Fiscal Impact of Aid: A Survey of Issues and Synthesis of Country Studies of Malawi, Uganda and Zambia

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Acronyms

DAC	Development Assistance Committee (of the OECD)
DDSR	Debt and Debt-Service Reduction
GDP	Gross Domestic Product
GNI	Gross National Income
HIPC	Highly Indebted Poor Country
IBRD	International Bank for Reconstruction and Development (World Bank)
IDA	International Development Association (World Bank)
IFS	International Financial Statistics
IMF	International Monetary Fund
ODA	Official Development Assistance
OECD	Organisation for Economic Cooperation and Development
OLS	Ordinary Least Squares
PAF	Poverty Action Fund
TC	Technical Cooperation
VAR	Vector Autoregression
VEC	Vector Error Correction
WDI	World Development Indicators

Executive Summary

This paper's basic concern is with aid effectiveness and with the absorption of aid into the economies of recipient countries. It asks how the literature on the fiscal impact of aid adds to an understanding of these issues, and what light fiscal impact studies might shed on the nature and mechanics of the aid-growth relationship. It surveys aspects of the literature on aid and growth, budgetary choice, fungibility and fiscal impact and the empirical methodologies used in the last aspect. In doing so it serves as a theoretical and methodological introduction to fiscal impact case studies of three African countries – Malawi, Uganda and Zambia - which are presented in separate ESAU working papers, but whose main findings and conclusions are summarised here. The empirical conclusions of these studies are based on time series data from the 1970s to the early 2000s.

All three case-study countries have experienced economic troubles, and have pursued similar programmes of economic reform in the later 1980s and the 1990s. They have had defective, imperfectly consolidated, budgetary processes, and have been subject to fiscal indiscipline. They have all received large aid inflows relative to GDP, including substantial balance-of-payments and budget support, particularly in the early 1990s. Only Uganda, the most successful reformer, has successfully emerged from its difficulties into sustained growth and poverty reduction.

The weight of opinion among contributors to the aid-growth literature suggests that aid is effective in promoting growth, and that this is probably achieved, at least in part, through investment. However, there is ambiguity about the mechanics involved and about the flows of funds induced by aid which support them. Most aid is official, and is provided to governments for use in the financing of projects and programmes which ought to feature in their budgets – though in practice some are omitted. Budgets are therefore the first, and main, link in the chain of causation. Empirical evidence about the impact of public expenditure on growth is inconsistent, and the results are poorly explained. There is, moreover, no consensus in the literature about the micro-foundations of the budget process.

Much of the fiscal impact literature assumes that the objective of budget planners is to minimise a quadratic loss utility function. Previous authors have derived systems of structural and reduced-form equations from the first order conditions. They have estimated the reduced-form equations using instrumented estimates of budget planners' exogenous targets for the main fiscal aggregates.

This paper suggests that a more realistic schematic representation of the process is a Stone-Geary model in which budget planners are required, as a minimum, to finance certain basic mandatory or entitlement expenditures and, having done so, to allocate the additional resources available so as to equate the marginal social benefit of each outlay, thus maximising social welfare. This proposition is demonstrable in countries where budgets are planned in two parts, with dichotomies of funding and purpose, as has been the case in the case-study countries. The Stone-Geary welfare function is Cobb-Douglas with constant returns, so that discretionary expenditure shares are equal to marginal social benefits.

The country case studies estimate the structure and magnitude of the fiscal impact of aid using vector autoregression (VAR) analysis which is suitable for the analysis of time series of interrelated endogenous variables with lagged effects. It avoids prior assumptions about the underlying structural model and the use of estimated target variables.

A practical problem encountered in the econometric analysis is that, in all three countries, official development assistance (ODA) disbursed by donors has consistently exceeded by a wide margin the (grant and net loan) financing of budgets. The explanations for this include the use of ODA for debt and debt-service reduction, and the failure of donors and recipient countries to ensure that disbursements of project, programme, emergency and technical

assistance paid directly to suppliers by donors, are properly recorded in budgets. A further complication is that all three countries have made use of non-ODA loans (both official and commercial) to finance public expenditures, and these are confused with ODA in the budget data. The econometric analyses of the three countries, therefore, quantify separately the impact on fiscal aggregates of both the external finance reported in national budget sources and of ODA as recorded by donors and reported by OECD.

The omission from budget receipts of significant proportions of official aid disbursements implies that recipient countries' public expenditure accounts also omit certain classes of expenditure. This should be a matter of concern to the donors of budget support, alongside other 'fiduciary' concerns.

The case studies demonstrate that the prime effect of external financing/aid in all three countries has been to increase the size of their development budgets – in some specifications by more than the magnitude of the aid injection. The impact on recurrent budget outlays has been either positive, but lower than that on the development budget (Uganda, Zambia), or negative (Malawi). Domestic revenues have risen with aid in Malawi and Uganda (in Malawi only in the long run),and have fallen in Zambia. However, the causality here is probably indirect and is potentially spurious. The effect of aid on domestic borrowing has been case-specific: in Malawi, the effect has been to reduce borrowing, in Uganda to leave it unchanged and in Zambia to increase it.

This paper points to case-study evidence that the practice of fiscal dichotomy inherited from the 1960s and 1970s - with recurrent budgets being financed from domestic revenues and development budgets from aid and other external sources - has persisted in some degree in the three countries, in spite of the institutional amalgamation of their ministries of finance and development planning. Only in Uganda has the practice been eroded by recent budget reforms. This lends some weight to a broad Stone-Geary interpretation of their budget processes, with mandatory and entitlement (payroll, pensions etc.) expenditures which are hard to compress financed in the main from within the (relatively stable) recurrent budget, and discretionary new projects and programmes from the (more volatile) development budget. As donors have attached greater importance to the operation and maintenance of government services, and have increased the share of (volatile) fungible programme support in their aid disbursements, so recipient countries have increased the share of non-investment expenditures in their development budgets (Malawi and Uganda, but not Zambia).

The persistence of dual budgeting, and the rigidity in budget management that it implies, has implications for the donors of general budget support. This support is predicated on an assumption of budgetary fungibility, permitting the efficient deployment of all resources for the production of public services. This is rendered invalid by compartmentalisation.

The interpretation placed on the excess of incremental development expenditure over aid injections is more speculative. It may arise from the over-optimistic planning of development budget expenditures relative to actual receipts of external financing, or simply from the 'gearing' effect of aid on public expenditure whereby domestically financed 'counterpart' funds have to be mobilised to complement and accompany external financing. A third possibility, as in Malawi, is that the development budget substitutes for the recurrent budget in financing certain classes of operating expenditure.

The empirical results yield plausible indications in two of the three countries about the effect of aid on macroeconomic stability. In Zambia, they suggest that the government failed to use aid to stabilise the economy because it was followed by a weakening in domestic revenue mobilisation and an increase in domestic borrowing. In Malawi, on the other hand, the results suggest the opposite, namely lower borrowing and higher revenues. Nevertheless, Malawi has remained prone to macroeconomic instability. In Uganda, the estimated effect on macroeconomic stability has been insignificant, but is interpreted as supportive of the country's success in stabilisation. The econometric analysis suggests that the impact on

domestic revenue has been positive, whereas on domestic borrowing it has been insignificant in the long run. Caution is required in using these results, however, because budgets in all three countries are imperfectly consolidated, omitting significant fiscal and quasi-fiscal transactions, and because fiscal and monetary data on governments' domestic borrowing have been unreconciled.

The VAR/VEC-based econometric analysis highlights the presence and apparent importance of direct and indirect lagged effects in public finance - extending over periods of several years. These are country-specific, and not readily perceived by budget planners, but the evidence underlines the possible longer-term implications of current budget choices. In particular, the effect of aid in raising development expenditure by more than the size of the injection is found to have been persistent.

The country studies, combined with earlier research results, show that fiscal effects research casts only limited direct light on the mechanics of the aid-growth relationship. They indicate variety in the pattern of effects, suggesting that different growth outcomes can be associated with very similar patterns of fiscal impact and *vice versa*. The impact of aid must therefore *ex ante* be considered indeterminate. This paper does, however, point out the probably significant contrast between (i) the relatively stable flow of external assistance to Uganda and the more volatile flows to Malawi and Zambia, (ii) the (recently) disciplined, purposeful and effective planning of public expenditures in Uganda, contrasting with the persistent fiscal indiscipline and haphazard expenditure planning in the other two countries, and (iii) Uganda's success in using aid to rehabilitate economic infrastructure and institutions. The paper concludes, however, that these differences alone do not account fully for Uganda's superior growth and poverty-reducing growth record, which is due also to the more attractive environment for enterprise that has been created. In other words, the effectiveness of aid has been dependent on the policy environment in these three recipient countries.

Could the similarity of estimated impacts of aid on development expenditure arise from the statistical methodology used rather than from the underlying institutional and behavioural similarities of the budget processes in the three countries? The authors deny this, noting that the same statistical methodology applied recently to Ghanaian data identified response patterns in Ghana that were somewhat different from those found in Malawi, Uganda and Zambia.

The survey section of this paper draws attention to the differences in fiscal response patterns between different countries found in the literature. The conclusions of this paper and the accompanying country studies lend weight to other evidence of country specificity, though with the rider that inherited institutional similarities may pre-dispose to similar fiscal impact responses.

Chapter 1: Introduction

The theme of this paper is the impact of aid on public expenditure and other fiscal aggregates in aid-recipient countries, seen as a link in the chain of causality leading from aid to economic growth and poverty reduction. The paper brings together in summary form the arguments and conclusions of three working papers by ESAU on the fiscal impact of aid in three countries in Eastern and Southern Africa – Malawi (Fagernäs and Schurich, 2004), Uganda (Fagernäs and Roberts, 2004a) and Zambia (Fagernäs and Roberts, 2004b). Most external aid to these countries has been official, most of it provided to the countries' governments, and most of this has entered the channels of public expenditure. There is therefore a strong *prima facie* likelihood that the study of the fiscal impact of aid receipts will yield information on what expenditures have been facilitated, how aid has contributed to the role of governments in the functioning of the countries' economies, and thereby on how and why it may have contributed to their economic growth.

The three countries, in their very different ways, have had a troubled past, featuring conflict in the case of Uganda and periods of economic mismanagement in all three cases. They have also, since the mid-1980s, been heavily aided. Net aid per capita in the 1990s has been approximately $40/year in Uganda, $50/year in Malawi and $65/year in Zambia (in current prices). Aid receipts have amounted to some 25% of GNI in Malawi and Zambia, and a more modest but still considerable 15% in Uganda. The effects of aid must therefore have been substantial and significant.

To place the summaries of the country studies in context, and to justify the methodology used in the impact analysis, the presentation of conclusions is preceded by a survey of some of the antecedent literature, both theoretical and empirical, and some reflections on how the budget process can be, and has been, modelled. The economic literature antecedents, the issues to be explored, the methodological framework and many of the data and econometric application problems are common to all three country studies. Rather than repeat this material in each of the country study papers these common elements are brought together in the present paper in its first and second substantive chapters.

There is a growing empirical country-study literature on the fiscal impact of aid, and on the related topics of the fungibility of aid and its effectiveness in promoting growth and poverty reduction. Alternative empirical methods have been used, and statistically significant inferences have been drawn. The analytical conclusions reached, however, have been *sui generis* for each country, and no patterns of behaviour generalisable across groups of developing countries have been clearly identified. The three country studies which are the subject of this synthesis do, however, detect some common patterns, notably in respect of the responsiveness of development budget expenditures to the availability of aid, though in other respects there are dissimilarities.

In the remainder of the paper, Chapter 2 is devoted to a survey of issues, models and methodologies in the assessment of fiscal impact. Chapter 3 discusses the composition of aid and other sources of external finance for the three countries, and the extent to which aid inflows are treated as sources of financing for public expenditure. Chapter 4 summarises for each country the historical background, the empirical results and the interpretation to be placed on them. Chapter 5 draws thematic conclusions about the contribution of aid to development, the budget processes through which aid is absorbed and the methodologies used in fiscal impact studies.

Chapter 2: Issues, Approaches and Methodology – a Survey

The three papers underlying this synthesis describe the fiscal impact of aid over the last thirty years on Malawi, Uganda and Zambia. They add to the growing body of similar country studies, some of which were reviewed by McGillivray and Morrissey (2001). Other recent country studies have been contributed by Franco-Rodriguez et al. (1998) on Pakistan, Franco-Rodriguez (2000) on Costa Rica, Swaroop et al. (2000) on India, McGillivray and Ouattara (2003) on Côte d'Ivoire, Osei et al. (2003) on Ghana and Sweeney et al. (2003).

These are all single country studies which use time series data to extract information about historic interactions between fiscal expenditures and receipts – including aid. The fiscal response model used in these papers is based on the work by Franco-Rodriguez et al. (1998) and McGillivray and Ahmed (1999), where aid is treated as endogenous. In earlier versions of fiscal response models, such as Heller (1975), Mosley et al. (1987), Gang and Khan (1993), Khan and Hoshino (1992), aid is exogenous.

The interest for development economists of the fiscal impact of aid is twofold. First, and most obviously, it offers additional information about what aid has actually done in recipient countries, and on how it has been used. Second, and more broadly, it contributes to an understanding of how, and when, aid has facilitated economic growth, and what complementary factors are necessary for its effectiveness.

2.1 Aid, public expenditure and growth

To the first of these questions the answer is generally that most aid has been absorbed into the beneficiary country's economy through the fiscal process, and that it is most likely to have given rise to public expenditures which would otherwise not have occurred. Some other possible uses of aid that are not captured in the fiscal accounts are discussed in the next chapter.

The principal objective of the country studies of Malawi, Uganda and Zambia is to identify and to characterise the expenditure programmes to which aid receipts have predominantly contributed. However, though the justification for government intervention in the economy, *inter alia* through public expenditure, may be firmly based in the theory of the second-best, namely, that some markets fail and that it is necessary to intervene to supply public goods and to internalise externalities, there is no clear-cut economic theory about how the composition of public expenditure affects growth, and empirical evidence about it is ambiguous (Devarajan et al., 1996).

The question of whether aid promotes growth has been hotly debated among development economists for a generation. Answers have been sought from econometric evidence, but this has yielded ambiguous results. The reasons for the ambiguity have been multiple. Early empirical specifications were naïve and simplistic, both about the underlying model of growth and about the pitfalls of using endogenous regressors. These problems have been overcome in contemporary studies using instrumental variables. More fundamentally, however, all econometric studies have used cross-country or panel data, and they have searched for average, across-the-board effects common to a wide range of very heterogeneous developing countries. There is no necessary reason, however, why the provision of aid should have identical or common effects in very diverse circumstances.

Thus it is that researchers using similar methodology but applied to somewhat different data sets have reached different conclusions. Boone (1994) found that aid increased consumption, but had no significant effect on growth. Durbarry (2004) reaches exactly the opposite conclusion. Burnside and Dollar (2000) concluded that aid on its own had no effect on growth, but that, in association with good policies, its effect was positive. Hansen and Tarp (2000) retorted with evidence that aid's

effects on growth were positive, regardless of policy. They attributed the Burnside-Dollar result to the wilful omission of outliers from their data set. Their conclusions confirmed earlier findings by Mosley and Hudson (1995) and have been subsequently replicated by Lensink and White (2001), and Morrissey (2001). These authors confirm the result that aid has contributed to growth, and that there is little effect of policy on aid's effectiveness detectable in cross-country analysis using aid as an argument in reduced-form growth equations of various specifications.

The thus apparently confirmed conclusion that aid has a positive effect on economic growth is comforting for agencies which manage official aid and for the supporters of the cause of development assistance. It provides useful support to those whose political task it is to demonstrate that aid is generally effective. However, positive and significant coefficients on aid variables in reduced-form estimating equations do little to explain how aid is absorbed into recipient countries, and the impact it has on domestic expenditures and the efficiency with which resources are applied at the margin. The underlying model of growth is not made explicit. In particular, it is not clear if the impact of aid is via expenditure multiplier mechanisms, which are reversible if aid is suspended; or whether it is achieving its effects by financing the building of productive capacity which, in favourable circumstances, can be expected to yield incremental income over a period of years. Furthermore, the aid-growth literature is enveloped in the much larger literature on the determinants of growth which has yielded results indicating that a very wide array of factors - geographical, social, political and institutional as well as economic - exert potential influence on growth outcomes. The policy significance of this literature has been diluted by the discovery of a great many factors with a positive association with economic growth.

To the extent that it can be demonstrated that aid promotes higher levels of public expenditure than would be possible in the absence of aid, the literature on public expenditure and growth provides some empirical evidence on the basis of which to formulate hypotheses about how aid might contribute to growth in developing countries. Studies on data from OECD countries (Grier and Tullock, 1987; Aschauer, 1989) reach the conclusion that government (mainly consumption) expenditure which directly contributes to household welfare has a significantly negative effect on growth; on the other hand, government expenditure (such as on infrastructure) which complements private investment and lowers production and transaction costs helps to explain private sector productivity growth. Barro (1991) reaches similar conclusions using data on 98 developing as well as developed countries. For the purposes of this exercise he classifies public expenditure on education as 'productive'.

Devarajan et al. (1996) tested these propositions on public expenditure composition and growth on a 119-country data set consisting entirely of developing countries. They regressed five-year forward moving averages of real GDP growth on the ratios of capital and recurrent expenditures on defence, health, education and transport and communications to total public expenditure, and reached the unexpected conclusion that capital expenditure and expenditure on supposedly 'developmental' programmes (education, health, infrastructure) were negatively related to growth, and that only recurrent expenditure had a positive effect. They attribute their finding to the lack of economy, efficiency and effectiveness in the use of public expenditure in many countries. In the same vein, Kweka and Morrissey (2000) find that consumption spending excluding health and education is positively associated with growth in Tanzania, while the effect of public investment is insignificant; the implication being that public investment in Tanzania is non-productive, whereas consumption expenditure supports income growth.

These results, even if atypical of the consensus of the literature, confirms the intuition that public expenditure, whether or not aid-financed, has to be deployed efficiently and effectively if it is to contribute to sustained growth.

2.2 Counterpart flows of funds - fungibility

In principle, aid can be absorbed into a recipient country in a variety of different ways, and can promote different and simultaneous flows of funds. Aid can be (and for the most part is) absorbed mainly in the public sector, or it can increase resources available to the private sector, by direct allocation or on-lending. Whether in public or private hands, aid can be either saved or spent. If saved, it may be used to reduce debt, or to accumulate official reserves, or to build portfolios of private assets held abroad (capital flight). If spent, it may finance investment, productive consumption (e.g. current expenditure on education, health, security or infrastructure maintenance) or unproductive, sumptuary, consumption. If used to finance public expenditure it may be used accountably and efficiently for the purposes for which it is ostensibly devoted, or it may be diverted to other uses or misappropriated.

Aid donors generally intend and hope that their assistance will contribute, in various more or less specified ways, to building capacity for development and poverty reduction. However, their control over the knock-on flows of funds in the recipient economy is only partial, because to a greater or lesser extent their aid is fungible. Insofar as it is earmarked for purposes for which financing would in any case have been made available it can be redeployed for other uses, notably through the government's budget allocation process. Estimating the extent of fungibility is no easy task because it involves some understanding of the counterfactual.

The commonest empirical methodology used has been in the 'fiscal impact' or expenditure impact tradition which uses cross-country or panel data to look for associations between aid and expenditure on investment or consumption, and between sectorally directed aid and increases of (public) expenditure in the sectors for which it was intended. The approach is to estimate a simultaneous linear expenditure system that is derived from a standard utility maximisation postulate. Examples of studies in this category are Feyzioglu et al. (1998), Swaroop et al. (2000) and Khilji and Zampelli (1991). Some fungibility studies do not adopt an explicit theoretical framework and estimate a set of simultaneous equations in a more ad hoc way. Examples in this category are Pack and Pack (1993), Cashell-Cordo and Craig (1990) and Gupta (1993). Results from these studies, as reviewed by McGillivray and Morrissey (2001), are summarised below.

Feyzioglu et al. (1998) demonstrate that aid for infrastructure projects is less fungible than other forms of assistance, and that countries whose budgets are highly dependent on aid finance have less scope for making aid fungible than countries where aid is only a marginal source of finance. Devarajan et al. (1999) reach similar results about aid for Africa, with the additional observation that aid for education has also had an almost one-for-one effect on educational expenditure. As the number of donors increases, fungibility in Africa also increases. Gomanee et al. (2002) find evidence that aid for sub-Saharan Africa has been substantially used to finance investment, and that investment – both aid-financed and other – has been the main engine of growth. In common with many other contributors to the growth literature, they also find that government consumption expenditure has had a negative impact on growth. Durbarry (2004) finds reassuringly that aid (unlike domestic income) has no significant long-term positive effect on consumption expenditure.

The extent of fungibility is, however, a relatively minor issue compared with the questions of how aid-recipient countries are allocating resources in aggregate – on average and at the margin - and whether they are using resources cost-effectively for purposes consistent with pro-poor growth.

McGillivray and Morrissey (2000 and 2001) point out that some aid is accidentally fungible – because it is transferred but not absorbed into intended expenditure programmes, due to budgeting and expenditure management weaknesses – and that other aid which could have been fungible in practice has been used to finance additional expenditure in the sectors and projects desired by donors. These authors rightly point out that these matters are of marginal significance compared with the 'policy/expenditure direction in which countries are moving'. Tangible additionality in this sense, once regarded as a touchstone of aid effectiveness, is neither a

necessary nor a sufficient condition for ensuring that aid is effectively used for poverty reduction. Donors, particularly the providers of budget or sector support, are nowadays rightly concerned with the overall inter-sectoral and intra-sectoral allocation of public expenditure at the country level, with its goals and purposes and with its cost-effectiveness.

McGillivray and Morrissey (2001) criticise fungibility studies on the grounds that they allow only a limited analysis of the broader dynamic fiscal impacts of aid. Fiscal response models, in contrast, draw attention to the effects of aid on tax effort, total spending and domestic borrowing over time. This leads to conclusions about how aid affects government fiscal behaviour and how spending plans are implemented. Fiscal response models reveal dynamic interactions within the budget process, including fungibility between the recurrent and development budgets, whereas fungibility models, which only look at the partial, contemporaneous relationship. In principle, fiscal response models could also analyse sectoral fungibility, but in practice this would be too demanding econometrically because of the large number of variables.

2.3 Welfare maximisation through public expenditure

The economics of public expenditure choice is built on microfoundations of utility maximisation. In welfare economics, the rationale for public expenditure is that markets fail adequately to provide certain goods and services which are nevertheless valued as welfare-enhancing by the community either because they complement productive private investment, or because they supplement/complement private consumption. Governments provide these public or quasi-public (e.g. 'club') goods, which can be valued by reference to their marginal productivity or to consumers' revealed or declared willingness to pay. Governments also effect pure income transfers for reasons of social policy and political interest.

Public expenditure is – in theory - optimised when the marginal social benefits of each output are equalised, and when the sum of marginal social benefit from all outputs just equals the marginal social costs of their financing. An ideal representation is in equation 2.1 where x_i are public and publicly-financed goods and services whose provision brings positive social benefit, but with diminishing marginal utility. These goods and services are paid for by taxes T_j which diminish social welfare. The objective of public policy should be to maximise net social benefit from public expenditure, given that higher expenditure has to be financed from higher taxes. There is no explicit budget constraint.

$$(2.1) \qquad Max \left(U\left(\sum_i x_i \right) - U\left(\sum_j T_j \right) \right) \text{ with } U_x > 0,\ U_{xx} < 0\ ;\ U_T < 0$$

The composition of public expenditure is given by equalising all the U_{xi}, and the volume of public expenditure is given at the point where U_x equals to U_T.

In reality public expenditure policy-makers know neither the marginal social benefit of public expenditures nor the marginal social costs of taxation. They also face political and practical limits on the tax revenue they can raise. Their practical problem may thus be better, though still simplistically, represented by equations 2.1' and 2.2. These show the budget task as one of maximising the social welfare obtainable from the x_i publicly provided goods and services, weighted by politically determined welfare weights w_i and summed, subject to a budget constraint limiting expenditure on them px_i not to exceed total available resources R, i.e. the sum of taxes $t_i y_i$ (assumed to be proportionate to expenditures y_i), allowable net borrowing B and receipts of aid A:

(2.1') $Max\left(\sum_i w_i x_i\right)$

subject to:

(2.2) $\sum_i p_i x_i \leq \sum_i t_i y_i + \mathrm{B} + \mathrm{A} = R$

Needless to say, most public finance and expenditure decisions in practice are not formally decided on this basis – *inter alia* for lack of information of the marginal social benefit of most expenditures. Nevertheless, social cost-benefit analysis, as applied to important public investment projects, deploys precisely this framework.

A practical objection to the welfare maximisation view of the public budget process is that it ignores political realities, legislative mandates and other entitlements which act as constraints on resource allocation, making the theoretical optimum inaccessible. Over the years various constituencies - notably public service workers, and certain public service and public transfer beneficiaries – have acquired what they consider to be entitlements to absolute amounts of, or at least shares of, public expenditure which politicians are reluctant or politically unable to violate. The payment of pensions, the wages and salaries of established personnel, and the provision of politically sensitive public services may thus be considered inviolable – in terms of either absolute or relative resource shares. In addition, governments are required to make certain mandatory ('constitutional and statutory') payments, for example to service public debt, to meet international obligations and to pay the household expenses of the head of state. The scope for social utility maximising decisions is thus confined to a residual 'discretionary' element in the public expenditure available, once mandatory and entitlement expenses have been met.

An alternative specification for the utility function distinguishes between mandatory, entitlement or priority programmes to be defended against the vagaries of budget financing, and discretionary or non-priority programmes, whose funding is allowed to be a function of financial availability.

The Stone-Geary welfare function, originally conceived as a model of consumers' choice, provides a representation of this mandate-constrained public expenditure utility maximisation problem. In equation 2.3 mandatory or unavoidable public provisions of items i are noted as $\bar{x}_i$.[1] Having provided for mandatory outlays, the policy-maker seeks to maximise a Cobb-Douglas welfare function of discretionary expenditure on each item $\left(x_i - \bar{x}_i\right)$. There are constant returns to scale, so the elasticities β_I(welfare weights) sum to unity and also determine expenditure shares.

(2.3) $Max\left(\prod_i \left(x_i - \bar{x}_i\right)^{\beta_i}\right)$

This, when maximised subject to a budget constraint consisting of available domestic revenues and foreign grants and loans (cf. equation 2.2), yields a system of linear expenditure equations defining outlays on each programme.

(2.4) $p_i x_i = p_i \bar{x}_i + \beta_i \left(R - \sum_{j \neq i} p_j \bar{x}_j\right).$

where R, as previously, represents available budgetary resources.

[1] Needless to say, for some items of public expenditure there is no discretionary element, while for others all expenditure is discretionary.

This framework, though not specifically devised to characterise the budgetary process, is a reasonable representation of the common reality that outlays, both at the central and sectoral budget levels, consist of predetermined (mandatory and/or entitlement) expenditures, plus discretionary resources available for allocation according to current budget strategy and priorities.

It has been the practice of many developing countries to differentiate their recurrent and development budgets, giving lead responsibility for each to different central ministries. It has been common to find that the development ministry or planning commission has been entrusted with the preparation, financing and execution of the development budget, and that the responsibilities of the ministry of finance have been confined to the recurrent budget and managing the national debt. Recurrent budgets often comprise high shares of statutory and other (short-term) incompressible entitlement outlays, including the wage bill for permanent public employees, the costs of the security services, (a share of) the operating costs of existing economic and social public services, and interest on public debt. They have been largely reliant for their resources on domestic revenues, supplemented as required by domestic borrowing. Recurrent budget resources are thus relatively stable in volume. Resource shortfalls are managed by reducing real budget allocations (shared between sectors and functions, usually according to informal but established principles), often giving rise to arrears of payment and disproportionality between wage and non-wage outlays.

Development budgets, whose expenditures are largely discretionary, typically draw much of their financing from donors or foreign borrowing, which is often not fully budgeted – though this is supplemented by domestic 'counterpart' funds needed to complement inflows of external finance. Development expenditures comprise investment outlays for fixed capital formation and other expenditure on new public service programmes. There has been an increasing tendency, however, especially in countries where recurrent budgets have been prevented by revenue shortages and rising debt-service payments from providing adequately for the operation of existing public services, for development budgets also to finance selected operating costs.

This is still the pattern in much of South Asia. It used to be the practice until the 1990s in each of three countries covered by this synthesis – Malawi, Uganda and Zambia. All three have now formally amalgamated their finance and development planning functions within single ministries of finance and development. The dysfunctional institutional dichotomy has now been abolished in many countries, thus ostensibly restoring the unity, comprehensiveness and coherence of the budget. In practice, the habits of dual budgeting persist, and with them the danger of incoherence between development expenditure and provision for recurrent expenditure on maintenance and operation.

This Stone-Geary-inspired representation of the budget process, albeit schematic, is more true to life than the naïve, welfare economics-based model of budgetary decision-taking which is predicated on an absence of baggage and prior commitments, and in which no resources are pre-empted. Cost-benefit welfare maximisation techniques remain relevant to policy choice and expenditure allocation decisions within the Stone-Geary framework, but they can realistically be applied only to discretionary expenditures.

2.4 Choice-theoretic framework for fiscal impact studies – loss function minimisation

Contributors to the fiscal impact literature have made use of a different, *ad hoc*, microfoundation framework as a basis from which to construct structural models of budget choice and reduced-form equations for econometric estimation. They postulate that budgetary choices are well ordered, consistent and unconstrained by inherited commitments, and that national welfare (utility) is maximised when there is no difference, *ex-post*, between actual and desired levels of tax, expenditure, borrowing and aid magnitudes. Utility can thus be represented by means of a quadratic loss function of the form:

$$(2.5)\quad U = \alpha_0 - \frac{\alpha_1}{2}(I_g - I_g^*)^2 - \frac{\alpha_2}{2}(G - G^*) - \frac{\alpha_3}{2}(T - T^*)^2 - \frac{\alpha_4}{2}(A - A^*)^2 - \frac{\alpha_5}{2}(B - B^*)^2,$$

where the asterisks indicate exogenous, politically-determined, target levels of the endogenous variables and $\alpha_i > 0$ for i = 1,...,5. I_g is public sector investment, G is government consumption, T is domestic revenue and B is domestic borrowing. As regards aid, the target A* can be seen as representing donors' commitments. Actual aid received (A) is taken to be endogenous because subject to fiscal expenditure management, government-donor coordination and other factors affecting the rate of implementation of aid projects and programmes, and thus the actual flow of disbursements. The government maximises its utility if it achieves all targets, the maximum value for utility being the constant α_0.

The government seeks to maximise equation 2.5, subject to a budget constraint. This may simply consist of the sum of domestic revenues, plus gross external financing, minus debt amortisation,

$$(2.6)\qquad I_g + G = T + A + B$$

where terms on the left-hand side represent government investment (I_g) and government consumption (G), and those on the right-hand side domestic revenue (T), aid (A) and net borrowing (B). Or the constraint may be complicated by restrictions placed by aid donors on the uses to which their aid is put.

$$(2.7)\qquad G = \rho_1 T + \rho_2 A,$$

$$(2.8)\qquad I_g = (1 - \rho_1)T + (1 - \rho_2)A + B$$

where ρ_1 and ρ_2 respectively represent the proportions of domestic revenue (T) and aid (A) allocated to government consumption (G). Equations 2.7 and 2.8 are a decomposition of the overall budget constraint

Standard fiscal response models maximise equation 2.5, subject to equations 2.7 and 2.8. One problem with this approach is that it over-constrains the model, potentially preventing the government from attaining α_0 even where aid revenues are sufficient to meet all targets. One possibility is to maximise, subject to equation 2.6. However, this implies that there is no constraint on how receipts are allocated, implying complete fungibility, and it may not be a realistic representation of government fiscal behaviour. In practice, the government is subject to pressures from politicians, pressure groups and donors, all trying to influence the allocation of revenues. These constraints can be taken into account by replacing equations 2.7 and 2.8 with:

$$(2.9)\qquad G \le \rho_1 T + \rho_2 A + \rho_3 B.$$

The justification for the inequality is that there are external constraints that limit the government's ability to allocate revenues. Donor preferences and the government's domestic commitments govern the values of ρ_i in equation 2.9, and there is no guarantee that targets are met even though aggregate receipts may satisfy equation 2.6. On the assumption that equation 2.9 is binding, the external constraints prevent the attainment of α_0, because at least one spending target cannot be met.

Assuming that equation 2.9 is binding, equation 2.5 is maximised subject to equations 2.8 and 2.9. This yields sets of structural equations (which show the direct effect of aid) and reduced-form equations (which show the direct and indirect, i.e. total, effects of aid), which can be estimated

econometrically. The set of structural simultaneous equations links all fiscal magnitudes to one another, treating all observed values as endogenous. The models are solved either by two-stage least squares or more sophisticated three-stage least squares techniques, using cross-section or time series data. This requires the estimation of (unobserved) target values for each fiscal aggregate, these being the only exogenous elements in the model.

Franco-Rodriguez (2000) defines the targets as long-run relationships identified from a cointegrating equation. Target values are estimated as functions of hypothetically relevant exogenous instruments. The fitted value from these regressions then functions as the estimate for the target, and represents a long-run equilibrium value. In reality, fiscal outcomes deviate from the equilibrium, and the model serves to illustrate the effect on each fiscal aggregate of the actual divergence of the other aggregates from their equilibrium values. The reduced-form model (where the coefficients reveal total effects) shows each fiscal aggregate as a function of each exogenous target variable. If the budget constraints are met at the targets, the actual values of each fiscal variable will equal their target values.

The quadratic loss utility function implies that any departure, whether positive or negative, in revenue and expenditure out-turns from what was originally desired or targeted gives rise to a welfare loss. The rationale for this formulation is purely macroeconomic. Quadratic loss utility function maximisation offers no explanation of public expenditure allocation in terms of the social benefits to which expenditure should give rise. There is no obvious representation in the model of actual budgetary processes: the procedures used by contributors to the literature for estimating the target values of fiscal aggregates seem remote from those used in real life by finance ministers in determining their budget estimates.

2.5 Results from the existing literature

In their review of fungibility studies and fiscal response models, McGillivray and Morrissey find great variations in the empirical results. What emerges is that one cannot generalise about the effect of aid on fiscal policy and that results are highly country-specific. The studies reviewed also use different estimation techniques, which complicates comparison. However, aid clearly has significant effects on fiscal aggregates, but the sign and magnitude of the impacts vary.

Using the analytical tool outlined in Section 2.4,[2] empirical estimates have been made of the impact of aid on government consumption, government investment and domestic revenues in India (Gang and Khan, 1991), Pakistan (Franco-Rodriguez et al., 1998), the Philippines (McGillivray and Ahmed, 1999), Costa Rica (Franco-Rodriguez, 2000), Côte d'Ivoire (McGillivray and Ouattara, 2003) and Ghana (Osei et al., 2003). The conclusions reached by the authors of these studies are summarised in Table 2.1.

Table 2.1 Summary of fiscal impact study results

Country	Effects of a unit of aid on (ratios):		
	Revenue	**Government Investment**	Government Consumption
India	0.0	0.0	**0.0**
Pakistan	-3.6	0.1	**-2.4**
Philippines	-0.1	0.02	**0.02**
Costa Rica	0.05	-0.02	**0.07**
Côte d'Ivoire	-0.92	**-0.11**	
Ghana	**0.82**	**0.09**	**0.60**

Sources: McGillivray and Morrissey (2001); Osei et al. (2003)

[2] Except in the case of Ghana – see below.

Depending on the country concerned, the direct and indirect effects of aid inflows have thus been either to raise or to lower domestic revenues and government consumption and investment. In most cases the effects are less than *pro rata* to the volume of aid; in the cases of Pakistan and Ghana, however, the estimated impact on fiscal magnitudes has been greater than the amount of aid. The negative signs on the coefficients on revenue and government consumption in Pakistan are surprising and counterintuitive (the implication is that aid was associated with such a large reduction in tax revenue that consumption spending had to be reduced).

Osei et al. (2003) used vector autoregression analysis (VAR) to analyse the effect of aid on the budget in Ghana in the period 1966-98. Their impulse response function model suggests that, after stabilising, a sustained injection of aid led to higher government consumption (60% of the value of the injection), but to only a small increase in government investment (9% of the injection). Aid was associated with a large rise in domestic revenue (82% of the aid injection) and a somewhat smaller decrease in domestic borrowing (38% of the injection). The analysis suggests that aid to Ghana was used more to facilitate fiscal adjustment than to finance higher levels of public expenditure.

Casting the net a little wider to include also the fungibility literature, some broad generalisations are possible:

- *Aggregate expenditure.* More often than not, aid shocks have been associated with increases in total spending of greater magnitude (McGillivray and Morrissey, 2001) – though this was not the case in the countries shown in Table 2.1.
- *Recurrent and development expenditure.* The literature permits no generalisation about the effects of aid on recurrent and development expenditure. According to fungibility studies, aid is clearly fungible, but the extent varies. The fungibility literature does show, however, that donors should not expect to be able to target aid accurately to particular sectors. Empirical fiscal response studies reveal no consistent pattern in the allocation of aid between recurrent and development expenditure. The estimated impacts are often surprisingly weak, and occasionally of the wrong – counterintuitive – sign. However, they lend no support to the conclusion of some fungibility studies that aid increases consumption more than investment.
- *Revenue mobilisation.* The literature shows that aid may discourage tax effort, but that this does not occur in all cases.
- *Domestic borrowing.* The effect of aid on domestic borrowing is ambiguous, in terms of both sign and magnitude. Judging from the effect of aid on spending, one would expect aid to be associated with higher borrowing, but the literature is once again not conclusive and results remain country-specific.

Even if general fungibility is high, McGillivray and Morrissey (2001) argue that an excessive concern with fungibility is not warranted, as the evidence that increases in government consumption expenditure have a negative impact on growth is not compelling, and permits no general claim that recurrent expenditure hampers growth (see Ram (1986), Grossman (1988) and Lin (1994) and section 2.1 above).

Donors are now more concerned with the allocation of aid and public expenditure by sector, rather than by economic category, in particular with the budgets for health and education. They recognise the importance of recurrent expenditure to the development of these services. The fungibility literature, has been more informative than the fiscal effects literature on the impact of aid on sectoral allocation.

2.6 Critique of existing models

While fiscal response models derived from quadratic loss utility functions and estimated using instrumental variables to estimate desired or 'target' fiscal magnitudes can shed light on the effects of aid on fiscal policy, McGillivray and Morrissey (2001) show that they are not without problems.

These fiscal response models are difficult to estimate and highly sensitive to data quality. Moreover, many of the studies report only the result of structural equations and therefore reveal only the direct effects, whilst ignoring interactions between variables. Estimation techniques such as three-stage least squares can also be problematic as data series for developing countries are usually relatively short.

More fundamentally, it has proved difficult to find generally accepted, satisfactory rationales for, and estimates of, the target fiscal variables. An obvious procedure would be to take *ex-ante*, planned, budget estimates as desired target values. It may be objected that budget estimates are endogenous to the budget process and their use may give rise to estimating bias. In practice, however, budget estimates combine predetermined and discretionary elements: in part they are projections based on prior years' out-turns, but in part they also reflect new policies on taxation, expenditure and debt intended to achieve higher or different public service performance targets and macroeconomic stability, and to appeal to political constituencies. The endogeneity objection to using budget estimates as the exogenous targets in quadratic loss function regressions is thus not wholly sustainable. However, if budget estimates are taken as target independent variables, and if these targets are achieved, the fitted equations would be identities.

Another problem associated with fiscal response models is the unrealism of the mathematical specification of the quadratic loss utility function. This relates social welfare to fiscal aggregates defined exclusively by economic category (investment, consumption, etc.) and not at all by function, output or objective, which are the categories in which practical budget decisions are taken. Moreover, budget choices in real life are not as stably defined as contributors to the fiscal response literature assume fiscal targets to be. In reality, decisions are based on priorities which alter inter-temporally with changing macroeconomic circumstances and objectives, which are subject to the constant ebb and flow of varying political influences, but which are also path-dependent because of accumulated entitlements and claims, and the strength of the lobbies that defend them.

A third criticism of the existing literature is that, although it takes as its starting point a choice-theoretic framework – the quadratic loss welfare function – the empirical results generated by estimating reduced-form equations throw no light on whether this is the best stylised representation of actual decision processes. They do not preclude the possibility that alternative welfare functions – such as the instinctively more appealing Stone-Geary function – might be a more realistic representation of the budget-maker's maximand.

Finally, it is perfectly arguable that the empirical investigation of the fiscal impact of external assistance – both at the country level and in cross-country perspective – has no essential need of a choice-theoretic foundation if its purpose is simply to describe facts rather than to discriminate between alternative behavioural theories and models.

For these reasons the three papers on Malawi, Uganda and Zambia approach the empirical estimation of the impact of aid on fiscal aggregates using an atheoretic procedure of econometric analysis, without any prior assumptions about the behaviour of budget-makers. The papers look at the respective impacts on the size of the recurrent and development budgets, and on the magnitude of debt and fiscal savings. The econometric technique used is vector autoregression (VAR) which considers the evidence without preconception about the underlying model, not about the endogeneity or otherwise of the variables.

In order to interpret the econometric results the country studies each present an extensive historical and institutional background. This includes discussion of features of the countries' budget systems and of the composition of their budgets. The studies identify the trends, events and turning points reflected in the data, and consider the systemic interpretation to be placed on the results in the light of the countries' political economy, economic evolution and institutional functioning, including the management of their budgets.

2.7 Methodology

The three country studies use a vector autoregression (VAR) or a vector error correction (VEC) model to determine the effects of aid on fiscal aggregates. The rationale for this choice of econometric model is that fiscal aggregates are highly interlinked, and therefore likely to be endogenous. Unlike structural models, which make restrictions about the direction of causality between variables, and can be difficult to estimate, a standard VAR method treats all variables in the model as endogenous. The use of a VAR model avoids the need to speculate about the appropriate specification of the utility function. Unlike in the case of simultaneous equations models, ordinary least squares (OLS) estimates for VARs are consistent. It is also possible to add exogenous variables (such as dummies for external shocks, oil prices, etc.) to each equation.

A VAR model is a system of equations, where each variable is allowed to affect the dependent variable with a number of lags. Such a representation corresponds to the reduced form, which for two variables can be written as:

$$(2.10) \qquad y_t = a_{10} + \sum_{i=1}^{n} \alpha_{1i} y_{t-i} + \sum_{i=1}^{n} \alpha_{2i} z_{t-i} + e_{y_t},$$

$$z_t = a_{20} + \sum_{i=1}^{n} \alpha_{3i} y_{t-i} + \sum_{i=1}^{n} \alpha_{4i} z_{t-i} + e_{z_t},$$

where i refers to the number of lags (i = 1,...,n) and t to the time period. Contemporaneous effects are embedded in model 2.10, but cannot be identified. Because there are such effects, residuals e_{yt} and e_{zt} will be correlated. Identifying the contemporaneous effects would require placing parameter restrictions on model 2.10 - making a so-called 'Cholesky' decomposition. This would entail making assumptions about the direction of the contemporaneous effects and restricting the number of these effects (Enders, 1995). The result would be the structural form of a VAR model that identifies both contemporaneous and lagged effects, and where the residuals would no longer be correlated.

The idea of fiscal response models and the VAR approach is that fiscal variables are jointly determined by the government, and therefore budget outcomes are the result of fiscal behaviour. The benefit of the VAR/VEC approach is that it treats the fiscal variables as determined within the same system, without any prior assumptions about the nature of the inter-relationships. Budgetary decisions are generally made within a budget year, but past levels of fiscal variables can guide future decisions. Aid may induce changes in fiscal behaviour, for instance due to conditionality. Such effects will be captured by a VAR model with lagged impacts. It is also usual that recipient countries lack perfect foresight about donors' disbursements, and that they base their budget estimates on their past experience of promised and actual disbursements via a process of adaptive expectations. As the approach concentrates on government behaviour, the estimation should use information that is known to the government. However, aid disbursed outside the budget can also affect government spending decisions, for instance by lowering expenditure on items funded by non-budgeted aid inflows. In all the three country studies non-budgeted aid flows - the difference between external financing reported in domestic budgetary sources and shown in donor and creditor data sources – have at times been large (see Chapter 3).

If the variables to be included in a VAR are non-stationary, integrated of the same order and cointegrated, they can be represented by a VEC model. A variable is non-stationary when its mean and/or variance are time-dependent and there is no long-run mean to which the variable converges. The assumptions of a classical regression model require that variables are stationary. If non-stationary, variables are rendered stationary by differencing. Since models with differenced variables do not cater for existing long-run relationships, the differenced variables must be modelled in a VEC framework. A VEC model for cointegrated variables takes into account both the short-run relationships between variables and deviations from the long-run equilibrium relationship. The reduced form for two variables y and z can be written as:

$$\Delta y_t = a_{10} + \alpha_y(z_{t-1} - \beta y_{t-1}) + \sum_{i=1}^{n} \alpha_{1i}\Delta y_{t-i} + \sum_{i=1}^{n} \alpha_{2i}\Delta z_{t-i} + e_{y_t}, \quad (2.11)$$

$$\Delta z_t = a_{20} - \alpha_z(z_{t-1} - \beta y_{t-1}) + \sum_{i=1}^{n} \alpha_{3i}\Delta y_{t-i} + \sum_{i=1}^{n} \alpha_{4i}\Delta z_{t-i} + e_{z_t},$$

where $z_{t-1} - \beta y_{t-1}$ is the error correction term, i refers to the number of lags (i = 1,...,n), t to the time period and Δ indicates the change in the variable from one period to the next. The error correction term represents the stationary linear combination of the cointegrated variables. The coefficients of the error correction terms represent the speed of adjustment. The larger the coefficient is, the greater the adjustment of the dependent variable to the deviation from a long-run equilibrium in the previous period.

The coefficients of the VAR/VEC models only reveal the direct, *ceteris paribus* effects. They do not take account of the fact that the lagged explanatory variables in each equation are inter-linked (both with a lag and contemporaneously), and therefore do not reflect the full impact of one variable on another. For this reason, the analysis relies to a great extent on impulse response functions to estimate the total short- and long-run impacts of an increase in aid. Impulse response functions represent the time profile of the effect of a shock to one variable on the contemporaneous and future values of all endogenous variables. They capture both the direct and indirect or feedback effects caused by endogeneity over time. The estimation of these functions requires the infinite moving average representation of equations 2.10 and 2.11.

The three country studies use generalised impulse response functions, and in each case the shock to aid is equal to one standard error. The response functions estimated are those of Pesaran and Shin (1998), where the initial shock occurs to a residual in one equation (in our models the aid equation). For a VAR model (equation 2.10), the generalised impulse response function ψ, describing the effect of a one standard error shock to equation j on equations/variables x at time $t+n$, takes the form:

$$\psi_j(n) = \sigma_{jj}^{-\frac{1}{2}} A_n \sum e_j, \quad \mathrm{n} = 0, 1, 2, \ldots, \quad (2.12)$$

where j refers to the equation, $\sum$ is the covariance matrix for the residuals, σ_{jj} the variance of residual j, A_n the coefficient matrix in the moving average representation of equation 2.10, where A_0 is an identity matrix and e_j an $\mathrm{m} \times 1$ vector, where the jth element equals 1 and the rest are equal to zero. In a VEC model (equation 2.11), the generalised impulse response depends additionally on the cointegrating vector (see Pesaran and Shin (1998) for details). In a VEC model, a shock or impulse to aid will have a persistent impact on the levels of other variables, as the shock itself is permanent in nature. However, the impulse responses are eventually expected to converge to a level that is consistent with the estimated long-run, cointegrating relationship. In our analysis this condition implies that the difference between expenditure and revenue as a result of an aid shock cannot increase permanently.

One issue that needs to be taken into account with generalised impulse response functions is that the residuals of equations 2.10 and 2.11 are usually correlated. This means that, although the original shock is given to only one variable, correlation (or more precisely covariance) between residuals induces a contemporaneous effect or shock to the other variables as well. If these correlation coefficients are high, it can be somewhat difficult to isolate the impact of the initial shock to one variable.

Unlike generalised impulses, orthogonalised impulse response functions could be used to restrict the number of these contemporaneous effects or to examine a pure shock to one variable. In the latter case, all effects would be lagged. These impulses depend on which variables are allowed to

affect each other contemporaneously, and in which order. This is not a straightforward decision and the results can vary considerably depending on these assumptions. For this reason, generalised impulse responses were chosen. These do not require assumptions to be made about contemporaneous causality, and are invariant to the ordering of variables in the impulse response analysis.

Depending on the size of the correlations between residuals, a shock to aid is therefore allowed to have a contemporaneous impact on all the fiscal variables. This is a useful feature in the analysis of budgets in countries with fairly rudimentary planning mechanisms, where expenditure plans have generally been made for a short time period, and may have been altered in the middle of the budget year. Secondly, if one is willing to accept that aid is the only variable that has a contemporaneous effect on all other fiscal variables, but is itself not affected contemporaneously, the orthogonalised and generalised impulse response functions will coincide. Although the empirical analysis will reveal that current values of aid (especially foreign loans) can depend on past values of other fiscal aggregates, it is not implausible to assume that, within the same period, aid is more likely to be predetermined than any of the other variables.[3]

One problem with impulse response analysis for VECs is the absence of confidence intervals. There does not yet appear to be a consensus method for estimating these for VECs (see, for example, Jang, 2001), and the software used (Eviews 5) does not generate them, which means that the estimated effects may not always be statistically significant. Standard errors of the impulse response functions may be large with small samples of data, and may increase with the number of periods for which the responses are estimated. Therefore, in the VEC model, the impulse responses are only to be taken as indicative, and in reality the actual impact lies within a range of the estimated. It may therefore be advisable to pay more attention to large rather than small effects. The facts that standard errors may increase with time, and that impulses are estimates, may lead to expenditure and finance impulses that do not correspond precisely with the estimated long-run relationship. If the variable to be shocked is affected significantly by other fiscal variables in the model, this may result in rather volatile short-run impulse responses. This was found to be the case for a shock to foreign loans in both Uganda (Fagernäs and Roberts, 2004a) and Malawi (Fagernäs and Schurich, 2004), but in the long run the response did stabilise.

In each country study, the econometric analysis looks at the effects of different forms of external financing – grants and net foreign loans as recorded in the budget, and ODA, based on donors' records, reported by the DAC. In addition to aid variables, the models include domestic borrowing, domestic revenue and expenditure (either total or divided into recurrent and development expenditure). Excluding data discrepancies and unreported items, the data used form an identity (expenditure equals financing). In general econometric estimation, including all the components of an identity would result in a meaningless regression, where coefficients on the explanatory variables (provided that the dependent variable is omitted) usually equal unity. Due to lagged effects, the technicalities of a VAR are somewhat more complex, but estimating an identity would nevertheless not be recommended. In addition, in a VEC model, an error correction term that includes all budgetary variables would be meaningless, as in reality there is no imbalance to correct for. Therefore, in each estimated model, one budgetary variable is omitted. This was chosen to be one form of external financing, as this allows us to examine the impact of the other form of external financing on all fiscal aggregates of interest. The issue is not of concern in the models that use ODA instead of external financing recorded in the budget as, in all three countries, ODA clearly exceeds the amount of budgeted aid.

The fact that one form of external financing is excluded in each model may lead to some omitted variable bias. If there is a strong correlation between grants and foreign loans, which is usually the case for recent years when most foreign loans were provided on a concessional basis, the impact of the omitted form of external financing can be reflected partly in that of the other. Omitted variable

[3] This may not have been the case for commercial external borrowing in the 1970s, as this may have been affected by developments within a budget year, but since then it can be assumed to hold more or less for all forms of external finance.

bias can also lead to residual correlation. The estimated models do not cater for changes in economic fundamentals, such as GDP, which can affect both aid and other fiscal aggregates.

In all the three countries studied there have been periods, either where movements in the variables do not coincide with a general pattern (outliers, election years) or where the relationship between variables changes. The first case has been resolved with the use of dummy variables, although it is not straightforward how such a variable should enter the VEC model. The latter issue is more difficult to resolve empirically, as the best remedy, which is to estimate two separate models for the different time periods, was not possible due to the shortness of the time series used. Instead of trying to accommodate for each period where a relationship may change, the estimated models portray the average effects of aid over a longer, thirty-year time period.

The econometric analysis for Uganda and Malawi is based on a VEC model, since the fiscal aggregates in these cases were found to be non-stationary and cointegrated. As one part of the budgetary identity is omitted in the models, the error correction term reflects an imbalance in the budget. In the case of Zambia, all variables were found to be stationary and therefore the analysis relies on a standard VAR model in levels (without any error correction mechanisms). The estimated models for Zambia also exclude one form of external financing, but the VAR stability condition holds in each estimated model, which implies that the system converges. Each variable will be jointly covariance stationary with a finite and time-invariant mean, and a stationary long-run relationship automatically exists between these variables (Enders, 1995). On the other hand, in a VEC model cointegration between non-stationary variables ensures that there is a stationary long-run relationship to which the variables converge, and therefore the difference between expenditure and finance cannot increase permanently. The methodology used in the Zambia study is therefore not different, but in this case the impulse response analysis can only be used to examine the effects of a one-period increase in aid, whereas in the case of the VEC model used for Uganda and Malawi, only a permanent increase in the level of aid is feasible (as the model is run with differenced variables).

2.8 Conclusion: implications for the country case studies

This chapter has ranged widely if superficially over areas of the literature covering the linked topics of aid and growth, aid fungibility, public expenditure welfare maximisation, the fiscal impact of aid and the methodologies used in its estimation. It has provided background to the country case studies to be summarised in Chapter 4 and justification for the empirical methodology used therein. It has revealed variances and contradictions in some of the evidence uncovered in past studies, such as whether aid has contributed mainly to investment or consumption, and whether investment or consumption expenditures are more strongly associated with growth. The theoretical and methodical literature reviewed in this chapter has several implications for the objectives and design of the country case studies.

First, fiscal response studies deal in broad fiscal categories – government consumption, investment revenue and borrowing – the impact of which on economic performance is more readily assessable at the macroeconomic than the microeconomic level. At the country level, the use of time series regression analysis precludes the analysis of individual, short-period, macroeconomic management episodes, but valuable light can be shed on longer-period behavioural characteristics.

Second, in terms of understanding the processes other than macroeconomic whereby aid facilitates growth at the country level, it may be of limited value to know that expenditure in a particular economic category has increased in response, unless there is complementary analysis of expenditure increases at the margin in terms of their sector, function and programme objective. It matters less to know what the responses have been to particular aid injections – and whether these have been consistent with donors' intentions and expectations – than how budgetary choices have been made covering all available resources.

Third, fiscal impact studies have the potential for illuminating aspects of recipient countries' budgetary processes, notably whether they practise forms of fiscal dichotomy whereby different fiscal receipts are allocated to different categories of expenditure, or whether their fiscal planning is fully consolidated. Relatedly, the studies can throw indirect light on whether Stone-Geary-type processes are at work wherein public expenditures are divided (whether formally or implicitly) into the mandatory (or entitlement) and the discretionary, and on whether aid-supported 'development' budgets take on the character of discretionary expenditure programmes. Systematic differences in the factors determining the magnitude of recurrent and development outlays would be *prima facie* evidence of the presence of such features.

Fourth, the econometric estimation of fiscal impacts from time series data is fraught with methodological problems, notably those associated with estimating relationships between endogenous variables. It calls for the application of advanced procedures whose reliability is not always assured. In the practical application of the models concerned, there are too few degrees of freedom to control for the impact of variables other than fiscal aggregates on fiscal outcomes, potentially leading to results containing spurious causal relationships. The problems of estimation may be worsened if, as occurs quite commonly, countries experience 'regime change' in their fiscal management which alters behavioural relationships. Data series may be too short to characterise the relationships either side of such turning points.

The country case studies are mindful of these issues, and seek to provide some non-formal interpretation of country-level evidence to complement that which is derivable using formal methods. The studies also encountered a number of data issues, notably in relation to the quantification of aid. These are the subject of Chapter 3.

Chapter 3: Composition of Aid and External Financing

This chapter discusses the data used in the country-level analyses, the results of which are summarised in the next chapter. The questions at issue are the sources of data (and their reliability), the picture of resource flows to the three countries revealed in the data, and the relevance of data from alternative sources to the formal study of fiscal impacts. A central concern is whether data limitations and inconsistencies limit the value of econometric work on the fiscal impact of aid and the strength of conclusions based thereon.

3.1 Sources of data

Time series data on fiscal aggregates and sub-aggregates, other than the external financing used, are taken, directly or indirectly, from the expenditure accounts of the three countries. In the interest of definitional consistency the IMF's *Government Finance Statistics* is used where possible. In cases where this source provides inadequate information, data have been sourced from national statistical publications. As coverage varies somewhat from one country to another, especially with regard to the functional and economic breakdown of public expenditure, it is not possible to draw strictly equivalent inferences for each country.

As regards external financing and aid, there are three main problems of interpretation:

a. international sources of data are not always consistent with each other;

b. international data provide evidence which is inconsistent with the picture of external financing presented in the countries' fiscal accounts: recorded ODA disbursements exceed recipient countries' recorded receipts of external budget financing – in the cases of Malawi and Zambia in the 1990s by exceptionally wide margins of 10-20% of GDP (Figs. 3.1, 3.2 and 3.3);

c. in all three countries, external debt has been repeatedly rescheduled, sometimes on concessional terms, and some has been written off. Because of accounting conventions, these operations have different effects on debtors' and creditors' records of net financing flows (Section 3.2).

There are two principal international sources, the Debtor Reporting System and the Creditor Reporting System. Information gathered by the former and processed by the World Bank is published in *Global Development Finance*. Information drawn from the latter is published by the OECD in several series covering concessional and non-concessional lending and debt, both official and private, and official and private grants. The geographical distribution of ODA flows (official grants and loans with a grant element of over 25%) is analysed by type and purpose (including debt relief) in Table 2a of the DAC's *International Development Statistics*. Global Development Finance reports data on grants borrowed from OECD. There is acknowledged inconsistency between the two data sources in respect of the impact on financial flows of debt and debt-service reduction.

There are various explanations for the discrepancy between donor/creditor and recipient/debtor records of external flows:

i. the failure of (mainly bilateral, but also UN) donors to report to recipients the procurement transactions of goods and services, the costs of which they pay directly from grant aid. This has been common in the case of tied project aid, and has also occurred with programme aid provided in kind, the financial counterpart of which in fiscal accounts may be misclassified as non-tax revenue. It has been less common in the case of loans from

multilateral development banks whose disbursements have to be documented in accordance with loan covenants;

ii. aid payments to off-budget entities such as parastatals and NGOs, including the use of aid for emergency relief, and

iii. aid for debt and debt-service reduction (see below), and technical deficiencies in recipients' expenditure accounts (Section 3.2).

Some of these off-budget uses of aid may have had indirect consequences for fiscal aggregates, for example by substituting for public expenditure. However, even taken together it seems unlikely that these factors can explain the full discrepancy. No satisfactory reconciliation has been possible, though in the case of Zambia it is found that debt and debt-service reduction (DDSR), technical cooperation (TC) and food aid projects (cumulatively) account for a significant part of the difference (Fig. 3.3).

Fig. 3.1 Malawi: External financing of public expenditure and ODA disbursements

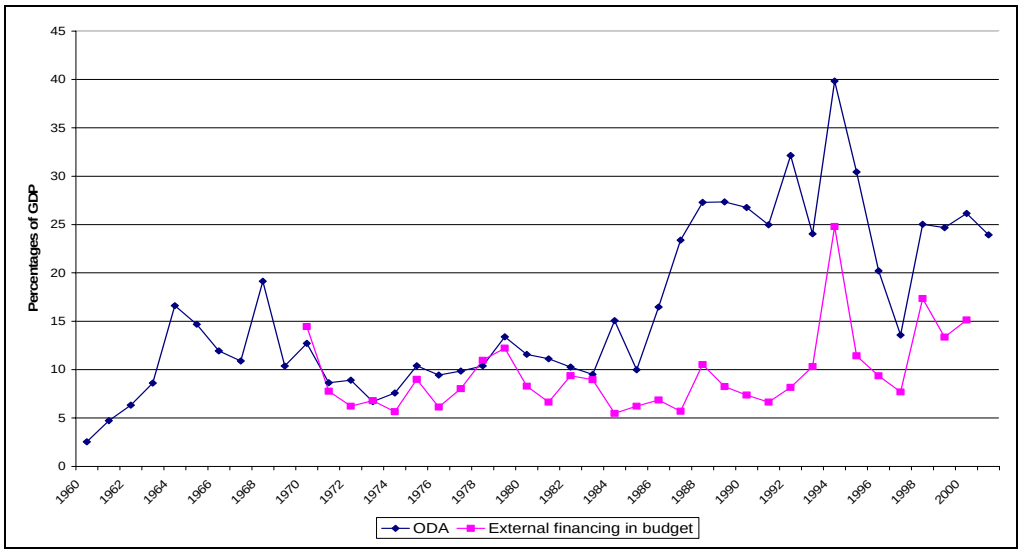


Fig. 3.2 Uganda: External financing of public expenditure and ODA disbursements

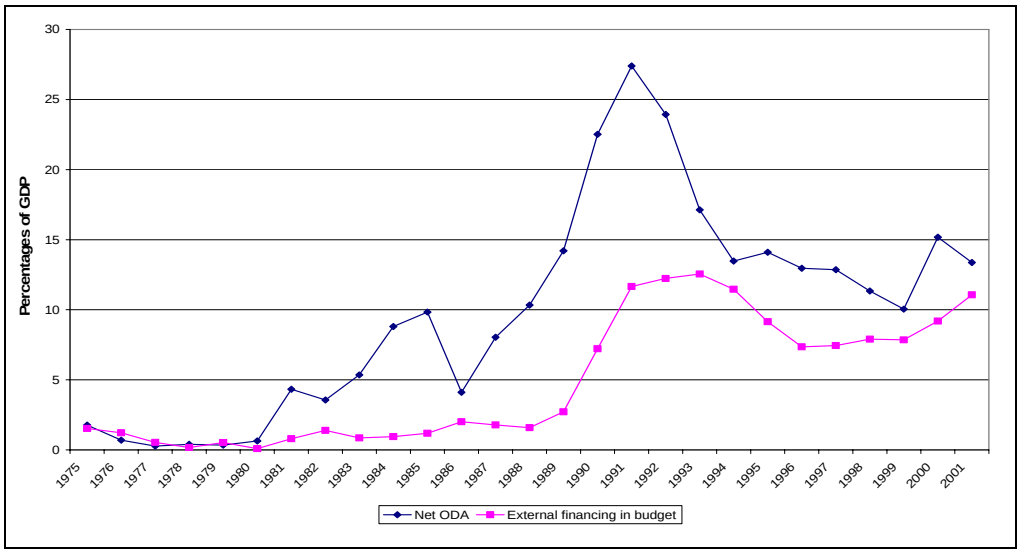
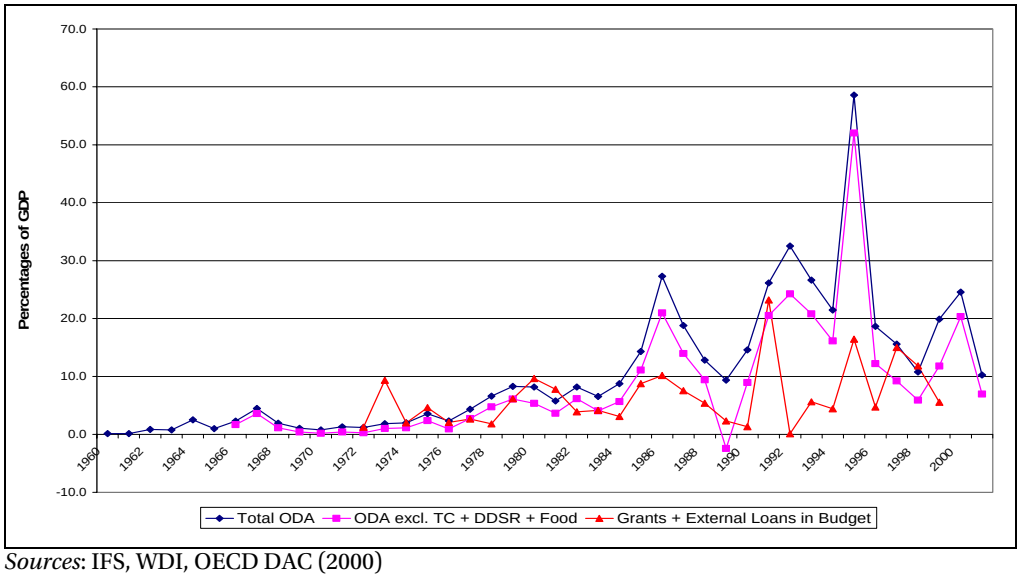


Fig. 3.3 Zambia: External financing of public expenditure and ODA disbursements (total, and excluding TC, DSSR and Food Aid)



Sources: IFS, WDI, OECD DAC (2000)

3.2 Treatment of debt and debt-service reduction (DDSR)

The previous section noted the widening gap in the early 1990s in all three countries between their own fiscal records of the external financing used and the donors' records of net ODA disbursed. It is unlikely that this excess was caused by a deterioration in the budget authorities' ability to track and record donors' disbursements. This coincided with large increases in aid disbursements and with a rise in the share of disbursements for debt and debt-service reduction.

Debt and debt-service reduction operations influence fiscal accounts in various ways which, until the advent of the Highly Indebted Poor Country (HIPC) initiative, were not explicitly quantified.

i. Agreement with creditors, for example in the Paris Club or with the London Club, to restructure debt reduces scheduled amortisation payments in the immediately following years, *ceteris paribus* raising borrowers' net external borrowing for a given value of lenders' gross disbursements.

ii. If rescheduling occurs on concessional terms, the lower interest payments on outstanding debt reduce present and future recurrent budget expenditure on debt service, freeing up resources in the recurrent budget for other purposes.

iii. Debt buy-backs and debt forgiveness permanently reduce the schedule of future amortisation and interest payments, bringing relief to the recurrent budget, as well as increasing net external loan receipts.

However, agreements on debt reorganisation with the Paris Club are generally preceded by default on current maturities - which is reflected in the fiscal accounts in the form of lower recurrent budget payments for debt service and higher net external loan receipts. Payments abroad for debt service and amortisation are quite commonly higher after agreement than in the years immediately preceding agreement - as in Zambia in the early 1990s.

Stock-of-debt reduction actions, for example the use of aid for buying back or writing off outstanding debt, and the conversion of non-ODA debts to concessional terms as recorded in ODA statistics, thus have no full contemporaneous counterpart in beneficiary-country fiscal accounts. These only (unattributably) reflect the consequential limitation in interest and amortisation payments in the years in which these payments were originally due. Conversely, ODA

disbursement figures do not include the contemporaneous reduction in interest and amortisation payments made possible by creditors' agreements to reschedule debt on non-concessional terms.

Official Development Assistance (ODA) as defined by the Development Assistance Committee of the
OECD includes under the heading of operations relating to debt:

- grants for the forgiveness or cancellation of officially guaranteed private credits, which may be reported either as an *ab initio* lump sum of outstanding principal, interest due and in arrears and future interest payments, or as a flow of disbursements in the years in which interest and amortisation payments fall due;
- the present value of debt-service reduction achieved by rescheduling arrears and current maturities on concessional terms, which is reportable in the year in which such rescheduling agreements are reached (OECD DAC, 2000).

The sum of these two elements[4] constituted a significant 13.5% of ODA flows to Zambia between 1988 and 2001. In the early 1990s DDSR and technical cooperation flows together amounted to approximately 20% of GDP (Fig. 3.3). However, DDSR is a rather insignificant share of net ODA to Malawi and Uganda over the same period – 1.8% and 3.5% respectively.

The implications of these accounting conventions for quantitative fiscal impact studies are ambiguous. If it were possible to assume full Ricardian Equivalence, it would be reasonable to relate the totality of ODA for debt and debt-service reduction in one year to fiscal resource allocation decisions in that year, because governments would be able to borrow locally or abroad on the strength of reduced future external debt-service payments. However, most developing country governments, including those of Malawi, Uganda and Zambia, have only limited scope for converting the full present value of debt-service relief and debt forgiveness instantaneously into higher levels of expenditure. Even the contemporaneous benefit to the budget of debt and debt-service reduction is hard to estimate because it assumes counterfactual knowledge of payments that would have been made in the absence of agreement.

In the empirical estimation of the impact of aid on fiscal aggregates in Zambia, where aid for debt and debt-service reduction has been significant, two variants of ODA were tested – one including operations relating to debt, and the other excluding these - but there was no significant difference in the results.

3.3 Growing concessionality of resource flows

The character of flows of net external financing into the three countries has altered radically since 1970, the beginning of the first full decade of independent existence for each of them. The shift over time from substantially (or predominantly) non-concessional sources to concessional sources is illustrated in Figs. 3.4, 3.5 and 3.6.[5]

[4] Net of restructured ODA debt servicing, to avoid double counting.
[5] Data used are deflated by recipient countries' current GDP at current exchange rates, which distorts the picture somewhat in periods of local currency overvaluation, such as in Uganda in the 1970s. Note that IMF financing was non-concessional until the advent of the Structural Adjustment and Enhanced Structural Adjustment Facilities in the late 1980s (which were succeeded in 2000 by the Poverty Reduction and Growth Facility) for which all three countries have been eligible and on which a nil rate of interest is charged.

Fig. 3.4 Malawi: Net external financing by source and terms (% of GDP)

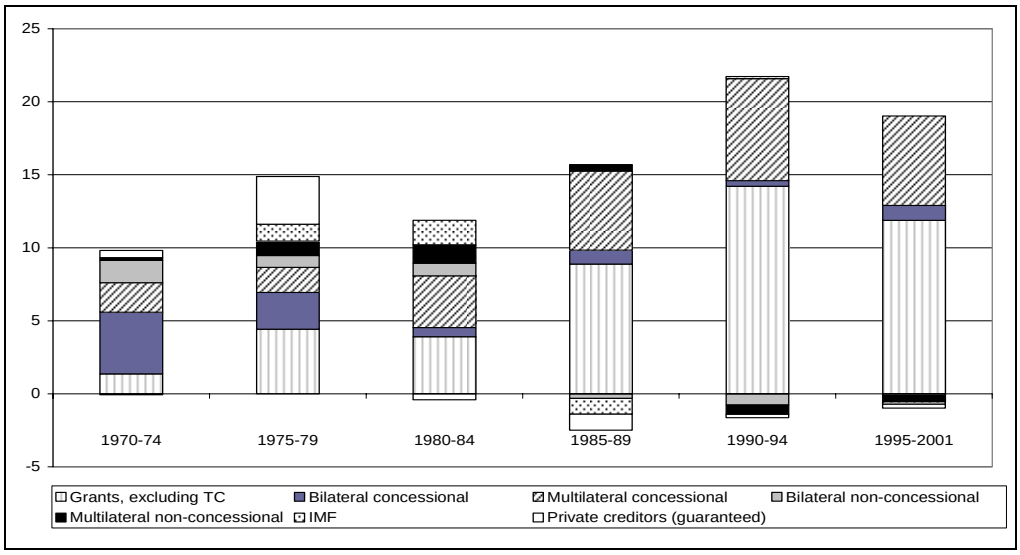


Fig. 3.5 Uganda: Net external financing by source and terms (% of GDP)

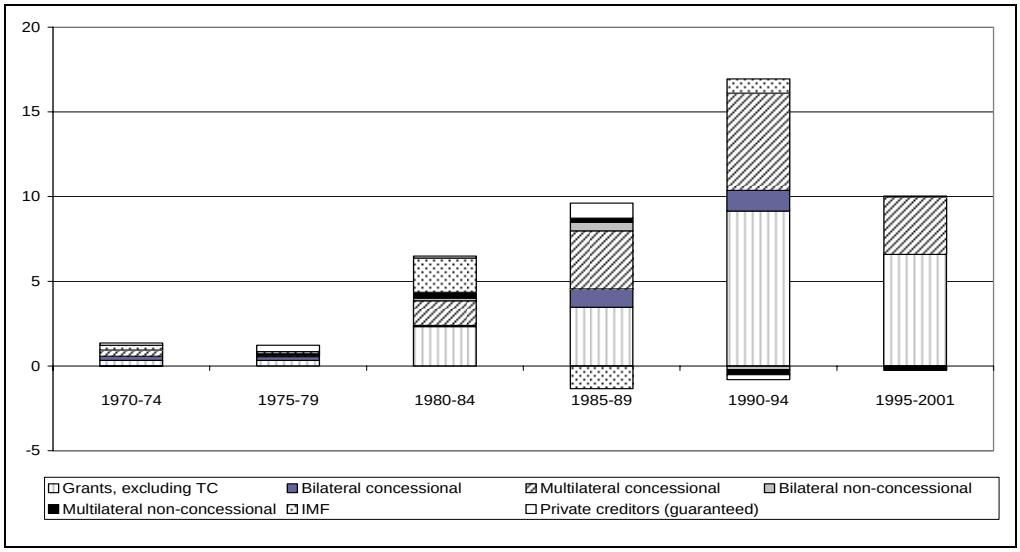
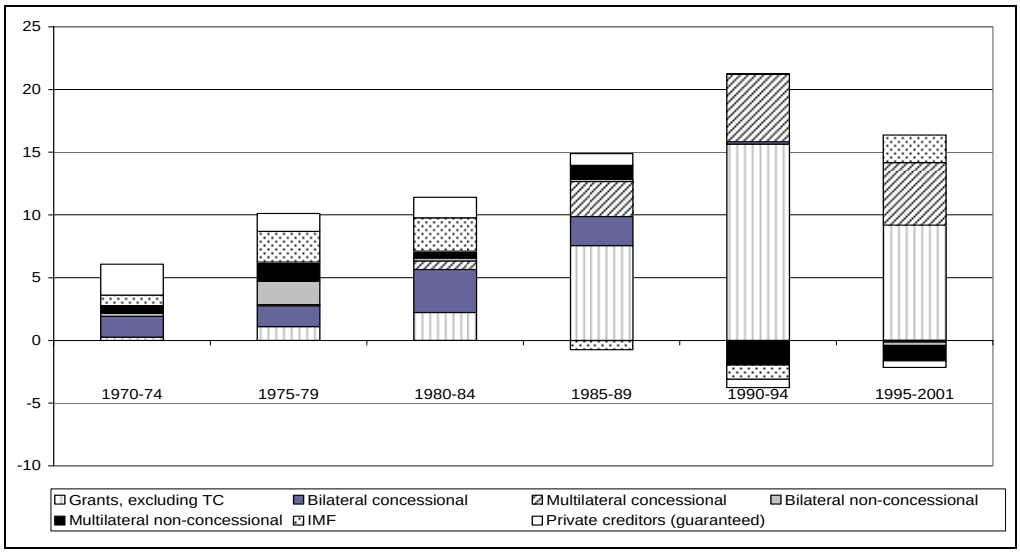


Fig. 3.6 Zambia: Net external financing by source and terms (% of GDP)



Source: Global Development Finance

In the 1970s all three countries received significant non-concessional loans and credits amounting, towards the end of the decade, to between 5% and 10% of GDP in net terms. Zambia borrowed heavily in the early 1970s from capital markets, and resumed heavy net borrowing from both private and non-concessional official sources from 1975 onwards. Malawi and Uganda also expanded their initially modest net borrowing at this time. In current US$ terms Uganda and Zambia received more non-concessional net financing than net aid in the course of the 1970s. These resources were absorbed only in part through the countries' budgets. Parastatal organisations were also permitted, indeed encouraged, to borrow on their own behalf under public guarantee.

The situation altered radically by the mid-1980s, after the second 'oil crisis', when all three countries experienced external debt-service problems, leading to default, loss of creditworthiness and the rescheduling of maturities. Uganda and Malawi lost any significant access to private and non-concessional official financing (apart from the use of IMF resources). Zambia continued for some time to receive some private and IBRD financing, but on a much reduced scale. Beyond the mid-1980s, the overwhelming majority of net flows received in all three countries was in concessional form – mostly bilateral grants and multilateral concessional credits.

This pattern of predominantly concessional financing persisted throughout the 1990s, but with the additional feature that the reported flows of bilateral ODA now began to include an element corresponding to bilateral debt forgiveness, the financing of debt buy-back operations, and the concessionality in the 'Toronto' and 'Naples' terms of the rescheduling agreed in the Paris Club of officially guaranteed commercial debt. All three countries benefited from these terms which provided for the cancellation of respectively 50% and 67% of the present value of eligible outstanding maturities, and for rescheduling of the remainder with long grace periods.

It is of interest and relevance to the analysis of fiscal impact to consider whether the various sources of external finance provided have been complements or substitutes for each other. This can be determined from the strength and sign of the correlation coefficients between types of net flow over the period since 1970.[6] Using data on flows reported in *Global Development Finance*, these reveal in all three countries that:

- grants and net concessional multilateral flows are strongly and positively correlated through time, suggesting complementarity,

[6] The calculated coefficients are shown in the Annex.

- grants and net multilateral concessional flows are negatively correlated with non-concessional flows, suggesting substitution, particularly between non-concessional and concessional financing from multilateral sources, and
- net concessional bilateral lending has been poorly correlated or negatively correlated with other concessional flows (grants and multilateral), suggesting either that they have been intended for other purposes, or that bilateral donors have, through time, replaced their concessional lending with grants, *inter alia,* out of recognition of the debt-service problems experienced by all three countries.

3.4 Conclusion: implications for the empirical analysis

These considerations have practical implications for the conduct of the empirical analysis in the three country papers.

There is no ideal source of information on the 'aid' variable whose impact the empirical analysis seeks to measure. Varying (and sometimes large) shares of ODA disbursements are used for purposes which are not properly captured in contemporary fiscal accounts, and the external financing recorded in budgets has, particularly in the 1970s, comprised a substantial share of non-aid flows.

Foreign grants are by hypothesis largely exogenous to the contemporaneous budgetary process because they depend on the discretion of their donors as regards magnitude, purpose and timing, and in good part on decisions taken prior to recipients' current year fiscal exercise. The same applies to gross multilateral flows, particularly the multilateral concessional flows which, as seen above, have been highly correlated with the disbursements of grants. The volume of official grants and loans may, however, be affected by previous years' fiscal performance if donors' intentions are to remedy shortfalls or to finance expenditure in priority areas.

Other, non-official, (gross) external loan financing of budgets is likely to be endogenous to the current year's fiscal process because it is driven by autonomous domestic expenditure decisions. In the early years, when they were creditworthy, the three countries were able in varying degrees to finance their deficits by borrowing abroad. More recently they have resorted to default on external debt-service obligations. Loan financing net of actual amortisation on past loans – the variable used regression analyses in the country papers – is either in part pre-determined (when due repayments are made) or in part endogenous (when financial circumstances induce default).

The solution adopted in the empirical analysis, given the difficulties encountered in reconciling the data sources consulted, has been to examine separately the impact of external financing as recorded in budgets and of ODA disbursements as recorded by donors. On this basis, the econometric analysis seeks answers to the following questions:

- what has the impact of net external financing been on the development and recurrent budgets?
- has expenditure risen more or less than the financing provided?
- has aid substituted for domestic revenues, or been associated with additional revenue mobilisation? and therefore
- has it been associated with either increased or reduced domestic borrowing?

Chapter 4: Synthesis of Country Studies

4.1 Country economic background - coverage

The three countries on which this synthesis is based - Malawi, Uganda and Zambia - are all low-income and least developed countries. They all became independent states in the early 1960s, since when they have all experienced episodes of development success and development failure. They are all small or relatively small countries, with high trade/GDP ratios, and dependent for their export earnings on a very narrow range of commodities. They have thus always been vulnerable to the terms-of-trade shocks that all of them have suffered. These shocks affect not only producers' incomes but also public revenues drawn largely from taxes on trade and personal and corporate incomes.

Other factors affecting flows of fiscal resources have been the extent of political stability and the quality of relationships with external donors. All three countries have, by any standards, experienced long periods of political stability – in the sense of continuity of regime and institutions. However, one of them, Uganda, experienced over a decade of instability, misrule, economic collapse and civil war. In terms of relations with the international financial institutions, all three have received substantial non-project structural adjustment support financing since the 1980s. Relationships with the donors, however, have not been smooth and uninterrupted. The disbursement of this assistance has accordingly been volatile, especially for Zambia and Malawi.

In order to interpret and understand evidence on the fiscal impact of aid some background on the economies, political economy and budgetary processes of recipient countries is essential. The case studies, therefore, consider the following elements of the three countries' political, economic and institutional background:

- economic structure and growth record,
- political and macroeconomic stability,
- development strategies and policies,
- the quality of budget management processes,
- the comprehensiveness of state budgets,
- domestic resource mobilisation and revenue sources,
- expenditure allocation by function and economic classification,
- technical and allocative efficiency,
- fiscal discipline,
- fiscal deficits and their financing, and domestic debt,
- aid and other external financing receipts by type and volume, and
- external debt, and debt and debt-service reduction operations.

From these elements are built outline pictures of whether fiscal management and public expenditure have been subject to medium- or longer-term macroeconomic and development strategy, or whether they have been patrimonial, haphazard, or subject to unpredictable and unanticipated shocks and influences. From this background it can also be seen how far fiscal resources have been pre-empted by mandatory debt-service or payroll commitments and whether budgets have been heavily resource constrained, and estimates can be derived of the extent of discretionary expenditure.

On the basis of these country assessments the country papers formulate *prima facie* conclusions or hypotheses which are then subjected to econometric testing using the VAR procedure described in Section 2.7 above.

Ceteris paribus, there is a presumption that the fiscal effects of aid inflows will be best defined and most significant when there is:

- strong fiscal discipline, with little scope for over-runs and supplementary budgets,
- budget preparation and execution based on established rules and procedures,
- a unified and comprehensive national budget,
- political and macroeconomic stability, and
- a predictable level of aid inflow.

None of the three countries satisfies these criteria, though in differing degrees. Malawi and Zambia have budget processes characterised by a relatively high degree of informality, with frequent recourse to supplementary budgets. Fiscal discipline has been reinforced in aggregate since the early 1990s through cash budgeting, but this has weakened the discipline of the annual budget as an instrument for the inter-sectoral allocation of resources and the implementation of sectoral strategy. Neither country has effective medium-term expenditure planning. Some classes of public expenditure go unrecorded in budget and expenditure accounts. Macroeconomic instability and failure to adhere to IMF programmes, in part born of poor fiscal control, have led to volatility in aid receipts as donors successively resumed and suspended their aid.

Uganda's budget processes were much weakened and corrupted during the years of misrule and civil conflict prior to 1986. Some, notably donor-financed, public expenditure has not been recorded in budgets. In common with Malawi and Zambia, Uganda also adopted the discipline of cash budgets in the early 1990s. Subsequently, budget processes have greatly improved with the implementation of effective medium-term expenditure planning, results-oriented budgeting, pro-poor expenditure prioritisation, and the consolidation into budgets of formerly extra-budgetary expenditures. Donor confidence in Uganda increased in the course of the 1990s, and ODA disbursements have been relatively stable.

There are some common institutional features in the aid and public expenditure experiences of the three countries which are relevant to the interpretation of the results of the country studies:

- *Debt and debt-service reduction.* As mentioned in Chapter 3, all three countries have received aid for DDSR the *a priori* effects of which on fiscal outcomes are indeterminate. To the extent that due interest and amortisation would otherwise have been paid, DDSR reduces recurrent expenditure (by reducing interest payments) and increases net borrowing (by reducing amortisation). If the debtor country would have defaulted on its payment obligations – as all three countries have done at one time or another – DDSR has ambiguous contemporaneous effect on fiscal aggregates. The full fiscal impact of aid for debt reduction comes in later years, when debt-service payments are lowered and/or when reduced amortisation increases net borrowing. In view of this indeterminacy, the authors of the country studies make no systematic adjustment to their data to allow for the effect of DDSR.

- *Fiscal dichotomy.* All three countries have practised dual budgeting - planning, executing and financing their development and recurrent budgets separately. All three have devoted most of their aid receipts to their development budgets, *ipso facto* reducing their scope for exercising fungibility. These institutionalised practices survived the amalgamation of their finance and development planning ministries. This is apparent from the econometric analyses summarised in Section 3.2. The distinction between recurrent and development budgets has, however, been eroded over the years as more ODA has been provided for institution building or support for sector budgets, and recipient countries have earmarked aid-sourced 'development' funds on an *ad hoc* basis for purposes other than investment. However, only in Uganda have there been (recent) endeavours to integrate the planning of the use of resources from all origins around programmes of expenditure defined in terms of outputs.

- *Cash budgeting.* The three countries have also, under the IMF's guidance, applied cash budgeting as a foil to their previous fiscal indiscipline. Their monthly Treasury releases to spending ministries have been limited to the amount of cash inflows from domestic revenues, aid and permissible net borrowing. Their experiences in using this blunt instrument have, however, been dissimilar. Cash budgeting has the potential for causing countries to lose strategic direction in public expenditure planning, if monthly releases are allocated in an *ad hoc* manner, without regard to policy priorities and annual (or pluri-annual) public expenditure estimates. This has tended to happen in Malawi and Zambia. In Uganda, on the other hand, from the mid-1990s, pro-poor expenditures have been ring-fenced in the Poverty Action Fund and given priority treatment. As fiscal control has grown stronger, the rigours of cash budgeting have been relaxed and the intervals between releases to spending ministries have lengthened.

- *Medium-term expenditure frameworks.* All three countries have followed the commonplace practice in the mid- to late 1990s of constructing medium-term public expenditure frameworks. However, only in Uganda has this device been effective in imparting strategic focus to resource planning and aid management. The medium-term budget is now central to the government's public accountability for achieving development results. In Zambia, by contrast, the medium-term framework has remained a background document internal to the Finance Ministry and with little impact on the day-to-day management of public expenditure.

4.2 Country case studies in summary

Malawi

The country case-study paper on Malawi shows how the economy expanded fast in the 1970s (at 7% p.a.), but thereafter entered a period of much slower, and more volatile, growth, of less than 3% p.a. on average. The relative prosperity of the 1970s was founded on an expanding export-oriented, estate-based, agricultural sector. In the 1980s Malawi experienced deteriorating terms of trade, with falling tobacco prices and the civil war in Mozambique, which closed the shortest transit route to the sea through Beira, diverting external trade along much longer and more expensive transit routes.

In the 1970s Malawi received not only aid, but also significant commercial credit. In 1980 it defaulted on its bilateral debt service, and in 1982 the Paris Club of official bilateral creditors agreed the first of several debt-service reschedulings. This was preceded by agreement on macroeconomic stabilisation with the IMF and a first structural adjustment credit from the International Development Association (IDA). Economic reforms were fairly successful in overcoming problems caused by earlier financial improvidence and unwise investment decisions by the parastatals (and President Banda's holding company Press), and in improving production incentives for peasant agriculture, but they failed to re-establish the bases for faster growth and to overcome chronic weaknesses in the budget process and in fiscal control. Thus, the 1980s and 1990s were characterised by macroeconomic instability, which was compounded in the 1990s by the occurrence of droughts, spiralling public expenditure associated with the general election of 1994, a lower revenue/GDP ratio, and the re-emergence of large fiscal deficits later in the decade. Senior politicians indulged in rent-seeking and informality in their management of the public finances, both before and after the change of government in 1994, unrestrained by effective financial controls.

The main budget management and fiscal weaknesses mentioned in the paper include inaccurate revenue forecasting, poor coordination between the recurrent and development budgets, the episodic need to bail out loss-making parastatals and weak commitment controls, giving rise to frequent recourse to supplementary budgets. Overall fiscal control was tightened by the introduction of cash budgeting in 1996, but this was bought at the expense of some loss of strategic

focus in expenditure management and of loss of service quality caused by the erratic and unpredictable flow of releases. Malawi's medium-term public expenditure framework has proved of little benefit. The incoherence between the development and recurrent budgets should have been reduced by the amalgamation of the National Economic Council and the Ministry of Finance in 1998,[7] but in practice the old dichotomy has persisted, with the attendant danger that development projects create unfunded future recurrent expenditure obligations. The practice of earmarking the bulk of external assistance to activities within the purview of the development budget persists. A growing share of these, however, represents government consumption, not capital formation, expenditures.

Non-concessional external financing virtually ceased after Malawi's debt default of 1980. Concessional assistance (ODA) was on a relatively modest scale (10% of GDP) prior to the mid-1980s. Thereafter it rose substantially to an average of 30% of GDP, but at the same time became volatile. An increased share was provided in non-project form, and this was subject to suspension at times when Malawi had no macroeconomic policy framework agreed with the international financial institutions. As total aid volume rose, there emerged a large gap between recorded aid disbursements and external finance receipts recorded in the budget. This seems to have been principally due to the failure to record some commodity and project disbursements in the budget (for example those not notified by donors), though there have also at times been significant disbursements of aid for technical cooperation, emergency relief and debt and debt-service reduction which are not normally recorded as budget receipts. Malawi reached its HIPC 'decision point' in 2000, and in 2001 the Paris Club accordingly gave it interim debt-service relief on concessional Naples terms.

The econometric part of the Malawi paper tests the following propositions, based on this historical analysis:

a. that aid has primarily been a resource for, and driven, discretionary expenditure managed through the development budget,
b. that aid has not substituted for domestic tax revenues, and
c. that aid has not triggered expenditure plans in excess of actual resource receipts, and thus has not led to increased domestic borrowing.

The analysis confirms the premonition, based on institutional analysis of the budget process, that aid, in the form of both grants and net loans, has had the long-run effect of increasing development budget expenditure. Hypothesis (a) above is thus sustained. Moreover, the analysis shows that the long-term effect of grants and ODA inflows has been to increase the size of the development budget by an amount in excess of the volume of ODA received.

However, aggregate net aid receipts have also had the long-term effect of reducing recurrent budget expenditure and the domestic financing of the budget. This has limited any excess in incremental budget outlays over aid increments. Hypothesis (c) is therefore largely confirmed, with little evidence of 'aid illusion' (McGillivray and Morrissey, 2001), namely, the planning of expenditure in anticipation of aid receipts which do not all materialise. One explanation for this reduction in recurrent budget expenditure might be that development budgets include (an increasing share of) non-capital, recurrent expenditure which covers some charges which would otherwise be met by the recurrent budget. The effect is clearest and least ambiguous in the case of grants. The long-run impact of recorded net external loans, taken on their own, has been to expand the development budget without causing the recurrent budget and domestic financing to fall.

The analysis also shows that domestic revenues have behaved in the short term as if exogenous to the budgetary system, unaffected to any significant extent by expenditure and financing variables, including the provision of ODA. In the longer term the impact of higher external resource inflows

[7] The amalgamation of the two functions was reversed in 2004 with the appointment of a new planning minister of Cabinet rank.

has been to increase real domestic revenues somewhat, though the causality may have been indirect, e.g. via GDP growth. Hypothesis (b) that aid has not induced domestic revenues to fall is thus upheld by the data. Moreover, higher aid has also induced both short- and long-term reductions in domestic borrowing.

The macroeconomic effect of aid, in the longer-term perspective, seems thus to have been benign, in spite of institutional evidence of lax fiscal control. Aid has induced incremental expenditures which have been broadly in line with the additional resources, and has been absorbed into the development budget whose allocation has been the topic of dialogue with donors. It has also been associated with high fiscal resource mobilisation and lower domestic borrowing, both conducive to macroeconomic stabilisation. In the short run, too, aid inflows have closely tracked the (in the 1990s, extreme) fluctuations in the volume of public expenditure, thus offsetting some, but not all, of the destabilising effect of gyrations in domestic financing in an economy which was liberalising its domestic financial market. Aid has thus been counter-cyclical.

The direct implication of these conclusions regarding the effect of aid on growth in Malawi is that this has depended on the often dubious effectiveness of development budget expenditures. Although the country paper makes no attempt to assess the quality of development budgets, it does analyse their functional distribution. In the later 1970s and throughout the 1980s there were large allocations to transport infrastructure, agriculture and 'other' (community, welfare, environmental, etc.) social services. Heavy spending on transport was made necessary at the time by the need for external trade to circumvent Mozambique. This brought no net benefit to the country, compared with the situation when transit through Mozambique was possible. Also included in the development budget was the construction of the new town of Lilongwe and its over-lavish airport. Since the mid-1990s some 30-40% of the development budget has been allocated to 'general administration' and housing, whose contribution to long-term pro-poor growth may be questionable.

Uganda

Economic development in post-independence Uganda falls into three periods. In the first period, 1963-71, the country was prosperous, export-oriented and had an overall resource surplus. The economy grew at 4.5% p.a. largely on the basis of buoyant exports of smallholder-produced coffee and cotton, whose value exceeded 25% of GDP. Incomes produced in the cash crop sector, in agro-industries and in the small but thriving distributive and financial sectors combined with taxes on trade to generate domestic fiscal revenues of some 12% of GDP. Domestic revenues together with external financing and limited domestic financing were sufficient to finance public expenditures averaging 15% of GDP. Prior to the establishment of the Bank of Uganda in 1967, the East Africa currency board arrangements precluded the monetisation of any fiscal deficit, and maintained broad price stability.

The second period, 1971-85, was characterised by political instability, conflict and serious economic mismanagement which resulted in an estimated average decline of 1% p.a. in real GDP (approaching 4% per capita). The economy reached a nadir in 1979-80, and recovered somewhat thereafter. The volume of exports more than halved over the period.

The Idi Amin regime which took power in the coup d'état of 1971 adopted an essentially predatory and rent-seeking approach to the economy and public finances. It expelled Asian entrepreneurs and traders, transferring businesses to political appointees in whose hands many of them failed. Export-oriented cotton and tea production virtually ceased. Coffee marketing cooperatives became a source of patronage and rent, which eroded producer incentives. The integrity of financial institutions was undermined by politically dictated lending. Public and private investment expenditure was much reduced, and the infrastructure deteriorated. Domestic revenues, buoyed up in the mid-1970s by a coffee boom, faltered, falling to below 4% of GDP in 1979 when the regime fell. This left a widening fiscal deficit – 8-10% of GDP in the late 1970s – which was covered by inflationary financing. With falling public revenues and declining export earnings, Uganda defaulted on its bilateral external debt-service obligations.

The pattern of decline was briefly reversed, following the Tanzanian invasion of 1979, and with the restoration to power of President Obote in 1981. GDP and domestic revenues increased, and public expenditure on social services and infrastructure revived. The development budget rose to 10% of GDP from a previous low of only 5%. However, insurgency, civil war and repression soon occasioned further recourse to inflationary finance, undermining the prospects for comprehensive economic recovery.

During the Amin years aid inflows were reduced to a trickle. They revived briefly under Obote II in the context of agreement with the IMF on adjustment measures and with the Paris Club on debt rescheduling in 1981, only to decline again as evidence of human rights abuses mounted and macroeconomic instability worsened.

In the third period, starting in 1986, after a hesitant start, there has been a time of fairly consistent economic recovery, with growth averaging 6% p.a. Commercial agriculture and the formal private sector revived. There was a major externally-financed effort of rehabilitation and reconstruction. This was accompanied by the progressive implementation of far-reaching policy and institutional reforms, including reforms in budgeting and public finance management, and the implementation of effective pro-poor expenditure prioritisation. Measures of privatisation were undertaken, assets were restored to expropriated former owners and, albeit slowly, the formal private sector re-emerged. A floating, competitive, exchange rate was adopted, coffee marketing was privatised, further improving producers' incentives, and exports were diversified with investment in fisheries and fish processing.

During this period aid inflows burgeoned, rising from 3-5% of GDP in 1980-5 to 12% of GDP in 1990-4, declining to 8-10% of GDP thereafter. The augmented volume of aid financed a significant increase in volume of public expenditure and its share in GDP. From an average of 10% of GDP in the 1980s, public expenditure rose to an average of 17% of GDP in the 1990s. Most of this increase occurred in the development budget, which rose as a share of total expenditure from 20% prior to 1986 to 40-50% in the 1990s. Some 85% of the development budget has been externally financed.

Relations between the government and donors in most of the post-1985 period were characterised by a spirit of cooperation and common purpose rarely attained in other countries, covering institutional and structural reforms, macroeconomic management, public expenditure management and the development of public services. Uganda pioneered the now widespread practice of formulating poverty reduction strategies by publishing its own Poverty Eradication Action Plan in 1996 and shortly thereafter producing its first results-oriented medium-term public expenditure framework. It offset the potentially harmful effects of cash budgeting on priority pro-poor expenditure programmes by creating a prioritised 'budget-within-a-budget', the Poverty Action Fund, through which concerned donors sought to disburse their assistance.

Though Uganda unified its budget management in 1992, bringing both its recurrent and development budgets under the authority of the Ministry of Finance, Planning and Economic Development, it is clear that aid inflows continued, at least until the budget reforms of the late 1990s, to be regarded primarily as a resource for the development budget. Development budget expenditure as a share of GDP fluctuated through time in line with changing levels of external financing.

The results of the VEC models estimated for Uganda were affected by breaks, and inconsistencies in, and changes in the composition of, time series data, giving rise to doubts about the robustness of the coefficient estimates. The econometric analysis nevertheless generates three interesting results:

i. *Aid and expenditure.* Over the longer run disbursements of external grants and net loans have raised both development and recurrent budget expenditures.

ii. *Macroeconomic impact.* Although the evidence is somewhat ambiguous, ODA and recorded inflows have had a stabilising or at least neutral effect on the macroeconomic policy stance. In the long term, aggregate expenditure has risen more in response to inflows of recorded grants and loans, but less in response to disbursements of ODA, than receipts of these inflows. Estimated domestic revenues are shown to have increased in response to inflows (which may have occurred indirectly, through the effect of aid in increasing GDP, and thereby revenues). The estimated effects of inflows (on all definitions) on domestic borrowing have been slight and insignificant, suggesting, on the one hand, that there was no explicit policy of using aid to achieve fiscal savings, but, on the other, that the receipt of aid was not the pretext for abandoning fiscal control .

iii. *Performance responsiveness of aid.* Both ODA and recorded inflows seem to have been responsive to the previous year's revenue and expenditure performance, increasing in apparent response to revenue falls and rising after expenditure increases. This could be illustrative of the coordinated and collaborative relationship between the government and donors referred to above.

These results imply that the impact of aid on growth in Uganda has depended on (i) the uses to which development expenditure has been put and (ii) the contribution to growth of macroeconomic stability.

During Uganda's time of troubles aid was low and development budgets were small; the potentially beneficial effects of development expenditure were negated by adverse economic and security conditions. With the restoration of peace and economic policy reforms after 1986, development expenditure began to play a role complementary to the other forces in the economy working for growth and poverty reduction. In the later 1980s there was heavy emphasis on the rehabilitation of the transport and power infrastructure needed to revive internal and external trade and the market economy. In the 1990s the focus turned more to the needs of longer-term growth and poverty reduction, with sharply increased donor-supported outlays on education and, to a lesser extent, health programmes, rural water and other community services. In the case of Uganda, therefore, the proximate contribution of aid to growth since 1986 has come through its financing of well chosen public expenditure programmes financed through the development budget and managed, by the late 1990s, with increasing attention to programme performance and results.

As regards benefits from stabilisation, the government has, since the mid-1990s, reduced public debt, and thus brought down the rate of inflation and interest rates on Treasury bills, and the cost of borrowing in the economy. These two beneficial outcomes have in all likelihood been contributory factors in strengthening investor confidence, increasing private investment and thus in sustaining growth.

Zambia

Zambia's economy and trade have always depended heavily on the copper industry. The decline of copper output and of copper prices since the mid-1970s has caused per capita GDP to fall more or less uninterruptedly for the last thirty years.

The Zambia country paper divides the time since independence in 1964 into three periods. During the first period, 1964-74, the economy still had an overall resource surplus, and thus no need in aggregate for external financing. Nevertheless, following steep increases in investment expenditure and government consumption, and despite buoyant revenues, a fiscal deficit emerged which was covered by local and foreign borrowing. There was a large increase in government employment.

In the second period, 1975-91, plans for extensive nationalisation of productive assets in mining, manufacturing, infrastructure and financial services were implemented, creating a large parastatal sector. This coincided with the beginning of a secular decline in copper prices and a massive

deterioration of the terms of trade, which contributed to falling real revenues and a growing strain on public finances. Real investment expenditure and government consumption were reined in, and real public service wages reduced, but not sufficiently to avoid continuously high levels of domestic borrowing, mounting external debt, growing macroeconomic instability and a succession of balance-of-payments crises. Concessional foreign financing took on significant proportions for the first time in the 1980s. This was largely bilateral – initially in loan form but with a growing share of grants in the later 1980s.

Economic controls and the price and exchange-rate incentive structure militated against economic diversification and against agricultural production, which was nevertheless shored up with mounting subsidies. When the subsidies were suddenly cut, and a higher procurement price of the staple cereal, maize was passed on to consumers, civil unrest erupted, leading to elections in which the government of President Kaunda was overturned. The election in 1991 occasioned a spike in public expenditure which rose in that year to 60% of GDP.

The third period began in 1991 with the election of the government of President Chiluba which carried out radical structural adjustment and liberalisation reforms – including privatisation – albeit with an enthusiasm which was much diminished by the middle of the decade. Liberalisation occurred when the terms of trade were falling fast. It was out of sequence with macroeconomic stabilisation, thus contributing to a short period of hyperinflation, and an accelerated decline in real incomes and weakened revenues. After 1995, however, the economy became more stable, despite renewed heavy recourse to domestic financing, and budget resources were sufficient to raise expenditure on the social sectors and on fixed investment.

The saga of Zambia's economic decline has been punctuated by balance-of-payments and external debt-service crises and, in the domestic economy, against a background of falling real revenues, it has featured severe fluctuations in real public expenditure occasioned by episodes of exchange-rate fluctuation and major changes in policy on public service wages and food subsidies. The government has maintained the dichotomy between its recurrent and capital budgets – with the latter being relatively small and essentially externally financed. The planning and management of its fiscal affairs and public expenditure have been *ad hoc*, and its fiscal control has been weak, despite the adoption of cash budgeting in the early 1990s. There has been a palpable decline in the quality of public services, only arrested in the later 1990s as a growing share of assistance was received in sectoral or general budget-support form with the intention of restoring budgetary provision for public services, especially the social services.

Aid disbursements, including for the first time large-scale inflows of concessional multilateral credits, burgeoned in the 1991-5 period. A significant part of these flows was associated with DDSR operations,[8] including the conversion of commercial-terms debt to concessional terms, with little immediate impact on fiscal magnitudes. During this time a wide gap opened up between recorded ODA disbursements and recorded external financing of the fiscal deficit (cf. Chapter 3). Aid disbursements fell, and became more volatile, after 1995 as bilateral donors became disillusioned with aspects of governance, and all donors became concerned about procrastination in the privatisation of the copper mines. Donors' and creditors' doubts were temporarily laid to rest in 2000 when Zambia reached its HIPC 'decision point' and qualified for interim debt-service relief on Naples terms. However, subsequent policy decisions by the government, notably to effect a significant increase in public service remunerations, have prevented Zambia from reaching its HIPC 'completion point' on schedule in 2003, thus postponing the write-off of bilateral debt stocks.

The historical account of Zambia's economic performance, use of external finance and aid relationships leads to the formulation of questions for empirical testing. These are whether (or not):

[8] In part connected with the 1993 agreement in the Paris Club to reschedule some bilateral guaranteed debt service maturities on Toronto terms.

a. ODA and the external financing of the budget have mainly financed the (rather small) capital budget;
b. recurrent budget spending, too, may have increased as a consequence of aid inflows;
c. large but volatile inflows of aid, especially in the 1990s, may have helped to stabilise the economy by encouraging aggregate expenditure restraint and/or higher revenues, and by lowering the domestic financing of the fiscal deficit.

The econometric results showing the impact of ODA (in total and net of DDSR, TC and food aid), of (the very small volume of) recorded grants, and of recorded foreign loans are qualitatively similar.

The principal conclusions of the econometric analysis are that one-period injections of external financing have had: (i) positive and sustained impacts on capital expenditure – exceeding the magnitude of the aid; (ii) apparently negative and sustained impacts on domestic revenue; (iii) initially positive, but later negative though insignificant, impacts on recurrent outlays; and (iv) initially positive, but thereafter insignificant, impacts on domestic borrowing. The significantly negative apparent effect on revenue may be spurious, simply reflecting the fact that economic decline in Zambia has brought in its train both a fall in revenue and rising receipts of external financing.

Aid in Zambia has thus not for the most part been used to stabilise the economy, or to offset the shocks to which it has been subject. Nor has it prevented the erosion of the funding of public services and the deterioration of their quality and outreach. However, aid has helped to limit the extent of deterioration, both directly, through its on-budget contribution, and indirectly and in the longer term through debt relief. The government has, however, reacted in instinctive fashion to the receipt of external financing by raising its capital budget expenditures. A pledge to continue doing so is made in its March 2002 Poverty Reduction Strategy Paper. By agreement with the donors, however, a rising share of public expenditure has been allocated to the social sectors, whose funding has also been more stable than that of other sectors.

Aid has so far been ineffective in arresting per capita income decline in Zambia. Circumstances have imposed a wrenching economic adjustment, made more difficult and prolonged by wayward policies and later by the government's failure to translate its bold reforms into a credible, transparent and predictable environment for investment. Aid has nevertheless limited the fall in fiscal receipts, mitigated the rigours of economic adjustment, and almost certainly made the accompanying reforms more politically acceptable.

Summary of results and conclusions

The fiscal response estimates calculated for the three countries are summarised in Table 4.1. The most consistent pattern in all three is the positive response of development budget expenditures to external resource injections. Attributed increases in expenditure have tended to exceed the size of the injections of aid, with the excess being offset, in Malawi and Uganda, by higher domestic revenues, also induced by aid. The table also suggests that, of the three, Zambia has had least success in using aid to stabilise its macroeconomy, and that Malawi has been the most successful in using aid to this effect.

These econometric results need to be read with some caution. They depict average responses over the periods of time covered by the regressions from which they are derived. These periods were characterised – in Uganda and Zambia at least – by serious prolonged episodes of political and economic turbulence when predatory, distorting and dysfunctional policies reigned, which were then followed by periods when these economies were liberalised and in varying degrees stabilised. Data limitations have prevented the fuller exploration of fiscal responses to aid on either side of historical points of inflection in economic policy and management. These average results are

therefore not wholly characteristic of particular sub-periods. They should certainly not be taken as representing these countries' responses to aid in the most recent period.

The econometric equations for Uganda and Zambia fit the data noticeably less well than those for Malawi. This is symptomatic of the two countries' turbulent and economically unstable past, causing instability in their fiscal response behavioural relationships. In the case of Uganda it was not possible to fit satisfactory equations exemplifying the separate effect of external financing on development and recurrent expenditures. The analysis of the three countries upholds the presumption, mentioned in section 4.1, a systematic and disciplined budget system yields more reliable fiscal impact estimates.

On the other hand, legitimate satisfaction can be drawn from the fact that, despite the heterogeneity of the external resource inflows reaching all three countries, and the changes through time in the composition and motivation of these flows, coherent and statistically satisfactory results have been obtainable for each country. It is particularly remarkable that recorded net foreign loans have performed satisfactorily in regression equations, in view of the fact that these flows have been determined through time not only by the commitment decisions of a changing cast of non-concessional and concessional lenders but also by borrowing countries' debt-service performance and creditors' decisions on debt and debt-service relief, the net outcomes of which cannot have been transparent to budget planners.

Table 4.1 Summary of econometric results

		Impact of inflows on:			
		Development Budget	**Recurrent Budget**	**Domestic Revenue**	**Domestic Borrowing**
Malawi[a]	**Grants**	++	- -	+	- -
	Foreign Loans	+	**?**	+	- -
	ODA	++	- -	+	- -
Uganda[b]	**Grants**	++	+	+	..
	Foreign Loans	++	++	+	..
	ODA	++		+	..
Zambia[c]	**Grants**	++	+	- -	+
	Foreign Loans	+	+	- -	..
	ODA	++	+	- -	+

Symbols:
++ strongly positive — - - strongly negative
+ moderately positive — - moderately negative
? ambiguous — .. insignificant

Notes: a) positive effects on domestic revenues are lagged; b) estimated effects on development and recurrent budgets are not robust, ODA effect estimated only for total expenditure; c) positive effect on recurrent budget in current year, in later years effect negative but insignificant.

For a fuller understanding of the contribution of external financing to public expenditure policy, macroeconomic stabilisation and economic growth, the econometric results need to be complemented by the sort of historical and policy analysis which is provided in the introductory and contextual chapters of the country studies. This analysis has identified some important features of the role and use of aid in the three countries, and some significant differences between them.

Public expenditure management. The studies point out the changing character of development budget outlays. In Malawi and Uganda one effect of the greater availability of budget support has been to decrease the share of the development budget used for capital formation, and to increase

the share allocated to items of an essentially recurrent nature, often classified as 'general administration'. This practice has mitigated the tendency to under-fund the non-wage operation and maintenance expenses of public institutions and physical infrastructure. In Zambia, where most of the capital budget continued to be used for investment purposes, the donors had to press the government to use aid inflows to augment the 'other departmental charges' line item in social sector spending ministries' recurrent budgets.

The way of the future lies in a further blurring of the distinction between recurrent and development budgets, and in a shift towards programme or output budgeting. In Uganda, the requirement of the Ministry of Finance/Planning that spending ministries should, in the context of the country's medium-term expenditure planning, draw up 'budget framework papers' showing how all anticipated resources will be deployed to achieve programme objectives, has already diminished the operational - as opposed to formal - distinction between the recurrent and development budgets.

The country case studies also draw attention to changing patterns and practices in the sectors and purposes to which donors have sought to have their aid allocated. Donors have had some success in persuading recipient countries to alter their sectoral expenditure priorities in favour of the social sectors and pro-poor expenditure programmes, or at least to protect these sectors' allocations from the vagaries and uncertainties of cash budgeting. This was most marked in the case of Uganda where the government's Poverty Action Fund received direct donor support and was instrumental in increasing the volume and share of budgetary allocations for designated pro-poor programmes, mostly in the social sectors. Malawi and Zambia had no such instrument for earmarking funds. In Malawi, and until the later 1990s also in Zambia, social programmes were accordingly underfinanced. The share of social sector programmes has increased in Zambia since 1995, in good part due to the earmarking of donor funding to expenditures in these sectors whose recurrent financing became more predictable and less volatile than that of other sectors such as agriculture and infrastructure.

Macroeconomic stability. The country descriptions draw attention to the chronic macroeconomic management difficulties of Malawi and Zambia, contrasting the experience of these countries with that of Uganda where lasting stability was achieved in the course of the 1990s. The econometric evidence is that aid was a stabilising force in Malawi, because it substituted for domestic borrowing and strengthened revenue mobilisation; that it had little effect on domestic borrowing in Uganda; and that it increased domestic borrowing in Zambia. These results may be unreliable because of flawed fiscal data on domestic borrowing. The safest conclusion is that aid has at most been a facilitating factor whose influence has easily been overlaid by actions taken in the spheres of macroeconomic management and fiscal discipline.

Effect on growth. The contrasting growth experiences of three generously assisted countries also highlight the lack of any simple causal relationship between aid and growth. The country paper on Uganda argues that the growth success in that country in the 1990s owes a great deal to the relative stability, transparency and predictability of the policy environment for investors and producers created by the combination of growing economic stability and institutional and administrative attitudes supportive of the private sector. Uganda also greatly improved the quality and availability of transport, communications and power supply infrastructure, but these alone would have been insufficient. In Malawi and Zambia, the enduring factors inhibiting growth lay not so much in the arena of public expenditure on services needed by the private sector – which were extended and rehabilitated with external assistance - but in the policy, institutional and administrative environment for enterprise.

Chapter 5: Conclusions and Implications

Rather than summarise earlier chapters, this final chapter draws together the threads on certain recurrent themes. It reflects on the added value and implications of the fiscal effects research and contextual analysis performed on the three countries in terms of the light shed on the budget process and other factors in aid effectiveness. It offers concluding thoughts on the empirical methodology used. It also draws attention to some of the limitations inherent in the approach adopted by the country studies, and its implementation.

5.1 Insights into the budget process and aid effectiveness

5.1.1 Insights into the budget process

As regards recipient countries' resource management, a common feature apparent from the time series analysis of fiscal data from the three countries is the persistence of the dichotomy in fiscal planning and resourcing between their recurrent and development budgets. The size of development budgets has been largely contingent on expected external financing, and that of recurrent budgets on expected domestic revenues. Dual budgeting has been most deeply institutionalised and systematic in Malawi, the country with the longest continuous aid relationship with the donors. In Malawi the Office of the President had responsibility for the planning and implementation of the development budget, and was the interlocutor with the donor's on aid volumes and allocations. It was able to call on the Ministry of Finance to provide complementary national resources required for donor-financed projects.

Although all three countries have merged their finance and planning ministries – in the cases of Uganda and Zambia more than ten years ago – the practice still persists of aligning recurrent expenditure with domestic revenues and of basing development budgets to a large extent on the availability of external resources. The statistical relationship between development budget expenditure and concessional aid receipts remains strong, and the inferred direction of causality runs from receipts to expenditures. No similarly close relationship can be established between external resource receipts and the size of the recurrent budget. In some specifications external resources are seen to have increased recurrent expenditure, while in others they seem to have had the opposite impulse effect. In all cases the impact has been small.

Fiscal dichotomy suggests *prima facie* that the three countries, and others like them, may have operated budgetary systems where 'entitlement' and 'discretionary' expenditures are kept distinct, as in the version of the Stone-Geary expenditure model (Chapter 2). This would imply that their recurrent budgets have mainly been used to meet entitlement expenditures required by historical, political and clientelistic commitments from which there is no short-term escape, and that their development budgets have mainly covered discretionary expenditures on new projects and programmes which, though desirable, can be rescheduled to fit with the availability of resources and the timing of flows of external financing.

Budgetary practice in the three countries has largely conformed to the Stone-Geary model, but the fit is not perfect. In the 1990s the share of Uganda's recurrent budget devoted to mandatory and entitlement expenditures, i.e. wages and salaries, pensions and other subsidies and transfers, interest payments, defence and other statutory expenditures was 66-68%; in Malawi it was 60-65%; and in Zambia it was 70-72%. About one-third of recurrent budgets remained available for discretionary outlays, for example on goods and services, and including in Uganda's case expenditure through the PAF on the recurrent needs of priority pro-poor programmes. Development budget expenditure, on average 75% financed by donors, can be considered as 100% discretionary, in the sense that in none of the three countries was it mandatory, nor was there a statutory or customary entitlement to these expenditures. In development terms, governments'

welfare objectives are advanced when expenditures over and above these basics are increased. Most non-basic expenditures are financed out of the development budget.

On the other hand a large proportion of recurrent budget expenditure has been mandatory or otherwise necessitated by entitlements. There has of course been flexibility in meeting claims. These have not all been fixed in real or even nominal terms. At times of stringency, governments have been able to compress their wage bills by denying their employees full cost-of-living adjustments and by trimming their payrolls. Governments have fallen into arrears on their interest payments, and in their payments of wages and contractors' bills. They have nevertheless recognised that these recurrent charges have had a prior claim on resources.

The main implication of the Stone-Geary model is that the shares of discretionary expenditure devoted to each item or function should approximate to the marginal contribution of these expenditures to social welfare. There is plenty of room for dispute about the marginal social benefits of discretionary expenditures, based on political preferences and economic assessments, and decision-makers' choices are commonly over-determined by political pressures – from domestic vested interests and external donors. In this respect the recent development of poverty reduction strategies in all three countries, starting with Uganda, and the rising share of the social sector outlays in Uganda and Zambia, represent significant reappraisals of the weights[9] in these countries' underlying welfare function.

The fact that poverty reduction strategies, if defined with clarity and pursued with commitment and consensus, can alter expenditure shares and the relative size of expenditure programmes is a warning against excessive determinism about empirical estimates of the fiscal impact of aid based on historical data. Events can alter historical relationships, and great interpretative care is required in projecting past relationships into the future.

5.1.2 Fiscal rigidities and fungibility

The papers' findings have implications for the donors of general budget support. General budget support is predicated on the strong possibility, if not actuality, of a high degree of resource fungibility in national budgets – between sectors and across the recurrent-development institutional divide. It seems, however, that budget planners in recipient countries are not yet accustomed to seeing matters this way. They persist in regarding external resources, in programme as well as in project form, primarily as resources for expenditures which they label as 'development', and which may lack the relative stability of expenditures habitually financed from the recurrent budget.

The institutional implications of the entrenched practice of allocating aid to the development budget and of financing the recurrent budget from domestic revenues and borrowing have received too little attention from the donors of sector- and budget-support. The practice creates an administrative limitation on the fungibility of aid inflows in which governments appear to have been willing accomplices. It limits governments' room for manoeuvre in trading-off recurrent and capital expenditure with a view to raising the efficiency and effectiveness of their programmes. The strong estimated impact of external resource inflows on development/capital budget expenditure and the weaker impact on recurrent expenditure, serve to underline the persistence this practice, and to remind donors that they are still, in most countries, dealing with dichotomous fiscal institutions which may impede the rational and coherent deployment of expenditures in pursuit of agreed development goals.

Fungibility-inhibiting practices seem to have been eroded over the past decade, not only in Uganda following its budget reforms but also in Malawi where the development budget has become increasingly used to finance certain recurrent expenditures. But the government of Uganda is the only one of the three to have made a break with the past by adopting, in the late

[9] coefficients in equation 2.3.

1990s a more rational, programme-based system of output budgeting. The results presented in this paper emphasise the importance of this example to other countries of Uganda's recent changes in budgeting practice.

5.1.3 Recording of aid flows

The comparative analysis of data on external resource inflows (Chapter 3) has highlighted the persistent, sometimes wide and incompletely explained, differences between net ODA disbursements as recorded by donors and reported by OECD/DAC and recipient countries' records of fiscal receipts of foreign grants and net loans, most of which of necessity have been official aid. The three countries, most notably Uganda, have made efforts to consolidate their budgets and to eliminate off-budget expenditures, making estimates of direct payments by donors where precise information on these is lacking. These efforts have been assisted by some bilateral donors' abandonment of aid tying and by DAC donors' collective assent to the principle of making greater use of recipient countries' own procurement mechanisms. To an increasing extent, therefore, aid transfers are taking place in cash, not in kind. Nevertheless, fiscal consolidation is not yet complete, and there remain incompleteness and inaccuracies in the recording of external resource inflows. The donors of aid for general or sectoral budget support have so far been relatively unconcerned about this, concentrating their attention instead on the 'fiduciary' aspects of budget management, i.e. on the trustworthiness of the expenditure accounts. However, improvements in expenditure management are likely to remain incomplete so long as there are gaps in the recording of receipts and so long as there remain non-budgeted expenditures. The reconciliation of data on ODA disbursements and recipients' external resource receipts deserves higher priority than it has so far received.

This said, the results of the empirical analyses show qualitatively similar impacts on fiscal aggregates from injections of ODA and injections of recorded inflows into budgets of external grants and net loans. From an econometric perspective, therefore, the data discrepancy has not vitiated the analysis, nor has it made it impossible to draw meaningful conclusions.

5.1.4 Lagged effects in budgeting

The analysis yields certain insights into non-contemporaneous influences, both on and of aid. Aid injections seem in some cases to have been influenced by prior years' fiscal aggregates (which may have been proxying for other, omitted, macroeconomic variables). Injections have also had multi-year effects on other aggregates, with strikingly varying, not to say ambiguous, time profiles. Thus, in Zambia, a one-period injection of aid is seen to have given rise to persistently higher capital expenditure, but to a flow of recurrent expenditure which is higher for a year or two before falling below previous years' levels. The interpretation of these lagged effects, which budget planners cannot see and are not conscious of, is not easy. They may be a reflection of a succession of *ad hoc* decisions in reaction to unexpected circumstances rather than of systematic and deliberate behavioural response patterns. They may also reflect the fact that budget decisions have intrinsically lagged effects on expenditure and financing because of the time it takes to translate intentions into actions. Whatever the case, it is worth remembering, in the analysis of fiscal and expenditure decisions, that the results of these decisions may well be lagged, and that there could be surprises regarding the magnitude and even the sign of the lagged effects.

5.1.5 Aid and economic growth

What, if anything, can these observations and findings tell us about the mechanics of the impact of aid on growth in the three countries? In all three aid receipts have been high as a percentage of GDP and have, even after allowing for allocations for debt and debt-service reduction, added significantly to gross national expenditure. Why, therefore, was aid associated with sustained and fairly rapid growth in Uganda (post-1985), but not in Malawi or Zambia?

There is no formal answer to these questions in fiscal effects analysis. The fact that inter-country variations in estimated fiscal impacts have no systematic effect on economic performance serves only to underline the *ex ante* indeterminacy and country-specificity of the aid-growth relationship. The three country studies suggest that the clue to the aid-growth relationship lies in the articulation between development budget expenditures and the incentive structure for private enterprise development. Where aid-assisted development budget expenditures have helped to supply the public services which were pre-requisites for private sector growth or have been sought by an already expanding private sector, aid has contributed to growth. Where, on the other hand, development budget expenditures have occurred in environments where private sector development, job creation and livelihood improvement were inhibited by the policy environment, political and regulatory uncertainty and other disincentives to enterprise expansion, their rates of return have been low, and on occasion negative.

In Uganda, after 1985, the real economy entered a phase of consolidation, revived confidence and expansion. It required improving infrastructural and other public services to sustain its momentum. In addition to its short-term expenditure multiplier effects, aid was also effective in helping to create the capacity to provide these services. Small development outlays in agriculture were sufficient to facilitate a significant and sustained revival of market-oriented farming.

In Malawi, the growth momentum, present in the 1960s and 1970s, was broken in the two subsequent decades by inconsistent and ill-disciplined macroeconomic policies applied in response to a debt crisis, aggravated (for a while) by conflict in Mozambique, and by rent-seeking behaviour by the political class. The demand for public services and rates of return on public development expenditures were accordingly reduced, making aid relatively ineffective in promoting growth.

Expenditure by Malawi and Zambia in the late 1970s and early 1980s on infrastructure required to duplicate external trade links made no contribution to productive potential, compared with the previous situation when transit through countries to the South was possible. Zambia's and Malawi's development expenditures on agricultural production and marketing produced disappointingly low returns (World Bank, 2002: Chapter 2; World Bank, 2004: Chapter 3).

In the case of Zambia, public expenditure would doubtless have had to contract in real terms even more without aid than with it and, at least in the years of a fixed and overvalued exchange rate, the real economy would have been more balance-of-payments constrained and therefore smaller. Aid may thus have had a short-lived positive expenditure multiplier effect. Its contribution to capacity-building was diffuse, excessively focused on fixed capital formation, unsustainable and not complemented by investment in the private sector.

In both Malawi and Zambia, the propensity to fiscal indiscipline survived the adoption of cash budgeting, contributing to the recurrence of episodes of macroeconomic instability and to a stop-go relationship with the donors. Donors' concerns about corruption in public life accentuated the volatility of aid flows. This in turn impaired the contribution of aid to growth, *inter alia* through the negative signal it sent to the private sector about prospects for the business environment.

The message of the country studies for the aid-and-growth debate, therefore, is that, to achieve lasting beneficial effect, official aid should support public expenditure programmes which complement growth processes occurring in the real economy, and which form part of a confidence-inspiring economic (and security) policy stance characterised by stability and predictability.

5.2 Methodology

The econometric assessment of data for the three country case studies confirms in general terms the suitability of the VAR and VEC models used. The estimated models portray the average effects of aid over a long time period. The advantage over single equation time series models is that the VAR/VEC models treat all variables as endogenous, and therefore capture the linkages between different forms of expenditure and sources of finance. Secondly, VARs do not need to rely on assumptions or place restrictions on certain parameters, which is required in estimating structural systems equations using instrumental variables. In our analysis, the impact of aid on the other fiscal variables is direct as well as indirect via changes in the other fiscal aggregates. Impulse response analysis is also convenient for assessing whether increases in total expenditure have been larger than the initial increase in aid, taking into account changes in other sources of finance. However, if confidence intervals are large, or not defined, one needs to be careful about drawing firm conclusions about the respective magnitudes of estimated effects.

Time series or VAR models have certain characteristic shortcomings. The three country case studies use annual data for which there are relatively few observations. VAR/VEC models are best suited for the analysis of relatively high-frequency and long time series data. They can become easily over-parameterised, which was the case in some of the estimated models. One possible approach would be to treat variables that do not seem to be affected by the other variables as exogenous. This would, however, limit the number of responses to be analysed, for example making it impossible to examine the impact of aid on exogenous variables, even though there might be interesting indirect effects.

Because the model assumes that there are contemporaneous effects, residuals in each equation are correlated. However, if the direction of this contemporaneous causality is uncertain, the model results can be slightly biased. In most cases, however, the model results confirmed the hypotheses made and one could expect the direction of contemporaneous causality to run from aid to fiscal aggregates and not vice versa. In addition, omitted variable bias can also lead to residual correlation, which causes contemporaneous impulse responses. In the case of Zambia, the strong negative impact of aid on domestic revenue could be partly attributable to the correlation between residuals in the aid and revenue equations, which could be the result of omitted variable bias. Changes in GDP are likely to have affected both aid and domestic revenue, but are not controlled for in the models. The fact that one form of external financing is excluded in each model may also lead to some omitted variable bias. However, apart from the effect of aid on revenue in Zambia, most of the models do not produce surprise results, which implies that omitted variable bias may not be significant.

The results of some models appear to be more robust than others. In a few cases, the model results were sensitive to the inclusion of a dummy variable for outlier values in the data. However, as far as was possible, the main conclusions in each paper are based on models that provided the most robust results and passed the standard diagnostic tests. In Uganda, due to a rather short time series, the results for models including total expenditure, instead of the separation into development and recurrent expenditure, were more robust, and therefore more reliable. In Zambia, the model used to estimate the impact of grants performed less well than those for ODA and foreign loans. In the case of Malawi, a dummy variable was added to each model to stabilise the impulse responses, but this did not qualitatively change the results.

5.3 Limitations of the analysis

As applied in the country case studies, the empirical enquiry into the fiscal effects of external resource inflows has been able to cast only limited light on the processes at work in absorbing aid into the domestic economy. It has been limited to documenting average relationships between the main recorded aggregates in the fiscal accounts of recipient countries whose budgets are known not to have been consolidated, and whose fiscal and monetary accounts are unreconciled. Data

problems have been aggravated by the non-recording or misclassification of flows, and the changing composition of heterogeneous aggregates such as foreign loans. The analysis leaves out of account numerous quasi-fiscal transactions and any effect of donors' net ODA on these magnitudes.

The fiscal accounts are thus a wholly satisfactory guide neither to how total public expenditures have been deployed, nor to the impact of public sector activities, including those which are aid-financed, on the rest of the economy. The main conclusion common to all the studies – that external inflows have stimulated higher development expenditures – merely confirms the persistence of long-standing institutional practice originally instituted to satisfy donors that their assistance was being devoted to developmental purposes.

The shortness of the time series used means that the econometric analysis can only cover fiscal aggregates. This has precluded the econometric assessment of the effects of aid on sub-aggregates, such as programme, sectoral or economic expenditure categories. The paucity of observations has prevented the identification of shifts or fluctuations in policy responses occurring within the periods covered by the time series analysis.

Inferences drawn in the country papers about the influence of aid on expenditure at the sub-aggregate level have thus had to rely on a combination of information about actual variations in development and recurrent budget outlays by sector and economic classification, and about donors' strategies and commitments. Fiscal effects methodology, of course, throws no light on the effects of aid on the efficiency and effectiveness of expenditures on public services, or on imbalances between expenditure types. Complementary information on these aspects of aid deployment has to be sought outside the formal framework of the analysis of fiscal effects.

Inferences about the contribution of aid to macroeconomic stability were drawn in Chapter 4. These inferences have, however, to be treated as provisional until cross-checked against information on net bank advances to governments and net bank purchases of government bonds. It is common for there to be mismatches between the sums governments claim to have borrowed in a given time period, and the volume of lending by banks and other domestic creditors.

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Annex: Net External Financing Correlation Coefficients

Malawi

		Row 1	*Row 2*	*Row 3*	*Row 4*	*Row 5*	*Row 6*	*Row 7*
Row 1	Grants, excluding TC	1.000						
Row 2	Bilateral concessional	-0.030	1.000					
Row 3	Multilateral concessional	0.817	-0.199	1.000				
Row 4	Bilateral non-concessional	-0.507	-0.036	-0.527	1.000			
Row 5	Multilateral non-concessional	-0.568	-0.084	-0.611	0.539	1.000		
Row 6	IMF	-0.247	-0.019	-0.340	0.474	0.314	1.000	
Row 7	Private creditors (guaranteed)	-0.174	-0.113	-0.398	0.393	0.337	0.328	1.000

Uganda

		Row 1	*Row 2*	*Row 3*	*Row 4*	*Row 5*	*Row 6*	*Row 7*
Row 1	Grants, excluding TC	1.000						
Row 2	Bilateral concessional	0.025	1.000					
Row 3	Multilateral concessional	0.864	0.094	1.000				
Row 4	Bilateral non-concessional	-0.329	0.262	-0.220	1.000			
Row 5	Multilateral non-concessional	-0.509	-0.116	-0.414	0.232	1.000		
Row 6	IMF	-0.029	-0.145	-0.121	-0.218	0.036	1.000	
Row 7	Private	-0.389	0.146	-0.276	0.514	0.178	-0.202	1.000

Zambia

		Row 1	*Row 2*	*Row 3*	*Row 4*	*Row 5*	*Row 6*	*Row 7*
Row 1	Grants, excluding TC	1.000						
Row 2	Bilateral concessional	-0.486	1.000					
Row 3	Multilateral concessional	0.758	-0.518	1.000				
Row 4	Bilateral non-concessional	-0.275	0.238	-0.308	1.000			
Row 5	Multilateral non-concessional	-0.601	0.452	-0.808	0.172	1.000		
Row 6	IMF	-0.143	0.192	-0.001	0.036	-0.037	1.000	
Row 7	Private	-0.322	0.293	-0.264	0.087	0.244	-0.124	1.000

Source: Global Development Finance