

Predictability of Budget Aid: Experiences in Eight African Countries

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Abstract

Given the often severe financing constraints faced by low-income countries, predictability of budgetary aid flows is an important condition for the sound planning and uninterrupted implementation of the budget and, thus, for achieving development objectives. This paper reviews aspects of aid predictability using a newly constructed dataset for eight African countries with longstanding IMF engagement during 1994-2004. We conclude that, averaged over time, deviations of budget aid from projections are relatively small. However, errors in projecting budget aid for any given year remain important at close to 1 percent of GDP on average. There have been some slight improvements in predictability since 1999, but these are not universal. We show that countries adjust to aid shortfalls through higher domestic bank financing and cuts in domestic investment spending. Adjustments are further exacerbated by the fact that aid shortfalls on average are accompanied by tax revenue shortfalls and current expenditure overruns.

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I. Introduction

Aid predictability has turned into a central issue in the quest for enhanced aid effectiveness. Predictability of resource flows has taken a particularly important place in the discussion on how untied budget aid can be delivered in the most effective manner. For countries whose budgetary spending depends heavily on disbursements of untied aid, volatile and unpredictable disbursements are considered to undermine the credibility and reliability of short- and medium-term budget planning processes by rendering original allocations obsolete and forcing expenditure adjustments during budget execution. These adjustments, in turn, can hamper the attainment of government objectives, most importantly by disrupting implementation of poverty reduction strategies. Moreover, to the extent that significant budgetary adjustments are not feasible during the budget year, lack of predictability also can result in deviations from macroeconomic targets with potentially significant consequences for macroeconomic stability.

The definitions of aid predictability vary, and misinterpretations can result from different definitions. The Development Assistance Committee (DAC) of the Organisation for Economic Co-operation and Development (OECD) in its guidelines for harmonizing donor practices for effective aid delivery defines aid as predictable if “partner countries can be confident about the amount and timing of aid disbursements” (OECD, 2005). This broad definition encompasses short-, medium-, and long-term disbursements, as well as intra-annual disbursements.

For the purposes of this paper, we define predictability as the government’s ability to limit the forecasting error of budget aid disbursements based on the information available at the time of budget preparation. Statistically speaking, our predictability concept focuses on the difference between expected values and outcomes, with expected values being conditioned on the set of available information before budget implementation begins. This definition is narrower than OECD (2005) since it focuses only on disbursement during the following budget year. Nonetheless it follows the notion of “confidence in disbursements” by implicitly allowing for a discounting of commitments that are not credible for recipient or borrowing governments. We also focus on budget aid rather than overall aid since lack of predictability of budget aid tends to have the most immediate impact on budget implementation and macroeconomic stability. By contrast, project aid generally is committed for several years in advance and is more lumpy by nature given the varying implementation speed of investment projects.

The most elaborate recent study of aid volatility and predictability is Bulíř and Hamann (2003) who find that aid flows are volatile and largely unpredictable. Drawing on aggregate commitment data and long-term disbursement data originating from OECD-DAC statistics, which covers both budgetary support and project aid as reported by donors, they conclude that (i) aid is more volatile than fiscal revenue and volatility increases with aid dependency; (ii) commitments consistently exceed disbursements; and (iii) disbursements cannot be predicted reliably on the basis of commitments alone.¹ A

¹ Bulíř and Hamann contrast total aid commitments with disbursement of long-term aid.

recent update in Bulíř and Hamann (2005) not only confirms this finding but concludes that volatility and lack of predictability have become worse in recent years despite aid harmonization efforts.

As regards predictability of aid in the context of IMF projections, which reflect judgments about the credibility of disbursements, Bulíř and Hamann (2003) provide some evidence from a survey of IMF desk economist for 37 countries. These data permit a distinction between project aid and budget aid and show that IMF program projections for 1998 overestimated disbursements of untied budget aid by about 25 percent on average, with one-year ahead IMF projections overestimating disbursements by more than 30 percent. Within-year disbursement predictions also fared poorly. Surprisingly, the study also finds that disbursements of project aid were consistently predicted with greater accuracy by IMF staff than budget aid.

A survey conducted among donors and governments in 15 African countries in 2003 and 2004 by the Budget Support Working Group (BSWG) of the Strategic Partnership for Africa (SPA) broadly confirms the magnitude of the shortfalls found by Bulíř and Hamann (2003).² According to SPA (2005), on average 81 percent of 2003 commitments were disbursed during 2003, with an additional 10 percent being disbursed in 2004. 9 percent of commitments were lost. However, large differences across countries were observed with less than 25 percent of resources disbursed on time in Senegal, and 100 percent disbursed on time in Ethiopia and Niger.

The SPA-BSWG survey also offers some explanations for the delay in disbursements. Donors responded that 40 percent of delayed or lost disbursements were due to unmet policy conditions, followed by administrative problems on the donor side (29 percent), government delay in meeting processing conditions (25 percent), and political problems on the donor side (4 percent). Again, reasons varied widely by country and donor group. For International Financial Institutions, unmet policy conditions were cited as reason for difficulties to disburse in more than 60 percent of the cases, followed by delays in governments meeting processing conditions (about 25 percent).³ For the European Commission and bilateral donors, administrative and political problems on the donor side ranked first with about 40 percent of the cases, followed by unmet conditionality with about 35 percent.

This paper casts new light on the predictability of budget aid in eight African countries – Benin, Burkina Faso, Ghana, Mali, Mozambique, Senegal, Tanzania, Uganda – using a newly compiled novel dataset that builds on IMF projections and actual outturns.⁴ The focus on countries with long-standing IMF engagement minimizes the importance of unmet policy conditionality for disbursement shortfalls, allowing us to focus on donor

² The countries covered in the survey are Benin, Burkina Faso, Ethiopia, Ghana, Kenya, Madagascar, Malawi, Mali, Mozambique, Niger, Rwanda, Senegal, Sierra Leone, Tanzania, and Uganda.

³ The SPA survey notes that all poverty reduction support credits (PRSC) from the World Bank were disbursed on time. Experience with PRSCs is also reviewed in a stocktaking paper (World Bank, 2005).

⁴ The macroeconomic framework under PRGF-supported programs is a crucial determinant for overall spending levels, tax targets, and financing needs.

behavior. The data are measured consistently in a unified setting of macroeconomic and fiscal accounts thereby avoiding potential inconsistencies between donor-reported data on aid flows and the national and fiscal accounts of recipient countries. On this basis, we are able to test whether information available to country authorities and IMF staff allows better prediction of outturns than information on donor commitments alone. We also investigate how governments adjust to deviations from original budget aid projections and thereby are able to study for the first time some of the costs of lack of predictability.

The following section describes the dataset and its main characteristics. Section III explores different aspects of budget aid predictability by country, region, and over time. It also discusses potential costs from low predictability as displayed by the data. The final section concludes and provides areas for future research.

II. Data on Budget Aid

In order to gauge some characteristics on the predictability of budget aid, we explore projections and outturns reported in IMF staff reports from 1992 to 2004 for a sample of eight African countries.⁵ The selected countries are characterized by (i) long-term program relations with the IMF, albeit not always without minor program interruptions or delays; (ii) relatively large external aid flows; and (iii) receipt of at least one poverty reduction support credit from the World Bank, with the exception of Mali, which instead received large World Bank adjustment aid flows in 2001-03. These countries thereby provide consistent data for disbursement projections and are receiving budget aid from a variety of donors in a medium-term programmatic framework defined by the PRSP, as also evidenced by their inclusion in the recent SPA survey. It would therefore be reasonable to expect that the most important progress with predictability of budget aid could be observed in these countries.

In constructing the dataset, we took care to the largest extent possible to identify IMF projections that would underpin decisions for the government's budget of the following year. In line with our definition of predictability, this choice has been made to simulate to the best extent possible the information set available to policymakers and IMF staff at that time. Untied general budget aid, which helps closing the fiscal gap and thereby is central for financing IMF programs, receives fairly great attention in projections, presumably resulting in maximum use of information on the volume and likelihood of disbursements. We usually choose projections established between zero and six months before beginning of the budget year. However, in a few cases we went as far as using the staff report finalized three months after the beginning of the government's fiscal year to avoid using projections that were established more than 12 months before the beginning of the budget year.⁶

It should be noted that IMF projections may differ from countries' actual budgetary frameworks. Although in recent years much care has been taken to more fully align IMF

⁵ Staff reports that were consulted for this paper are listed in an annex.

⁶ The number of the originating staff report has been recorded in the database to be able to trace the origin of each projection.

programs with countries' budgets, for political reasons budgetary expenditure and revenue projections have in the past often exceeded those agreed under IMF programs. Nonetheless, in most cases Ministers of Finance have used their powers to restrict spending items in order to stay within IMF program targets, and thus programs agreed with the IMF were usually the guiding post for budget implementation.

In our dataset, we contrast projections for a variety of variables with outturn data for the same variables. Outturn data are usually drawn from the latest staff reports reporting on that year in order to ensure that original preliminary data have been firmed up. The data include a consistent set of information on fiscal revenue, current and capital spending, as well as financing items. By drawing on these items from internally consistent fiscal accounts, we assure that we can identify how governments adapted to changes between projection and outturns. For a few years, we were unable to derive projection and outturn data for lack of sufficiently detailed fiscal data. Notably, for 1993-1997 in Ghana and 1994-1997 in Mozambique, the break-down between budget aid and project aid was not reported. Overall, we obtain 84 observations for the dataset.

In compiling our dataset, we corrected and adapted the raw data from the staff reports as follows:

- In a few cases a financing gap was reported in the projection without direct indication how it would be filled. In these cases, we first lowered the gap by expected debt relief that could be obtained from other external financing tables or the text of the report and then distributed the remainder among budgetary grants and loans in accordance with historical patterns.
- In some cases, project grant information had to be derived from other variables, such as foreign-financed investment spending and project lending contained in fiscal and balance of payment data.
- We reclassified certain expenditure and financing categories to derive a fairly small set of consistent fiscal accounts across countries and time. For example, privatization was consistently classified as non-bank financing, arrears were treated as a separate category from domestic or external financing, and debt relief, including all relief under the HIPC Initiative, was treated as external financing item.
- Large commercial bank restructuring spending, which entered fiscal accounts simultaneously as expenditure and financing items, were omitted.
- Obvious arithmetic errors in fiscal accounts were corrected, if needed by including discrepancies in the non-bank financing item.
- For fiscal accounts reporting a discrepancy between above and below the line items, we included this discrepancy in non-bank financing.

In order to ensure comparability of data across countries and across time, we normalize all data originally collected in nominal values and local currency by actual GDP as reported in the IMF staff reports. This normalization in our dataset gives a larger weight

to shortfalls of aid if the shortfall is important relative to a country's GDP.⁷ It also avoids other potential problems related to exchange rate conversions that would be necessary for other data presentations, such as reporting in US\$ values.

The interpretation of our data is fairly straightforward given that they relate directly to differences within the same consistent fiscal framework. Differences between actual budget aid disbursements and original targets, both expressed in terms of actual GDP, can be attributed to aid disbursement shortfalls or excesses as well as possible variations in exchange rates for which donors do not compensate.

Projections lay out expected values for aid, revenue, spending, and domestic financing in local currency established before the beginning of the budget year by country authorities and IMF staff. They reflect commitments made by donors as well as judgments by the authorities as regards the likelihood of disbursements. For example, governments may anticipate delays in meeting certain conditions or processing requirements, and this information may not be available to donors. Similarly, a country may discount a variable disbursement related to performance if it finds full attainment of targets to be unlikely. Given that, under normal circumstances, IMF reviews take place every six months, IMF programs can revisit these targets during implementation and original projections may not necessarily coincide with final IMF program targets for the whole year. However, original projections would usually drive original fiscal planning, even if not officially.

Governments need to adjust to shortfalls or excesses in aid disbursements. Responding to budget aid shortfalls could force the government to collect more revenue, cut spending, or obtain more domestic financing unless other financing sources such as debt relief substitute for budget aid. Similarly, excess disbursements could substitute for tax revenue, result in expenditure increases, or lead to repayment of domestic debt. Under IMF programs, governments are typically given some ability to increase domestic borrowing in case of aid shortfalls. By contrast, typically all excess aid disbursements need to be saved. Our dataset is able to trace government responses through projected and actual fiscal accounts as well as identify potential asymmetries related to IMF "adjusters" that describe how countries can deviate from original program targets in case of aid shortfalls or excess aid.

As shown in Figure 1, in most countries selected for this study, total aid flows as a share of GDP have not increased since the adoption of poverty reduction strategy papers (PRSP) and project aid remains the predominant form of aid. Aid inflows vary from 4 percent of GDP in recent years in Benin to almost 20 percent of GDP in Mozambique. However, only Uganda and Tanzania show a fairly significant increase in overall aid volumes since 1999-2000, and this picture does not change if debt relief under the HIPC Initiative is reflected in the aid figures. Moreover, with the exception of Uganda and Tanzania, project aid remains the predominant aid delivery mechanism, particularly in member countries of the West-African Monetary and Economic Union (WAEMU).

⁷ By contrast Bulir and Hamann (2003) report on shortfalls from the survey of IMF desk economists as a percentage of IMF program projections, thereby giving equal weight to each percentage point of nominal US\$ aid shortfall.

The eight countries have remarkably different patterns of budget aid delivery over time. Notable characteristics are the large budget aid inflows in the WAEMU member countries after the 50-percent devaluation of the CFA franc in 1994; the increase and stabilization of budget aid in Burkina Faso (at about 3.5 percent of GDP) and Uganda (at about 5 percent of GDP) since 2000; the large scaling up of budget aid in Tanzania from about 2 percent to 5.5 percent of GDP since 1999; and the decline of the importance of budget aid in Benin and Senegal in recent years.

III. Budget Aid Flows: How Unpredictable Are They?

Average budget aid disbursements as a share of GDP have only been slightly smaller than projected – and since 2000 on average aid disbursements as a share of GDP have exceeded projections. During 1993-2004 actual disbursements were by 0.14 percent of GDP smaller than predicted on average (Table 1). Splitting the sample into pre-PRSP (1993-1999) and post-PRSP periods (2000-2004) shows that on average budget aid disbursement fell short of budget aid projections by 0.34 percent of GDP in the earlier years, but since 2000 budget aid disbursements on average have exceeded projections by 0.1 percent of GDP.⁸

Notwithstanding the relatively favorable picture regarding aggregate deviations of budget aid disbursements from projections, both negative and positive projection errors can still be large and thus impose burdens on budget management. On average, the mean absolute error in projecting aid has been about 1 percent of GDP during 1993-2004, indicating that on average disbursed aid differed by 1 percent of GDP from projections. Errors have declined only little from 1.13 percent of GDP during 1993-99 to 0.95 percent of GDP during 2000-04. Similar information is conveyed by the standard deviation of the differences between aid projections and disbursements reported in the third column of Table 1..

The findings from comparing IMF projections and disbursements overall are broadly consistent with the 2005 SPA survey results. The survey showed that 80 percent of commitments are disbursed and an additional 10 percent of disbursements are postponed rather than lost. If projections for the following year are established by the third quarter of the previous year, a postponed disbursement could lead to an overstatement of aid in the current year and an understatement in the following year. On average, given the trend rise in GDP over time by which our aid flows are divided, one could expect that postponed disbursements should result in a slightly negative average deviation of actual disbursements from projected figures. However, the average positive deviation in recent years would point to some additional discounting of aid flows in recent projections.

⁸ We also calculated the average of the percentage deviations of budget aid disbursements from projections in line with the treatment of the survey of IMF economists by Bulir and Hamann (2003). We found that the equivalent index would be 114, indicating that on average budget aid disbursements exceed projections by 14 percent. By contrast, Bulir and Hamann (2003) report an index of 74 for program aid in countries without program interruptions, indicating an average 26 percent disbursement shortfall.

Aggregate figures mask considerable variation between countries, as also illustrated in Figure 2. For some countries, both average deviations and absolute errors have declined, indicating that projections have better captured overall aid volumes and reduced the error in predicting the timing of disbursement. Benin and Burkina Faso fall into that category. In Tanzania, average deviations have declined but prediction errors have remained large, indicating remaining difficulties in pinning down the timing of disbursements. In Senegal and Mali, average deviations increased while prediction errors remained largely unchanged – in Mali this can be attributed to the large unanticipated additional transfers following the cotton crisis (2001) and Ivorian crisis (2003), whereas shortfalls in Senegal were related to delayed reforms in 2001-2002. Surprisingly, in Uganda both average deviations as well as errors have increased in recent years. In Mozambique, projections have consistently understated disbursement volumes pointing to deficiencies in communicating aid volumes. In terms of country groups, WAEMU member countries tend to have somewhat smaller projection errors – a fact that may point to the better local-currency aid projections as a result of the peg of the CFA franc to the euro, which is the currency for aid disbursements by the European Commission (EC) and most bilaterals.

Regressing aid disbursements on projections underscores a strong relationship between projections and outturns. In Table 2, report results of a simple regression of disbursed aid on projections. In line with averages discussed above, for the whole sample we find that, as a share of GDP, disbursements are 11-12 percent smaller than projections, with a 95-percent confidence interval ranging from 0.80 to 0.97. The findings correspond also fairly well to the magnitude of “lost disbursements” in the SPA survey. Projections explain 87 percent of the variation in disbursements, which overall is not a bad record.

Another issue we can tackle with the dataset is the much-debated question whether aid or tax revenue are more stable in African countries. Collier (1999) provided some evidence that US\$-denominated tax revenue flows were equally unstable as aid. We take a related approach below in comparing deviations between projections and outturns for both aid and tax revenue in Table 1.

Deviations of tax revenue outturns from projections have been small at less than 0.1 percent of GDP, but projection errors on average have still been important at 0.8 percent of GDP. Errors in projecting tax revenue as a share of GDP have been consistently smaller by about 20 percent than errors made in projecting budget aid disbursement, indicating a higher overall “predictability” of tax revenue compared with budget aid in contrast to the argument put forth by Collier (1999). Average projection errors have declined substantially to 0.65 percent of GDP during 2000-04, from 0.9 percent of GDP during 1993-1999.

Overall, what emerges from the statistical evidence is that budget aid flows as share of GDP remain difficult to predict and tend to be less predictable than tax revenue. However, there are also some signs of improvement both in declining average deviations as well as average prediction errors. Nonetheless, successes vary across countries with

some countries facing increasing difficulties to predict budget aid and thus manage budget execution.

The Sahelian neighbors Burkina Faso and Mali give a quite vivid impression of the potential benefits of harmonized budget aid. Based on an early adoption of the PRSP in 2000, several bilateral donors, the EC and the World Bank moved to provide regular annual budget support to Burkina Faso since 2001 and jointly pre-announced their forthcoming disbursements in the context of the annual PRSP review. Predictability of budget aid improved and the remaining volatility of budget aid in 2001-2004 can be largely ascribed to the uncertain timing of disbursements by the African Development Bank and to a fairly minor extent to the size of the EC's variable performance tranche.⁹ By contrast, Mali suffered from recurrent financial pressures related to the cotton sector and the Ivorian crisis resulting in a "wait-and-see" attitude of many budget support donors. Although Mali eventually mobilized more budget aid than originally projected, this aid has not been predictable or stable and was used largely to cover additional recurrent spending, such as transfers to the cotton company. Macroeconomic and budget management in Mali therefore remain subject to much larger uncertainties.

IV. Errors in Projecting Budget Aid: How Do Governments Adjust?

The main objective of enhanced predictability of budget aid is to allow smooth budget implementation and avoid the costs associated with abrupt adjustment of expenditure or increased domestic borrowing. In order to assess the degree to which aid shortfalls or excess aid are absorbed by governments, we divide the sample into episodes of aid shortfalls and episodes of excess aid. This split of the sample is also in line with the normally asymmetric treatment of aid flows by IMF programs (so-called program adjusters). Under IMF programs, usually aid shortfalls can be substituted with increased domestic borrowing up to a certain limit whereas excess aid cannot be spent. However, given that our sample relies on early projections that can normally still be revised at a subsequent IMF program review or program deviations may be waived at a later date, we do not expect that our data fully reflects this asymmetry.

We decompose the adjustment into changes in tax revenue, current spending, domestically financed investment spending, domestic bank financing, net amortization and other (Table 3 and 4).¹⁰ The "other" category mostly reflects non-tax revenue and nonbank financing items, as well as net lending out of domestic resources. All categories are measured as deviations from projections, as a share of GDP, with positive items reflecting outturns that exceed projections.

⁹ Although the exact size of the performance tranche was usually unknown at the beginning of the budget year, historical data allowed to fairly accurately project a disbursement rate of 66-70 percent. See also European Commission (2005).

¹⁰ As an accounting convention, foreign financed investment spending corresponds to project aid disbursements. Thus, fluctuations in budget aid would be reflected in adjustments to domestically financed investment spending.

On average, governments access additional Bank financing and cut domestically financed investment spending to cope with budget aid shortfalls. For the whole sample, shortfalls average about 1.1 of GDP and are fairly close matched by higher Bank financing (0.8 percent of GDP) and lower domestically financed investment spending (0.4 percent of GDP). Assuming foreign aid inflows are not sterilized, a fairly intuitive first cut at the costs associated with aid shortfalls would be higher government borrowing costs and crowding out of other domestic borrowing (amounting to about two-thirds of the aid shortfall) and economic impact of lower public investment (about one-third).¹¹

Unfortunately, aid shortfalls are also associated with tax revenue shortfalls and current expenditure overruns that run counter to a straightforward identification of the cost of adjustments to lower aid. In fact, in practically all episodes of budget aid shortfalls, the latter are accompanied by substantial tax revenue shortfalls as well. For the whole sample, on average a 1.1 percent of GDP shortfall is accompanied by a 0.3 percent tax revenue shortfall. For some countries, episodes of aid shortfalls show equally large tax revenue shortfalls (Ghana, Mali, and Tanzania). One explanation could be that budget aid is procyclical in line with empirical studies of aid by Gemmell and McGillivray (1998) and Pallage and Robe (2001). That is, poorer economic performance could be associated with both lower-than-projected aid outturns and lower-than-projected revenue outturns as a share of GDP. At the same time, in cases of aid shortfalls, government current spending on average exceeds projections by 0.4 percent of GDP. What is clear, however, is that on average governments need to address simultaneously aid shortfalls, tax revenue shortfalls, and current expenditure overruns. They do so largely, in order of magnitude, through higher domestic bank and other financing (1.3 percent of GDP), cuts in domestically financed investment spending (0.4 percent of GDP).

Structural differences between countries also result in strikingly different adjustment patterns for similar aid shortfalls. Non-WAEMU countries tend to have aid shortfalls that are associated with both larger tax revenue shortfalls (0.4 percent of GDP) and larger expenditure overruns (0.7 percent of GDP) than WAEMU countries. These are met by significant Bank financing (1.4 percent of GDP) and other financing (0.4 percent of GDP), as well as cuts in domestically financed investment (0.3 percent of GDP). By contrast, aid shortfalls in WAEMU countries tend to be associated with smaller tax shortfalls and current expenditure overruns. Domestic bank financing – constrained by the rules of the monetary union – plays a much smaller role in meeting financing needs with cuts in domestically financed investment (0.4 percent of GDP) being the most important source of adjustment.

Episodes of excess aid disbursements over projections largely result in repayment of domestic bank debt as well as faster reduction of arrears. This adjustment would appear to be largely in line with IMF program adjusters. Figures for the whole sample reveal that episodes of excess aid also are associated with higher-than-projected tax revenue – again with the possibility that aid and taxes reflect procyclicality. Excess aid also is associated with higher-than-projected current expenditure of only slightly higher magnitude than in

¹¹ The impact of higher domestic bank financing on inflation would be identical to those of foreign resource inflows if the latter are not sterilized.

episodes of aid shortfalls, thus understatement of recurrent spending seems a common feature of all projections in our sample.

Regarding the differences between WAEMU and non-WAEMU countries, excess aid in non-WAEMU countries results in lower domestic debt reimbursement and instead helps accommodate the larger current expenditure overruns. In WAEMU countries excess aid episodes see declines in debt to domestic banks that exceed excess aid. However, WAEMU countries also also engage in excess recurrent spending.

What emerges as a first clear message from comparing periods of excess aid and aid shortfalls is that the bulk of adjustments takes place in domestic bank financing, arrears, and domestically financed investment expenditure. By contrast, there are only limited differences for the projection errors for recurrent expenditure, amortization, and other financing. Stronger reliance on domestic bank financing/arrears and lower investment rates would therefore be the most likely costs associated with aid shortfalls.

Second, it is also apparent that deviations in aid from projections are exacerbated by deviations in tax revenue. Aid shortfalls as a share of GDP on average are accompanied by tax revenue shortfalls. By contrast, excess aid comes alongside higher-than-projected tax-to-GDP ratios. The relationship between aid flows and tax revenue projections warrants further study in the future.

Third, whereas there are consistent current expenditure overruns, periods of excess aid and tax revenue are not used to accelerate domestically financed investment spending to potentially “catch up” with previous shortfalls. This finding is important since it signifies that aid volatility may have permanent costs in terms of lost output: whereas domestic financing overruns can and are being reversed if aid disbursements are delayed between budget years, excess aid does not seem to result in a catching up with delayed domestically financed investments.

V. Intra-Year Predictability of Budget Aid

Governments need to manage their cash-flows within any given budget year. Domestic financing constraints may make it difficult to smooth fluctuations on disbursements during any given year, especially if budget aid is large relative to tax revenue. Unfortunately, IMF staff reports only allow offer an incomplete look at this issue as they do not systematically report quarterly projections and outturns. However, in the case of Burkina Faso and Mali, performance criteria tables permitted to reconstruct not only the series of actual disbursements but also quarterly projections.

Figure 3 illustrates to which extent budget aid disbursement were back loaded and how disbursement patterns changed over time in Mali and Burkina Faso. Until 2001, Burkina Faso received 80-90 percent of its annual budget aid during the last quarter of the year. Since then, as budget aid has increased in predictability, donors also have made an effort to more evenly spread disbursements over the budget year. Still, only in 2004 did the bulk of disbursements move from the fourth to the third quarter. For Mali, by contrast, a

rather smooth disbursement pattern of budget aid in the mid-1990s has been replaced since 2000 by a pattern under which 90 percent or more of disbursements are made in the last quarter. As noted above, these developments can be largely attributed to the diverging paradigm of budget aid in both countries, with a reluctance of donors to move to regular and predictable budget support in Mali. Potential gains to be reaped from moving from a “structural adjustment” to a “budget support” paradigm of budget aid thus go beyond the size of resource flows.

To the extent that disbursement of budget aid within the budget year remains uncertain, drawing on Bank financing or accumulating payment backlogs while awaiting aid carries large risks of undermining macroeconomic instability and thereby deviation from program targets. Comparing projections of quarterly budget aid disbursements and actual outturns reveals that in both countries – even when for the year as a whole outturns exceeded projections – in most cases disbursements during the first three quarters fell significantly short of projections (often between 30 and 100 percent), and thus made it very difficult to assure smooth execution of the budget without accessing other financing sources. Fiscal accounts reveal that shortfalls in budget aid often resulted in slow-downs in budget execution, notably for domestically financed investment spending. Additional gains for managing the budget could therefore be achieved by further limiting intra-year variability of budget aid disbursements. The latter appears to be easier within coordinated budget aid settings.

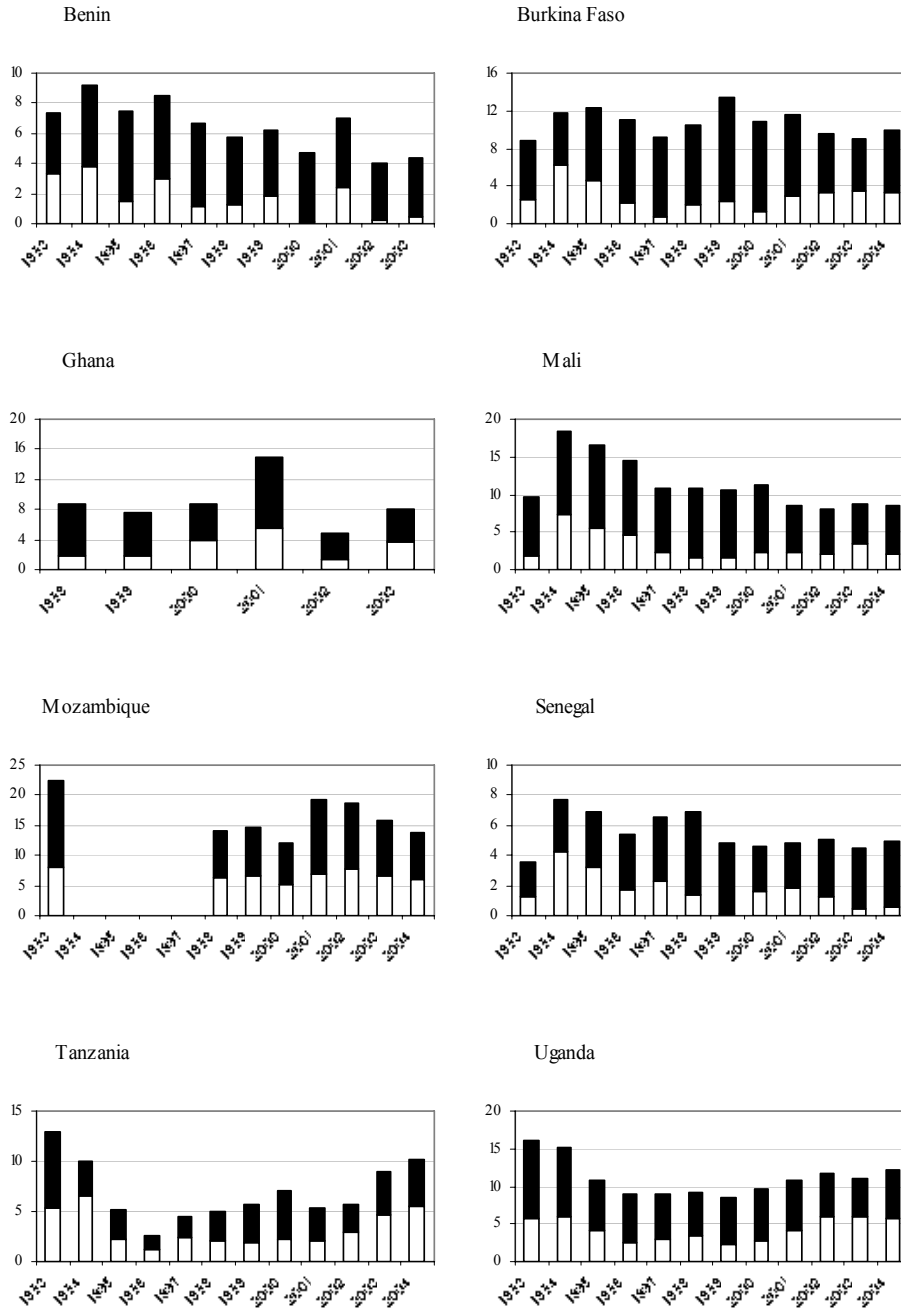
VI. Conclusions

Drawing on a novel dataset of projections and outturns derived from IMF staff reports, this paper cast some new light on predictability of budget aid in eight African countries with long-term IMF involvement. Measured as a share of GDP, budget aid projections deviate by about 0.1-0.2 percent from outturns during 1993-2004. Over the same time period, projection errors (positive and negative) were about 1 percent of GDP, and they have declined somewhat in recent years. Country examples point to potential gains that can be achieved in this regard in settings that emphasize regular annual budget support, and rely on strong donor coordination frameworks.

The costs of predictability emerging from the adjustment patterns to aid shortfalls and excess aid disbursements suggest that domestic financing and domestically financed investment spending play a large role in coping with projection errors. However, whereas there appears to be some reversal of higher domestic financing in periods with excess aid disbursements, cuts in investment spending appear to be permanently lost and thereby constitute the most important cost of unpredictable budget aid.

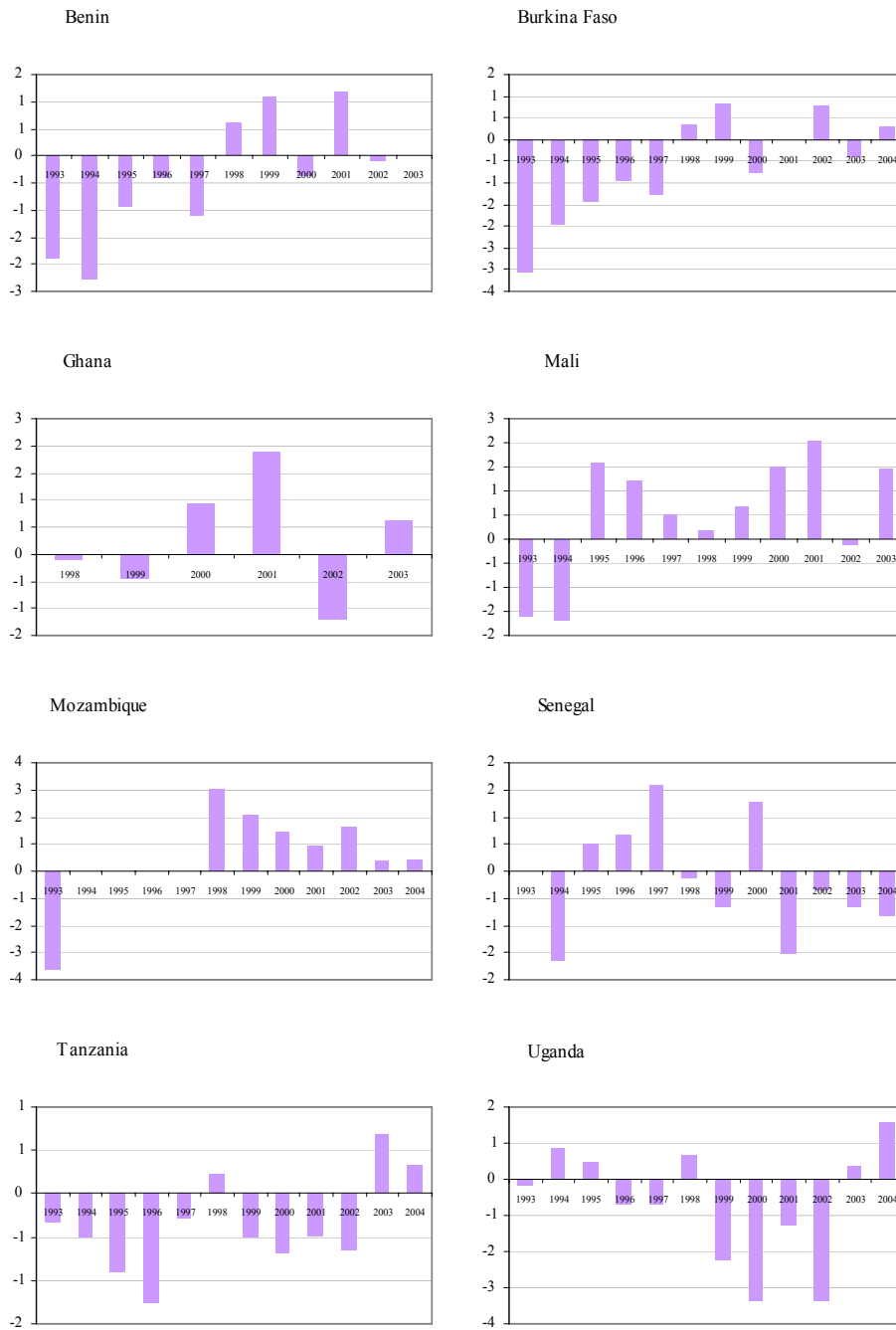
Intra-year predictability remains an important issue for countries facing external financing constraints. It appears that coordinated budget support frameworks are likely to also improve the intra-annual disbursement patterns to avoid the typical “year-end rush” of aid disbursements. Reaping these gains, however, is predicated by creating the environment for a reliable medium-term engagement of budget support donors.

Figure 1. Program versus Project Aid, percent of GDP
 (□ Budget Aid ■ Project Aid)



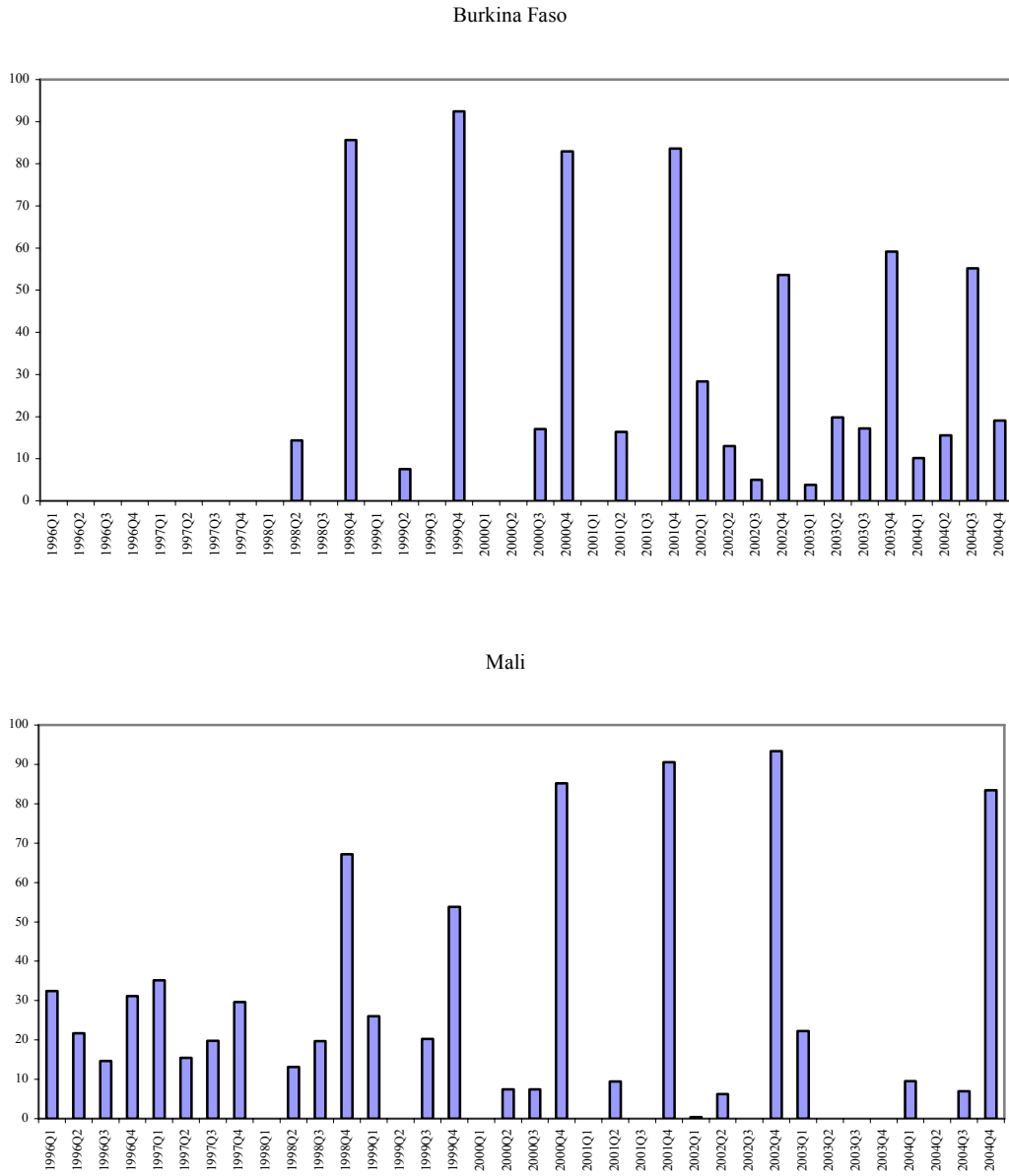
Source: Authors Calculations based on IMF Staff Reports, various issues.

Figure 2. Deviations Between Actual and Projected Budget Aid, percent of GDP



Source: Authors' calculations based on IMF Staff Reports, various issues.

Figure 3. Burkina Faso and Mali: Percent of Annual Disbursements



Source: Authors' calculations based on IMF Staff Reports, various issues.

Table 1. Budget Aid and Tax Revenue Deviations from Projections, percent of GDP

	Budget Aid Projections			Tax Revenue Projections		
	Average Deviations	Mean Absolute Projection Error	Standard Deviation	Average Deviations	Mean Absolute Projection Error	Standard Deviation
<u>Benin</u>						
1993-2003	-0.38	0.90	1.12	0.61	0.66	0.74
1993-1993	-0.70	1.18	1.23	0.88	0.88	0.78
2000-2003	0.17	0.41	0.69	0.13	0.27	0.39
<u>Burkina Faso</u>						
1993-2004	-0.63	1.01	1.18	-0.34	0.88	1.13
1993-1999	-1.07	1.40	1.32	0.00	0.93	1.36
2000-2004	-0.01	0.46	0.61	-0.82	0.82	0.51
<u>Ghana</u>						
1993-2004	0.28	0.87	1.10	0.60	1.24	1.61
1993-1999
2000-2004	0.56	1.17	1.30	1.26	1.51	1.60
<u>Mali</u>						
1993-2004	0.48	1.05	1.20	-0.29	0.88	1.10
1993-1999	0.12	1.06	1.29	-0.01	0.97	1.17
2000-2004	0.99	1.03	0.96	-0.69	0.75	0.95
<u>Mozambique</u>						
1993-2004	0.81	1.71	1.99	0.39	0.76	1.33
1993-1999	0.54	2.93	3.60	1.14	1.27	2.00
2000-2004	0.98	0.98	0.58	-0.06	0.46	0.63
<u>Senegal</u>						
1994-2004	-0.16	0.89	1.06	-0.21	0.64	0.94
1994-1999	0.05	0.87	1.13	-0.33	0.68	1.06
2000-2004	-0.42	0.92	1.04	-0.05	0.59	0.86
<u>Tanzania</u>						
1993-2004	-0.37	0.57	0.55	-0.51	0.99	1.81
1993-1999	-0.51	0.58	0.48	-1.06	1.38	2.24
2000-2004	-0.17	0.57	0.63	0.26	0.44	0.44
<u>Uganda</u>						
1993-2004	-0.67	1.32	1.64	-0.20	0.41	0.53
1993-1999	-0.27	0.84	1.08	-0.09	0.40	0.48
2000-2004	-1.23	2.00	2.22	-0.36	0.44	0.61
<u>Whole Sample</u>						
1993-2004	-0.14	1.03	1.31	-0.06	0.78	1.20
1993-1999	-0.34	1.13	1.33	-0.04	0.90	1.39
2000-2004	0.10	0.95	1.25	-0.08	0.65	0.94
<u>WAEMU</u>						
1993-2004	-0.17	0.97	1.18	-0.07	0.77	1.04
<u>Non-WAEMU</u>						
1993-2004	-0.11	1.10	1.46	-0.05	0.80	1.39

Note: Projections are usually established in the three to six month period before the start of the budget-year.

Source: Authors' calculations based on IMF Staff Reports, various issues.

Table 2. Regressions of Actual Budget Aid on Projected Budget Aid

	Coefficient	Robust Standard Error	95% Confidence Interval	R-Squared	Number of Observations
Whole Sample	0.884	0.042	[0.801 , 0.968]	0.87	84
Benin	0.695	0.052	[0.581 , 0.810]	0.88	11
Burkina Faso	0.770	0.061	[0.635 , 0.905]	0.93	12
Ghana	1.149	0.165	[0.724 , 1.574]	0.92	6
Mali	0.972	0.123	[0.700 , 1.244]	0.87	12
Mozambique	1.01	0.173	[0.601 , 1.420]	0.81	8
Senegal	0.778	0.081	[0.597 , 0.959]	0.82	11
Tanzania	0.924	0.038	[0.839 , 1.009]	0.98	12
Uganda	0.819	0.089	[0.623 , 1.014]	0.90	12

Table 3. Decomposition of Budget Aid Shortfalls Relative to Projections into Revenue and Expenditure Adjustments, percent of GDP

		Average Budget Aid Shortfall	Tax Revenue	Current Expenditure	Domestically Financed Investment Expenditure	Domestic Bank Financing	Arrears	Amortization Net of Rescheduling and Debt Relief	Other	Number of Observations
<u>Benin</u>	1994-2003	-1.0	0.8	0.3	-0.4	0.2	-0.8	-0.3	0.4	7
<u>Burkina Faso</u>	1993-2004	-1.2	-0.7	0.2	-0.9	0.7	0.1	-0.2	0.3	8
<u>Ghana</u>	1993-2004	-0.6	-0.6	1.8	-0.6	0.7	-0.5	-0.3	2.0	3
<u>Mali</u>	1993-2004	-1.1	-1.1	0.4	-0.4	0.2	0.8	-0.2	1.0	3
<u>Mozambique</u>	1993-2004	-3.6	3.4	-1.1	1.3	2.3	-0.3	0.6	-1.0	1
<u>Senegal</u>	1994-2004	-0.8	-0.4	-0.1	0.0	-0.2	0.3	-0.3	0.8	7
<u>Tanzania</u>	1993-2004	-0.6	-0.7	1.2	-0.7	1.6	-0.2	-0.2	0.2	9
<u>Uganda</u>	1993-2004	-1.7	-0.4	-0.2	-0.1	1.4	0.1	-0.1	0.2	7
<u>Whole Sample</u>	1993-2004	-1.1	-0.3	0.4	-0.4	0.8	-0.1	-0.2	0.5	45
<u>WAEMU</u>	1993-2004	-1.0	-0.2	0.2	-0.4	0.2	0.0	-0.3	0.5	25
<u>Non-WAEMU</u>	1993-2004	-1.1	-0.4	0.7	-0.3	1.4	-0.1	-0.1	0.4	20

Note: A positive signifies that the outcome exceeds the projection, a negative signifies a shortfall of the outcome compared to projection.
Source: Authors' calculations based on IMF Staff Reports, various issues.

Table 4. Decomposition of Excess Budget Aid into Revenue and Expenditure Adjustments, percent of GDP

		Average Excess Budget Aid	Tax Revenue	Current Expenditure	Domestically Financed Investment Expenditure	Domestic Bank Financing	Arrears	Amortization Net of Rescheduling and Debt Relief	Other	Number of Observations
<u>Benin</u>	1994-2003	1.0	0.4	-0.7	0.1	-2.2	-1.4	-0.9	0.5	3
<u>Burkina Faso</u>	1993-2004	0.8	0.5	0.4	0.3	-1.2	0.1	0.0	0.5	4
<u>Ghana</u>	1993-2004	1.2	1.8	3.9	0.2	0.7	-1.6	-0.3	1.8	3
<u>Mali</u>	1993-2004	1.0	0.0	0.7	0.1	-0.8	0.0	-0.1	0.4	9
<u>Mozambique</u>	1993-2004	1.4	0.0	0.0	-0.1	-0.7	-0.1	-0.2	-0.8	7
<u>Senegal</u>	1994-2004	1.0	0.2	0.4	0.0	-1.8	-0.5	-0.6	0.9	4
<u>Tanzania</u>	1993-2004	0.4	-0.1	0.0	0.0	-0.6	-0.1	-0.2	0.2	3
<u>Uganda</u>	1993-2004	0.8	0.1	0.1	-0.1	-1.0	0.0	0.0	0.1	5
<u>Whole Sample</u>	1993-2004	1.0	0.2	0.5	0.0	-0.9	-0.3	-0.2	0.3	38
<u>WAEMU</u>	1993-2004	0.9	0.1	0.4	0.1	-1.1	-0.3	-0.3	0.5	20
<u>Non-WAEMU</u>	1993-2004	1.0	0.3	0.7	0.0	-0.5	-0.3	-0.1	0.0	18

Note: A positive signifies that the outturn exceeds the projection, a negative signifies a shortfall of the outturn compared to projection.

Source: Authors' calculations based on IMF Staff Reports, various issues.

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Burkina Faso: EBS/94/189; EBS/95/213; EBS/96/85; EBS/97/13; EBS/97/154; EBS/98/75; EBS/98/142; EBS/99/68; EBS/99/162; EBS/00/84; EBS/00/285; EBS/01/84; EBS/01/182; EBS/02/48; EBS/02/183; EBS/03/68; EBS/04/34; EBS/05/24.

Ghana: EBS/95/76; EBS/96/89; EBS/98/46; EBS/98/193; EBS/99/57; EBS/99/200; EBS/00/160; EBS/01/88; EBS/02/16; EBS/03/42; EBS/03/161; EBS/04/82.

Mali: EBS/94/186; EBS/95/35; EBS/95/160; EBS/96/49; EBS/96/169; EBS/97/65; EBS/97/228; EBS/98/127; EBS/99/9; EBS/99/129; EBS00/162; EBS01/113; EBS/01/204; EBS/02/127; EBS/03/16; EBS/03/92; EBS/04/64; EBS/05/20.

Mozambique: EBS/92/81; EBS/92/178; EBS/93/111; EBS94/101; EBS/95/66; EBS96/80; EBS/97/10; EBS/97/97; EBS98/57; EBS/98/138; EBS/99/55; EBS/99/96; EBS/00/50; EBS/00/250; EBS01/155; EBS02/93; EBS/03/75; EBS/04/77; EBS/05/12.

Senegal: EBS/94/150; EBS/95/80; EBS/95/183; EBS/96/92; EBS/96/200; EBS/97/130; EBS/98/68; EBS/98/188; EBS/99/114; EBS/00/95; EBS/01/9; EBS/01/151; EBS/02/50; EBS/03/49; EBS/04/9; EBS/05/28.

Tanzania: EBS/94/82; EBS/94/210; EBS/96/165; EBS/97/63; EBS/97/209; EBS/98/113; EBS/99/5; EBS/99/126; EBS/00/44; EBS/00/147; EBS/01/26; EBS/01/153; EBS/02/56; EBS/02/187; EBS/03/100; EBS/04/19; EBS/04/108.

Uganda: EBS/93/172; EBS/94/157; EBS/95/62; EBS/95/173; EBS/96/61; EBS/96/170; EBS/97/67; EBS/97/191; EBS/98/58; EBS/98/183; EBS/99/149; EBS/99/212; EBS/00/176; EBS/01/33; EBS/02/163; EBS/03/79; EBS/03/160; EBS/04/106; EBS/05/14.