselves, such as actually building a school or hospital through a donor project. However, the recipient may respond by reducing the amount of its own resources (domestic revenue) allocated to spending in that sector, so sector spending does not increase fully by the amount of the aid (it may not increase at all). It is also possible that sector spending increases by more than the aid, even if some of the sector aid is fungible (e.g., a donor builds a hospital that creates a claim on future government recurrent spending). These concerns are addressed in studies of the fiscal effects that address broader effects of aid and the dynamics of the fiscal relationship; even if aid in a particular year is not fully allocated as donors intend, spending in the areas favored by donors may increase over time by at least the amount of aid.

(a) *Fungibility and sector spending*

McGillivray and Morrissey (2004) discuss limitations in the literature on aid fungibility, in particular the lack of appropriate data to estimate the model (as one must know how much aid the donors intended to be spent on each expenditure heading). These limitations explain why studies provide such mixed evidence of the impact of aid on spending. Some unwarranted conclusions have been drawn, notably that fungibility "helps explain why large amounts of aid have had no lasting effect in highly distorted environments" (World Bank, 1998, p. 82). Aid ineffectiveness is as likely to be due to low productivity of aid-financed investment or public spending as to aid being diverted to unintended uses. Recent studies find that even where aid is fungible this does not appear to diminish effectiveness. McGillivray and Morrissey (2001) show that even if recipients intend to use aid in a fungible way the result may not be that spending on the items donors want to support will increase by less than the value of the aid. The recent literature reviewed provides only limited evidence that aid is fungible and, even where it is, no evidence that this reduces the effectiveness of aid; the latter finding in particular is the novel addition.

The challenge facing any studies on this topic is in constructing adequate data on sector aid. The basic source is the Creditor Reporting System (CRS) and other aid statistics provided by the DAC on sector aid for donor–recipient pairs. The longest series of sector aid allocation data relate to commitments; although the data are incomplete one can obtain a reasonable estimate of how much aid a particular donor committed to a given sector, such as health, in a recipient in a year (that can be aggregated to give total sector aid for the recipient). Unfortunately, one may not know in which year, if any, the aid was disbursed (or if the aid was disbursed through the government or through a donor project of which the government may not necessarily be aware). Some researchers have employed different approaches to estimate sector aid disbursements from DAC data, while others focus on specific sectors in a country (often based on World Bank data) or on total sector aid (not distinguishing donors).

In a detailed attempt using CRS data to obtain good estimates of sector aid, van de Sijpe (2013a) examines fungibility of aid to health and education for the period 1990–2004. To identify as completely as possible sector aid for education and health the sector disbursement data are complemented with other DAC data on total and sector donor disbursements. Sector program aid provides the measure of on-budget aid (aid allocated through the budget), while technical cooperation to the sector is a proxy for off-budget aid (recipients may be aware of the sector projects, but do not have control of the aid). Technical cooperation accounts for a large share of total education and health aid, implying that donor projects are significant in these sectors. Failure to account for this would overestimate fungibility as even if all aid is used in the sector it is not all recorded as government sector expenditure (program aid is, but technical aid is not). With this relatively high quality data, van de Sijpe (2013a) estimates the impact of sector aid on sector spending and finds little evidence that aid is fully fungible; technical cooperation induces only a small displacement of recipient's own spending and estimates of the effect of sector program aid are very imprecise.

Lu *et al.* (2010) argue that health aid is very fungible, based on data for 111 countries over 1995–2006 from the World Health Organization (WHO) on aid allocated to health and WHO and IMF data on government health spending. They conclude that sector aid appeared to reduce government's own health spending. This is a careful and important study that raises serious questions regarding the effectiveness of aid targeted at health. However, there are two important limitations that caution against accepting the results as robust. First, missing data on government's own health spending required them to impute some 40% of observations. Although they employed best practice multiple imputation methods, these can be unreliable when it is observations on the dependent variable that are missing. Second, the measure of sector aid used includes projects that might not go through the government budget so the approach may underestimate own-financed health spending by the government because this "off budget" project aid (not included in spending) is treated as "on budget" and included in spending; van de Sijpe (2013b) shows how this would overstate the extent to which health aid is really fungible (but see Dieleman, Graves, Hanlon, 2013).

A number of studies have found that fungibility does not reduce the impact of aid. Pettersson (2007) analyses fungibility using two sectors, social and other, assuming that total aid disbursements can be allocated to sectors according to the sector allocation of commitments. Data for 57 recipients suggest that sector fungibility is quite high: on average two-thirds of aid to social sectors appears to be fungible (it is spent outside the sector). However, the estimates of fungibility are imprecise: for a fifth of the countries the confidence interval includes both full and no fungibility and only for half of the countries is the confidence interval within these extremes (although for these on average two-thirds of aid is fungible); in some countries sector spending increases by more than the aid and in others it decreases by more than the aid. Pettersson (2007) then includes fungibility as a variable in aid-growth and aid-welfare regressions and finds no evidence that fungibility is associated with reduced aid effectiveness. Wagstaff (2011) reaches a similar conclusion examining two health projects in Viet Nam: the sector (health) aid appears to be fungible but this does not noticeably reduce the impact of the projects. There may even be fungibility within projects or sectors; e.g., van de Walle and Mu (2007) find that some of the aid intended to finance road building in one province in Viet Nam appeared to support roads in another province. Again, the implication is that fungibility may be present but need not reduce aid effectiveness.

(b) *Aid and public expenditure*

It may appear surprising that there is very little specific evidence for the effect of aid on spending. This is largely because studies concentrated on different questions: fungibility studies focus on where the aid is spent whereas fiscal response studies consider the broader fiscal relationship. Where the latter do include the effect of aid on spending, it is generally positive though rarely fully additional (not because aid is fungible, although it may be, but because aid supports reductions in borrowing—see below). Remer (2004) specifically addresses the effect of aid on government spending with cross-country data over 1970–99, in the context of the literature on growth of government size (measured as the government expenditure/GDP ratio) and establishes the expected effect of aid on total spending over time.

Morrissey (2012) notes the difficulty of compiling good data on government spending and revenue: reasonable annual data are only available for 58 countries over 1990–2008 but even then almost all countries had some missing annual observations and some countries had data for a sub-period such as the 1990s or 2000s only. Exploratory analysis of the data suggests that domestic revenue is the driver of total spending, but aid appears to be a significant determinant of total spending and spending on health, but not education (Morrissey, 2012, p. 9).

(c) *Spending, aid, and fiscal response*

The fundamental deficiency of the fungibility approach to the effect of aid on spending is that it does not allow for the broader fiscal impacts of aid over time, especially on tax revenue and borrowing. Furthermore, overt concern with fungibility may serve to distract attention away from the more fundamental issue of how aid impacts on recipient fiscal behavior in general, including the interaction of expenditure and revenue variables. Studies that examine the fiscal effects of aid do address components of the budget by considering the relationship between aid, domestic revenue, (taxes) and government spending (and sometimes borrowing). McGillivray and Morrissey (2004) review early applications of fiscal response models (FRMs): they are notoriously difficult to estimate and highly sensitive to the data, often yielding inconsistent estimates of core parameters; it is necessary to estimate budget targets but the theoretical framework does not provide a good representation of government behavior and determination of targets; and the models do not allow for dynamics.

To address these limitations in estimating FRMs, some recent studies adopt time series econometric methods that have two specific benefits in this context. First, having established that that fiscal aggregates (revenues, spending and borrowing) exhibit a long-run equilibrium (cointegrating) relationship (and that aid is part of this) the data can then be allowed to estimate which of the variables drive the relationship and how the variables respond to each other; it is not necessary to impose a structural relationship or estimate targets. Second, the method permits a distinction in estimating the long-run (equilibrium) and short-run (adjustment to the equilibrium) relationships between the variables, including aid. The methodology in the context of the fiscal effects of aid is still being developed and results tend to be country-specific.

Lloyd, McGillivray, Morrissey, and Opoku-Afari (2009) apply a common country-specific fiscal response analysis to a sample of 19 developing countries. The main finding is that aid is a significant element of the fiscal relationship for a variety of developing countries (including a number of middle income countries for which aid is a relatively small share of spending), i.e., they confirm that aid does influence budgetary behavior. For the majority of countries aid is weakly exogenous (donors do not respond to recipient fiscal imbalances in determining their allocation, but aid has effects on the other fiscal variables) and is positively associated with spending (both capital and recurrent). However, they do not elaborate or provide estimates of the magnitude of the effect of aid on spending, nor do they provide any discussion of the effect of aid on the composition or dynamics of government spending.

Osei, Morrissey, and Lloyd (2005) for Ghana illustrate how the fungibility and fiscal response approaches can yield conflicting inferences and demonstrate that the FRM approach is more reliable. They find that aid to Ghana from the 1980s was associated with reduced domestic borrowing (because reducing domestic borrowing was a requirement imposed by the IMF) and increased tax revenue (because of reforms in the cocoa sector promoted by the World Bank). [3] As borrowing is more closely linked to investment spending, whereas tax revenue is allocated to recurrent spending, recurrent spending rose more than investment spending following the increases in aid. This suggests *prima facie* that aid was fungible (investment spending rose by less than the aid and by less than recurrent spending) but is actually because the aid was used to reduce borrowing. Thus, although the econometric analysis shows that aid did not directly determine spending growth, the increase in aid combined with increasing tax revenue permitted spending to rise while borrowing was reduced. Thus aid facilitated improved fiscal management, even if it appeared fungible.

Ouattara (2006) obtains a similar result for Senegal (using a structural FRM rather than time series approach): aid had no significant effect on total spending but was associated with a reduction in borrowing. As noted above, fungibility studies omit controls for revenue and borrowing and assume that the aid is intended to finance (specific) expenditures; this may lead to incorrect inferences on whether aid is fungible. The case studies of Ghana and Senegal show that donors linked aid to reducing borrowing so that additionality could not be achieved (in the Ghana case total spending increased because tax revenue rose).

Morrissey, M'Amanja, and Lloyd (2007) extend the time series FRM approach with official Kenyan data for 1964–2004 (the aid was as reported by the government), to distinguish fiscal effects of aid grants and loans and consider the impact of aid on growth (within a fiscal framework). The results differed for the two types of aid: grants were associated with increased spending and that government spending had a positive effect on growth (grants also had a small positive association with growth); loans, however, were a response to unanticipated deficits—if spending exceeded revenue (tax and grants) the government sought loans to finance the deficit (in periods of a budget surplus the loans were repaid). Fiscal deficits, hence aid loans, had a negative association with growth. Another finding is that tax revenue was weakly exogenous, implying that the government was not able to increase tax revenue in the short term to adjust to budget disequilibrium (deficits). It follows that because tax revenue and grants were not amenable to short-term change by government (in effect they were not policy instruments), borrowing (loans) adjusted to spending disequilibrium.

The time series study of Martins (2010) analyses of the fiscal effects of aid in Ethiopia using a unique quarterly data set for the period 1993–2008. In contrast to the studies of Ghana and Kenya, aid grants adjust to the level of development spending; donors to Ethiopia appear to provide more grants if development spending is increasing. Furthermore, there is evidence for a long-run positive relationship between aid and development spending, but not between aid and recurrent spending (hence no evidence that aid is fungible). As in the other cases, domestic borrowing increases in response to shortfalls in revenue (tax and grants) and there is no evidence that aid affects tax revenue. Collectively, these FRM studies show that simply looking at aid and spending can miss the big picture—spending decisions are made within a fiscal (budget) framework in which aid is only one component. When this is taken into account, the importance of fungibility diminishes and the role of aid in supporting the evolution of spending is more accurately identified.

3. AID AND TAXATION

Within the research tradition on determinants of cross-country variations in tax/GDP ratios, where the ratio is essentially explained by a tax structure equation (to proxy the tax base times the tax rate), the few studies including aid provide no solid evidence that aid is a systematic determinant of tax ratios. Teera and Hudson (2004) find the coefficient on aid to be insignificant in their estimates of tax performance in developing countries. Empirical studies of the fiscal effects of aid do not support the conclusion that aid reduces tax effort (Section 2(c)). Recent studies provide some evidence that in the past 15–20 years low-income aid recipients have managed to increase tax ratios; this positive association suggests that in many aid recipients fiscal policies associated with aid have

supported increasing tax/GDP ratios (Clist & Morrissey, 2011). There is also evidence that this link between aid and increased tax ratios may be related to aspects of governance (Brun, Chambas, & Guerineau, 2009).

A particular concern is that aid may discourage tax effort, especially if given as a pure grant that creates no repayment obligation. Gupta, Clements, Pivovarsky, and Tiongson (2004) find that aid grants have a negative effect on tax effort, but that loans are positively related to tax revenue; they infer that loans encourage tax effort to meet repayments but grants induce lower tax effort. Clist and Morrissey (2011) address the effect of aid loans and grants on tax effort using similar data and find no robust evidence for a negative effect of aid grants on the tax/GDP ratio. They suggest one should expect a contemporaneous correlation because the poorest countries have lower tax/GDP ratios and, partly for this reason, tend to receive more aid in the form of grants. Allowing for this with moderately long lags on aid (5 years in a panel context) eliminates the aid effect. Benedek, Crivelli, Gupta, and Muthoora (2012) replicated and expanded the Gupta *et al.* (2004) study using a more complete data set covering the years 1980–2009 and corroborate the earlier findings of a negative effect of grants. However, Carter (2013) is unable to replicate their results and shows by using more flexible econometric techniques that the results are not robust.

The cross-country econometric findings regarding the relationship between aid and taxation conflict and perhaps the safest conclusion is that we do not have robust evidence. This is not surprising as the structural nature of the tax performance equation fails to account for behavioral effects of aid or cases where policy reforms associated with aid may affect tax rates, collection efficiency and even the tax base. Clist and Morrissey (2011) argue that the significant negative short-term effect of contemporaneous grants over the whole period is consistent with poor countries with lower tax revenue receiving more grants; this effect disappears in the 1985–2005 period. It may be that more recently aid is associated with conditions including measures to increase tax revenue, which could be interpreted as a positive impact of conditionality. Tax effort represents a structural relationship, the tax/GDP ratio is determined by the tax rate applied to the tax base (aggregated over all taxes), given tax collection efficiency. Aid itself is not part of this structural relationship: aid may have a behavioral effect (on rates or collection efficiency) or policies associated with aid (conditionality) may have effects (on rates, bases or collection). The controls included to proxy for the tax base (such as agriculture and industry shares in the economy, GDP, and imports and exports) can only partly capture indirect behavioral or policy effects.

Addressing the tax effect of policy reforms associated with conditionality is more difficult as there can be many effects in opposing direction. Some policies associated with aid tend to reduce tax revenue; economic liberalization has typically been a component of conditional lending (aid increases) and such reform episodes are generally associated with tax revenue reductions. Aizenman and Jinjarak (2009) show that reforms such as trade liberalization erode the revenue from "easy to collect" taxes such as tariffs (which tend to be most important for poorer countries). Poor countries have difficulty replacing the lost revenue through "hard to collect" taxes, such as VAT or income taxes, which need significant investment in tax collection and resources for monitoring and enforcement, while the relatively small size of the formal sector implies a low tax base. Thus, periods of economic policy reform in developing countries tend to be associated with reductions in the tax/GDP ratio, especially for the poorest countries (Baunsgaard & Keen, 2005), but they also tend to be associated with aid episodes. In this way, aid conditionality may actually generate a negative association between aid/GDP and tax/GDP ratios in the short-run. This helps to explain why one observes a negative correlation between aid and tax ratios, but it is not due to a behavioral effect of aid reducing tax effort.

It is the poorest countries (also likely to be major aid recipients) that face the greatest difficulty in increasing tax revenue (Keen & Simone, 2004; Teera & Hudson, 2004); the low tax/GDP is due to features associated with low income rather than implying low tax effort. Given the tax base these countries are collecting as much as can be expected as altering tax/GDP ratios is a slow process. Mkandawire (2010) argues that the nature of their colonial experience established institutional features that continue to help explain why some African countries have higher tax revenue than others. Some of the policy conditions will have the aim of increasing incomes (the tax base) and tax collection efficiency, and perhaps even increasing tax rates (such as consumption taxes). These effects may only be observed over the medium term, and there is evidence to support this positive relationship since the mid 1980s.

4. FISCAL DIMENSIONS OF BUDGET SUPPORT

The best way for donors to make the link between aid and spending clear is to make aid more transparent—recipients need to know what aid is available to finance spending, whether through donor projects or government budgets. A specific option for donors is to provide aid as General Budget Support (GBS); such aid goes directly through the budget and is linked to expenditure allocation and public sector management reforms. Although definitions differ, both the World Bank (WB) and European Commission (EC, for EU aid) have given GBS since 1997. Clist, Isopi, and Morrissey (2012) note that over 1997–2009 the WB gave GBS at some point to 44% of its aid recipients (when it does GBS accounts for half of aid on average) and the EC at some point to 51% (accounting for over a third of aid on average when it does). The take-up by bilateral donors is varied over the same period. Using DAC data suggests that Britain and the Netherlands are the most willing to give GBS, although only to about 10% of recipients in any year (but accounting for 40–50% of aid when they do so), whereas Japan and the US grant GBS to very few recipients (but accounting for 30–40% of aid when they do so).

Theoretical literature suggests donors would be unwilling to offer GBS because it gives donors no influence over how the aid is used unless they can effectively apply conditionality to GBS. Cordella and Dell'Ariccia (2007) present a model of multilateral donor's choice between GBS and project aid (PA). The model has a principal (donor), an agent (recipient), and two goods—a development and non-development good. The recipient derives utility from both goods, whereas the donor derives utility only from the development good, and it is assumed that the donor is more altruistic than the recipient. The essential idea is that the donor wants to increase spending on development. If the donor elects to use project aid they can target their aid on specific spending. However, total development spending may not increase by PA if the recipient reallocates some of its own spending (away from the project area); the effectiveness of PA is limited by fungibility. There is a related efficiency loss of project aid to the extent that it is not aligned with recipient activities (this can be seen as corresponding to coordination and transaction costs).

Thus, although PA gives the donor control over its aid this is at the expense of being unable to influence the recipient's expenditure allocation. Unconditional budget support confers no

influence on recipient action but also removes donor control over the use of aid, so this option would only be attractive if donor and recipient spending preferences are closely aligned. Morrissey (2006) argues that this is precisely the issue that donors resolve before giving GBS: donors will only grant GBS if they believe that the recipient's allocation of spending is broadly desirable, that is, in line with what the donor desires (see IOB, 2012). Cordella and Dell'Ariccia (2007) in contrast favor conditional budget support that allows the donor to influence recipient allocation by monitoring a component of development spending, equivalent to requiring the recipient to undertake some costly action to increase development effectiveness. This is unlikely to "induce" the donor to give GBS: Boughaeas, Dasgupta, and Morrissey (2007) also treat conditionality as a prior action and argue that the donor will offer conditional or unconditional aid solely contingent on beliefs about the distribution of recipient types. When recipient type is not known to the donor, as assumed by Cordella and Dell'Ariccia (2007), conditionality will not be effective in revealing recipient types (it is unlikely to solve the adverse selection problem).

Clist *et al.* (2012) resolve these concerns by arguing (and showing for WB and EC) that a recipient having a poverty reduction strategy in place (or favorable indicators of government effectiveness) predicts receiving GBS. Linking GBS to poverty-reduction strategies (policies and expenditures) agreed between donors and recipients implies that aid is aligned with how it will be used. However, effective GBS requires coordination of donor aid delivery systems and a transparent aid relationship with recipients; governments can only be accountable for funds that can be observed to flow through a transparent process. If donors choose GBS they reveal sufficient trust in the recipient to at least allocate aid to finance spending in an appropriate way. This reduces the transaction costs of aid, and therefore confers a benefit, although the evidence that GBS reduces transaction costs and/or is more efficient than alternatives is not entirely conclusive (Batley, 2005; Booth, Christiansen, & Renzio, 2006; Frantz, 2004).

Focused on the experience of the Netherlands, IOB (2012) provides a comprehensive recent evaluation of budget support. The principal findings are that GBS contributed to increasing access to education and health care for the poor (but not evidently to increasing incomes); although transactions costs were high, they were lower than for project aid; attaching governance conditions, and suspending support in response to cases of corruption and human or democratic rights abuses, may have been counter-productive (GBS was not effective in influencing governance or political reform); and it helped to improve fiscal management. Budget support is not a panacea but does support spending in the fiscal framework and is most effective where "the donor and recipient agree on the main policy and expenditure priorities" (IOB, 2012, p. 22).

If donor and recipient preferences on budget allocation are aligned, then irrespective of the importance of aid in spending, recipients will allocate aid more or less in the way donors' desire and GBS is appropriate. Experience with GBS suggests that conditions are in place for more effective aid for many recipients: aid is broadly associated with increases in desired areas of spending (social sectors); where aid is fungible this does not seem to reduce impact; aid has no consistent negative effect on tax effort; and the range of policies implemented since the 1990s have improved fiscal processes. The skeptical view some donors have of budget support arises because of concerns about corruption or failure to influence governance (IOB, 2012) but these are issues that budget support cannot address—GBS is appropriate for and should be evaluated against fiscal processes. Donor aid strategies for the future should be based on the most recent evidence, which is more encouraging than studies based on earlier data; many positive effects of aid can be identified in areas of government spending, revenue mobilization, and fiscal processes. Donors can avail of these improvements in recipient systems to provide aid in a more transparent manner, and GBS supports this, thereby enhancing the fiscal effectiveness of aid.

5. CONCLUSIONS AND DISCUSSION

The core conclusion from the recent evidence on aid and government spending can be simply stated: it should not be assumed or expected that a given amount of aid will result in an equivalent increase in the amount of recipient government spending. There is no particular reason why $1 m in aid should increase spending by $1 m (especially if the focus is on a particular sector or heading). Even if all the aid goes into the government budget, spending may increase by more or less than the amount of aid and the increase in spending in one year is not inherently informative about the impact of aid. Observing what happens to the level of public spending, in total or in particular sectors, in the year the aid was received does not tell us very much about how the aid was used. Understanding why this is so, as it may appear counter-intuitive, is informative regarding how aid affects government spending.

A crucial factor is that in practice not all aid goes to the government; more precisely, when making budget decisions the government is not aware of all the aid available to finance the provision of public goods. Donor data on the aid allocated to a particular recipient include some that is not even spent in the recipient country and some that is spent under control of the donor rather than by the recipient (recipients may not be fully informed about how much project aid is spent in a given year). This disconnection between sector aid allocation and sector spending, whereby an observed increase in aid is not directly matched by a potential increase in spending, represents the major challenge in any empirical attempt to assess if aid is fungible. Recent studies have added to knowledge here with two particular new insights (Section 2). First, there is evidence that fungibility, where it is found, does not significantly reduce aid effectiveness. Second, the way in which off-budget aid is treated seriously over-estimates the extent to which aid is fungible (van de Sijpe, 2013a, offers a method to quantify this effect).

If all of the aid provided is actually spent by the government, so that the full value of aid goes to government spending, total spending may not increase by the amount of aid if other sources of financing are affected. Recipient spending is financed by three basic sources of revenue: aid (strictly, the proportion of aid that actually goes to the government); revenue, mostly tax revenue (although non-tax revenue is important for some countries, such as those with resource rents); and borrowing or deficit financing. Recent studies have added to understanding of how aid, and especially the policy conditions associated with aid, could affect other sources of revenue. Aid has no consistent effect on tax revenue, although since the late 1980s there is a tendency for aid to be associated with increases in tax revenue over time (Section 3). The most plausible explanation is that policy reforms under aid conditionality are beginning to increase the tax base and revenue collection efficiency. Fiscal response studies show that increases in aid are often associated with reductions in borrowing, usually because reducing domestic borrowing is a requirement of multilateral agencies (in particular the IMF). As governments in low-income countries have limited ability to affect tax revenue in the short-term but can readily alter borrowing, the observed association between the

change in aid and spending in any year is largely determined by changes in borrowing behavior. Thus, if borrowing is reduced, as often required, total spending will not increase by the amount of aid within a year even if all aid is allocated to spending.

To assess the effect of aid on spending it is necessary to examine the evolution of spending, in total and across particular headings or sectors. Such analysis, as revealed by fiscal response studies, shows that aid does contribute to increased expenditure in total and in the sectors favored by donors. Aid affects the evolution and composition of government spending (Section 2). The sector composition of government spending may also affect the form in which aid is given as donors that are satisfied with the monitoring of spending and the allocation to social sectors may be more inclined to give aid in the form of budget support. Research on budget support (Section 4) suggests it supports increased social spending, reduces transactions costs and, as it is more visible to recipients and therefore has a more direct effect on fiscal behavior, is most effective for recipients with responsible fiscal behavior.

Although donors are often concerned that aid is fungible or discourages tax effort, this review of the evidence suggests that such concerns are unwarranted. Often the observations that give rise to concern are misinterpretations. For example, a donor may allocate aid to education but see no increase in government sector spending because the aid is delivered through donor projects (that the recipient is not fully aware of) while government education spending is determined by tax revenue (that is largely independent of aid). The example can be extended to aid and total spending (where borrowing effects also come into play). There are legitimate concerns about how aid is used and whether it is fungible, but there is very little evidence that these present a challenge to aid effectiveness, at least in fiscal terms. The fiscal environment for aid has improved markedly in many recipients, presenting an opportunity to reduce the transactions costs by delivering aid in the form of budget support that enhances the fiscal effectiveness of aid in those recipients that are improving fiscal management.

NOTES

1. Specifically, we do not review the recent literature on the effect of aid on "spending" (defined as the fiscal deficit net of aid) and "absorption" (the current account deficit net of aid), following IMF (2005); see Martins (2011) for references. Although the reference to spending may sound relevant, the focus of this literature is on coordination between the Central Bank and Ministry of Finance in managing the macroeconomic effects of aid, not on fiscal behavior *per se*, and the method is rooted in an accounting approach to macroeconomic aggregates. Results in this literature appear very sensitive to the way in which the accounting exercise is conducted. For example, Killick and Foster (2007, p. 173) report that aid to Uganda is only partly absorbed (27%) and mostly spent (74%); the IMF reports almost identical figures, whereas Martins (2011, p. 1953) estimates 100% absorption and spending for Uganda using time series methods.

2. For example, Michaelowa and Weber (2007) find some weak evidence that aid to the education sector is associated with increased primary school enrollment and completion rates. Alvarez and Acharya (2012) review the literature on the impact of health aid.

3. It is important to emphasize that it is not the amount of aid that generates effects on borrowing or tax revenue but specific policies (that were implemented) associated with the aid. This implies that the effects can be interpreted as due to conditionality rather than the aid itself.

REFERENCES

Aizenman, J., & Jinjarak, Y. (2009). Globalisation and developing countries – A shrinking tax base. *Journal of Development Studies, 45*(5), 653–671.

Alvarez, M. M., & Acharya, A. (2012). *Aid effectiveness in the health sector: WIDER working paper no. 2012/69*. Helsinki. <www.wider.unu.edu>.

Batley, R. (2005). Mozambique: The costs of 'Owning' aid. *Public Administration and Development, 25*(5), 415–424.

Baunsgaard, T., & Keen, M. (2005). *Tax revenue and (or?) trade liberalization: IMF working paper 05/112*. Washington, DC: International Monetary Fund.

Benedek, D., Crivelli, E., Gupta, S., & Muthoora, P. (2012). *Foreign aid and revenue: Still a crowding out effect?: IMF working paper WP/12/86*. Washington, DC: International Monetary Fund.

Booth, D., Christiansen, K., & Renzio, P. (2006). Reconciling alignment and performance in budget support programs: What next?. In S. Koeberle, Z. Stavreski, & J. Walliser (Eds.), *Budget support as more effective aid? Recent experiences and emerging lessons* (pp. 193–212). Washington, DC: The World Bank.

Bougheas, S., Dasgupta, I., & Morrissey, O. (2007). Tough love or unconditional charity?. *Oxford Economic Papers, 59*(4), 561–582.

Brun, J.-F., Chambas, G., & Guerineau, S. (2009). Existe-il un effet d'éviction de l'aide sur le prélèvement public? Clermont Ferrand, CERDI: updated version of CERDI "Etudes et Documents", 2008, No. 12.

Carter, P. (2013). *Does foreign aid discourage taxation?*. Mimeo: Department of Economics, University of Bristol.

Clist, P., Isopi, A., & Morrissey, O. (2012). Selectivity on aid modality: Determinants of budget support from multilateral donors. *Review of International Organizations, 7*(3), 267–284.

Clist, P., & Morrissey, O. (2011). Aid and tax revenue: Signs of a positive effect since the 1980s. *Journal of International Development, 23*(2), 165–180.

Cordella, T., & Dell'Ariccia, G. (2007). Budget support versus project aid: A theoretical appraisal. *Economic Journal, 117*(523), 1260–1279.

Dieleman, J., Graves, C., & Hanlon, M. (2013). The fungibility of health aid: Reconsidering the reconsidered. *Journal of Development Studies*.

Frantz, B. (2004). *General budget support in Tanzania: A snapshot of its effectiveness: USAID bureau for Africa background paper PN-ADA-029*. Washington, DC: USAID.

Gomanee, K., Girma, S., & Morrissey, O. (2005). Aid and growth in sub-Saharan Africa: Accounting for transmission mechanisms. *Journal of International Development, 17*(8), 1055–1076.

Gomanee, K., Morrissey, O., Mosley, P., & Verschoor, A. (2005). Aid, government expenditure and aggregate welfare. *World Development, 33*(3), 355–370.

Gupta, S., Clements, B., Pivovarsky, A., & Tiongson, E. (2004). Foreign aid and revenue response: Does the composition of aid matter?. In S. Gupta, B. Clements, & G. Inchauste (Eds.), *Helping countries develop: The role of fiscal policy* (pp. 385–406). Washington, DC: International Monetary Fund.

IMF (2005). *The macroeconomics of managing increased aid inflows: Experiences of low-income countries and policy implications*. Washington DC: International Monetary Fund, IMF Policy Development and Review Department (SM/05/306).

IOB (2012). *Budget support: Conditional results (evaluation of an instrument 2000–2011): IOB evaluation no. 369*. The Hague: Ministry of Foreign Affairs of the Netherlands.

Keen, M., & Simone, A. (2004). Tax policy in developing countries: Some lessons from the 1990s and some challenges ahead. In S. Gupta, B.

Clements & G. Inchauste (Eds.), *Helping countries develop: The role of fiscal policy* (pp. 302–352). Washington, DC: International Monetary Fund.
Killick, T., & Foster, M. (2007). The macroeconomics of doubling aid to africa and the centrality of the supply side. *Development Policy Review, 25*(2), 167–192.
Lloyd, T., McGillivray, M., Morrissey, O., & Opoku-Afari, M. (2009). The fiscal effects of aid in developing countries: A comparative dynamic analysis. In G. Mavrotas, & M. McGillivray (Eds.), *Development aid: A fresh look* (pp. 158–179). Basingstoke: Palgrave Macmillan UNU-WIDER Studies in Development Economics and Policy.
Lu, C., Schneider, M., Gubbins, P., Leach-Keman, K., Jamison, D., & Murray, C. (2010). Public financing of health in developing countries: A cross-country systematic analysis. *Lancet, 375*, 1375–1387.
Martins, P. (2010). *Fiscal dynamics in Ethiopia: A cointegrated VAR model with quarterly data: CREDIT research paper 10/05*. University of Nottingham, School of Economics.
Martins, P. (2011). Aid absorption and spending in Africa: A panel cointegration approach. *Journal of Development Studies, 47*(12), 1925–1953.
McGillivray, M., & Morrissey, O. (2001). Aid illusion and public sector fiscal behaviour. *Journal of Development Studies, 37*(6), 118–136.
McGillivray, M., & Morrissey, O. (2004). Fiscal effects of aid. In T. Addison, & A. Roe (Eds.), *Fiscal policy for development* (pp. 72–96). Basingstoke: Palgrave/WIDER.
Michaelowa, K., & Weber, A. (2007). Aid effectiveness in the education sector. In S. Lahiri (Ed.), *Theory and practice of foreign aid* (pp. 357–385). Amsterdam: Elsevier.
Mkandawire, T. (2010). On tax effort and colonial heritage in Africa. *Journal of Development Studies, 46*(10), 1647–1669.
Morrissey, O. (2012). Aid and government fiscal behaviour: What does the evidence say?: *WIDER working paper no. 2012/01*. Helsinki. <www.wider.unu.edu>.
Morrissey, O. (2009). Aid and the financing of public social sector spending. In K. Hujo, & S. McClanahan (Eds.), *Financing social policy: Mobilizing resources for social development* (pp. 141–162). Basingstoke: Palgrave/UNRISD.
Morrissey, O. (2006). Fungibility, prior actions, and eligibility for budget support. In S. Koeberle, Z. Stavreski, & J. Walliser (Eds.), *Budget support as more effective aid? Recent experiences and emerging lessons* (pp. 333–343). Washington, DC: The World Bank.
Morrissey, O., M'Amanja, D., & Lloyd, T. (2007). Aid and growth in Kenya: A time series analysis. In S. Lahiri (Ed.), *Theory and practice of foreign aid* (pp. 313–332). Amsterdam: Elsevier.
Osei, R., Morrissey, O., & Lloyd, T. (2005). The fiscal effects of aid in Ghana. *Journal of International Development, 17*(8), 1037–1054.
Ouattara, B. (2006). Aid, debt and fiscal policies in Senegal. *Journal of International Development, 18*(8), 1005–1022.
Pettersson, J. (2007). Foreign sectoral aid fungibility, growth and poverty reduction. *Journal of International Development, 19*(8), 1074–1098.
Remer, K. (2004). Does foreign aid promote the expansion of government. *American Journal of Political Science, 48*(1), 77–92.
Teera, J., & Hudson, J. (2004). Tax performance: A comparative study. *Journal of International Development, 16*(6), 785–802.
van de Sijpe, N. (2013a). Is foreign aid fungible? Evidence from the education and health sectors. *World Bank Economic Review, 27*(2), 320–356.
van de Sijpe, N. (2013b). The fungibility of health aid reconsidered. *Journal of Development Studies*.
van de Walle, D., & Mu, R. (2007). Fungibility and the flypaper effect of project aid: Microevidence for Vietnam. *Journal of Development Economics, 84*(2), 667–685.
Wagstaff, A. (2011). Fungibility and the impact of development assistance: Evidence from Vietnam's health sector. *Journal of Development Economics, 94*(1), 62–73.
World Bank (1998). *Assessing aid: What works, what doesn't and why*. New York: Oxford University Press.

APPENDIX A

Table 2. *Regional allocation of countries*

Country	Region	Country	Region
Argentina	LAC	Maldives	S Asia
Burundi*	SSA	Mexico*	LAC
Belize*	LAC_Low	Mongolia	Central
Bolivia	LAC_Low	Namibia	SSA
Brazil*	LAC	Nicaragua	LAC_Low
Bhutan	S Asia	Nepal	S Asia
Botswana*	SSA	Pakistan	S Asia
Cameroon*	SSA	Panama	LAC
Colombia*	LAC	Peru	LAC
Costa Rica	LAC	Philippines	Pacific
Dominica	LAC	Papua New Guinea	Pacific
Egypt	MENA	Paraguay	LAC
Ethiopia	SSA	Senegal	SSA
Fiji	Pacific	Sierra Leone	SSA
Ghana	SSA	Syria*	MENA
Guatemala	LAC_Low	Togo	SSA
Indonesia	Pacific	Tajikistan	Central
Jamaica	LAC	Tunisia	MENA
Jordan	MENA	Uganda	SSA
Kenya	SSA	Uruguay	LAC
Kyrgyzstan	Central	Venezuela	LAC
Sri Lanka	S Asia	Vietnam*	Pacific
Morocco*	MENA	Yemen*	MENA
Moldova	Central	Zambia	SSA
Madagascar*	SSA		

Notes: Countries indicated with * had data for the 1990s only, and Nepal had data for the 2000s only. Other countries excluded either because data were not available or because aid is far less important compared to the included countries (e.g., South Africa, Mauritius, and Seychelles are not included in SSA).