# Financing primary education for all: public expenditure and education outcomes in Africa

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**Preface**

The international development target of achieving primary Education for All (EFA) by 2015, which has recently been reaffirmed, contrasts sharply with experience in sub-Saharan Africa (SSA), where education enrolments and quality in about half of the countries in the region have deteriorated since 1990. It appears that, in some cases, this has been caused by underspending by governments on primary schooling, but in others, the unit costs of schooling are high, and reforms to change cost structures are required to make EFA affordable.

Education coverage in SSA is not only partial, but also its quality is highly variable from place to place. Even where all, or most, children are enrolled, levels of repetition, completion and student achievement appear to vary enormously between countries. The development targets are articulate about quantity, but rather less so about school quality, notwithstanding the importance attributed to this by the Jomtien and Dakar discussions, and by governments and donors alike. This is partly because it is easier to measure school inputs than outputs. There is little agreement about how quality variables can best be proxied as targets for policy. Even the relationships between public spending and the quantitative performance of school systems are not yet completely clear. Some countries which allocate lower than the regional average proportion of gross domestic product (GDP) to primary schooling achieve high enrolments; in others, the opposite seems to hold.

This synthesis report presents the main findings from a research project aiming to explore the relationship between public education spending and education outcomes at the primary level in developing countries. The report explores this relationship from a cross-country perspective before concentrating on three African countries – Botswana, Malawi and Uganda. These case studies provide important insights into how primary school expansion has been achieved from a financing perspective and practical lessons for other African countries attempting to achieve EFA. Country case study reports are also available.

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**Abbreviations**

| | |
|---|---|
| ARDP | Accelerated Rural Development Programme |
| BDP | Botswana Democratic Party |
| CIDA | Canadian International Development Agency |
| CRS | Creditor Reporting System |
| DANIDA | Danish International Development Agency |
| DDP | District Development Plans |
| DFID | Department for International Development, UK |
| EFA | Education For All |
| EMIS | Education Management Information System |
| ESIP | Education Strategic Investment Plan |
| FPE | Free Primary Education |
| GABLE | Girl's Attainment of Basic Literacy and Education |
| GDP | Gross Domestic Product |
| GER | Gross Enrolment Ratio |
| GNI | Gross National Income |
| GNP | Gross National Product |
| HIPC | Heavily Indebted Poor Countries |
| IAEP | International Assessment of Educational Progress |
| IEA | International Association for the Evaluation of Educational Achievement |
| KfW | Kreditanstalt für Wiederaufbau |
| MCP | Malawi Congress Party |
| MDGs | millennium development goals |
| MFDP | Ministry of Finance and Development Planning, Botswana |
| MFPED | Ministry of Finance, Planning and Economic Development, Uganda |
| MIITEP | Malawi Integrated In-Service Teacher Education Programme |
| MLA | monitoring learning achievement |
| MLG | Ministry of Local Government, Botswana |
| MoE | Ministry of Education, Botswana |
| MoES | Ministry of Education and Sports, Uganda |
| MoESC | Ministry of Education, Sports and Culture, Malawi |
| MoF | Ministry of Finance, Malawi |
| MTBF | medium term budget framework |
| MTEF | Medium Term Expenditure Frameworks |

| | |
|---|---|
| NAPE | National Assessment of Progress in Education |
| NCE | National Commission on Education |
| NDP | National Development Plan |
| NER | Net Enrolment Ratio |
| NGO | Non-governmental Organisation |
| NPE | National Policy on Education |
| NRM | National Resistance Movement |
| OECD | Organisation for Economic Cooperation and Development |
| OLS | Ordinary Least Squares |
| PAC | Public Accounts Committee |
| PAF | Poverty Action Fund |
| PEAP | Poverty Eradication Action Plan |
| PIF | Policy Investment Framework |
| PPE | Protected Pro-poor Expenditure |
| PPP | Purchasing Power Parity |
| PSLE | Primary School Leaving Examination |
| PTA | Parent–Teacher Association |
| SACMEQ | Southern African Consortium for Monitoring Educational Quality |
| SSA | Sub-Saharan Africa |
| SWG | Sector Working Group |
| TIMSS | Third International Mathematics and Science Study |
| UDF | United Democratic Front |
| UIS | UNESCO Institute for Statistics |
| UNESCO | United Nations Educational, Scientific (and) Cultural Organisation |
| UPE | Universal Primary Education |
| USAID | United States Agency for International Development |
| WEF | World Education Forum |

**Abstract**

This report presents the main findings of a research project that explored the relationship between public education spending and education outcomes at the primary school level in developing countries. The report explores this relationship from a cross-country perspective before concentrating on three African case studies – Botswana, Malawi and Uganda. These case studies provide important insights into how universal primary education has been achieved from a financing perspective and practical lessons for other African countries attempting to achieve primary education for all. The research finds that the link between resources and education outcomes are weak and that the achievement of the MDGs and EFA targets will require more than just increases in expenditure on primary education. This is not meant to imply that increased resources are unnecessary, merely that they are unlikely to be sufficient for achieving the education goals. The composition of resources and institutions that govern the use of these resources plays a central role in translating resources into better schooling outcomes. The report demonstrates that improving the public expenditure management system is also important in strengthening the link between public spending and education outcomes. Furthermore, the report has shown that recent successes in improving access to primary education have predominantly been a demand-side phenomenon and improvements in education outcomes will only be sustainable if demand-side constraints to primary schooling are tackled. A stronger focus on these aspects of education systems will be required if the Millennium Development Goals in education are to be achieved

**Executive summary**

This report presents the main findings from a research project aiming to explore the relationship between public education spending and education outcomes at the primary school level in developing countries. The report explores this relationship from a cross-country perspective before concentrating on three African case studies – Botswana, Malawi and Uganda. These case studies provide important insights into how universal primary education (UPE) has been achieved from a financing perspective and practical lessons for other African countries attempting to achieve primary Education for All (EFA).

**Public education spending and education outcomes: the cross-country evidence**

The cross-country analysis undertaken in the report shows that the link between education outcomes and public education resources is at best weak. Three measures of resources were used and only per pupil expenditure appeared to be significant in explaining the cross-country variations in education outcomes. Even in this case the impact was small with large increases in per pupil spending leading to only minor improvements in primary school survival rates. Conversely, lower per pupil expenditure was associated with higher enrolment, but again very large changes in per pupil expenditure would be needed to effect very small changes on enrolment rates.

These results could be taken at face value to imply that resources are not important, and that increased resourcing will not lead to any marked improvements in education outcomes in developing countries. But this is counter-intuitive, given that increasing access to education to any significant extent evidently requires the building of new schools, training and remunerating new teachers, and providing additional textbooks and other important inputs. In this respect, improving education outcomes will clearly require increased spending. The report suggests that the lack of a relationship across countries between public spending and education outcomes may be due to three factors: poor data, the failure to account for other factors determining education outcomes (e.g. household spending) and differences in the efficiency of public spending across countries. The cross-country analysis makes it clear that country studies are required to unpack the relationship between public education expenditure and education outcomes. The rest of the report explores the relationship between public spending and education outcomes in Botswana, Malawi and Uganda, countries that have been successful in some aspects of universalising primary education.

**Universalising primary education in Botswana, Malawi and Uganda: education policy and trends**

The report shows that there are some similarities and differences in the evolution of the education system across the three countries. Botswana appears to be different in terms of the introduction of UPE and the impact UPE had on the education system. Primary school expansion in Botswana was continuous and the growth in primary enrolments was relatively steady. Enrolments at the beginning of the UPE drive were relatively high and future expansion was planned and thought through before policy announcements were made. Malawi was similar to Botswana in the sense that it had begun to adopt a gradual approach to the expansion of primary schooling but after the first multi-party elections this process was discontinued in favour of a much-accelerated programme that resulted in very large and unplanned increases in primary school enrolment. Uganda did not really have any strong policies in place on primary school expansion before the abolition of fees in 1997. However, similar to Malawi's situation, fulfilment of election promises led to a very large and unplanned increase in primary enrolment. In both these countries a direct result of UPE policies was a fundamental review of education sector priorities.

The introduction of UPE led to all three countries recording primary gross enrolment rates (GERs) well in excess of 100 per cent. Primary school expansion appears to have narrowed the gender gap in primary school access. While the capacity of primary education systems proved their ability to accommodate the whole of the school-age population many children of primary school age did not attend school. In fact it is only recently that Botswana has achieved net enrolment rates (NERs) close to 100 per cent. Malawi and Uganda have some way to go with approximately 20 per cent of the official school-age population still out of school. In terms of the Millennium Development Goals primary EFA will only be seen to be achieved when primary NERs reach 99 per cent. The experience of Botswana suggests that high GERs only translate into these levels of net enrolment after some considerable time (15–20 years). While Botswana may have some particular constraints to enrolling all primary-age children the challenge facing other SSA countries is substantial.

Very large increases in enrolment seen in Malawi and Uganda give rise to their own set of problems for the education system. The abolition of fees in these countries has led to a UPE 'bulge' cohort being produced. The size of this bulge cohort appears to be associated with the levels of enrolment pre-UPE. Owing to overage enrolment at the beginning of UPE a substantially larger cohort of students, compared to the official starting-age population, began primary schooling in the year fees were abolished. These students need to be accommodated in the system although it is clear that the cohort behind this bulge cohort will be much smaller. This implies that if ministries of education maintained pupil–teacher and pupil–classroom ratios at the pre-UPE level they would be left with spare capacity once this bulge

cohort passes through. Furthermore, teaching students of very different ages in the same class creates a completely different set of issues for teachers to confront. A common policy reaction to these realities has been to introduce measures that use education resources more efficiently and double-shifting of teachers and classrooms has been introduced to some extent in all countries. These policies have the added advantage of reducing the costs of the primary education system.

Education inputs have tended to be shared across more primary school pupils after the introduction of UPE. There seemed to be a positive correlation with the size of the enrolment expansion and the extent to which pupil–teacher, pupil–classroom and pupil–textbook ratios deteriorated. Botswana was much more successful in keeping these ratios to similar levels before the expansion. Given that the quantity and quality of education inputs are much higher in Botswana compared to Malawi and Uganda it would be expected that learning outcomes would be better in Botswana. There is only limited information on how learning outcomes have changed as primary school enrolment expanded. However, the limited information suggests that the quality of primary education has deteriorated as a consequence. Interestingly, one study suggests that differences in learning outcomes across the three countries are only slight and the large differences in internal efficiency and the supply of educational inputs do not appear to have made a significant impact on learning outcomes. This tends to confirm the cross-country results and implies that internal efficiency indicators are not particularly useful proxies of learning achievement in primary schools and that while monitoring internal efficiency in the context of achieving the EFA targets is important it is not sufficient. However, this finding needs to be treated with caution given the limited evidence on learning outcomes.

**Financing UPE in Botswana, Malawi and Uganda**

This report shows that the three countries began the expansion of their primary school systems from very different levels of resource availability. Botswana has consistently devoted a greater share of government spending and gross domestic product (GDP) to education than the other countries. The share of the government budget going to education has increased in Uganda and is now similar to the share devoted in Botswana and hence higher than the SSA average. In Malawi, however, education expenditure has been slow to grow and education spending as a proportion of government expenditure and GDP is low by SSA standards.

In Malawi and Uganda UPE was associated with a significant increase in spending on education as would be expected. There is evidence that specific sectors lost out because of this prioritisation of education. However, in Malawi and Uganda growth in real education expenditure was also matched by some other sectors, most notably health. Therefore, primary school expansion appears to have been introduced when social expenditure was also being

prioritised more broadly. This appears to be the case in Botswana as well. However, it does suggest that in all of the countries substantial shifts in budget allocations were possible. There is also some evidence to suggest that governments have not been able to sustain their initial commitments to the education sector. In Malawi education spending post-UPE has begun to decline and given the declines in quality associated with UPE this raises issues of sustainability.

Primary school expansion in Botswana was not achieved through the reallocation of education resources towards primary. While real public spending on primary schooling increased, its rate of increase did not match that of secondary education and the share of secondary education spending increased. In Malawi and Uganda, however, primary school expansion was achieved through changes in the shares of public education expenditure in favour of primary. This was most extreme in Malawi where secondary education and teacher training experienced massive cuts in real terms during the 1990s. In Uganda, while the share of public spending on universities declined substantially this did not result in real cuts in spending. Therefore increases in public expenditure on education were disproportionately allocated to primary.

The composition of public education expenditure has changed considerably only in Uganda since the introduction of UPE. However, in all countries the abolition of fees brought about increased spending by the government on teaching and learning materials at the primary level. This was partly in line with the government taking over the costs of education that previously had been covered by parents.

Donor financing of the education sector during primary school expansion was important in all three countries. However, the dependence on donors declined substantially in Botswana over time. Donor financing continues to play an important role in the education systems of Malawi and Uganda. First, a large proportion of the overall government budget is externally financed with grants and loans from donors making up a large part of this financing and, second, education development expenditure is dominated by donors. In terms of donor financing Malawi and Uganda take a large percentage of total donor education aid flows to SSA.

**Public education spending and education outcomes: country case study trends**

The case studies, on the whole, confirm the cross-country findings that the link between public spending and primary school access is weak. In the country case studies this is easily explained. During primary school expansion there was a quantity–quality trade-off, which, put another way, suggests that increases in access to primary school were not driven primarily by increases in the number of places offered by the primary school system. What happened is that in Malawi and Uganda the education infrastructure (classrooms, teachers, books, etc.)

was used far more intensively as enrolments increased. As a result per pupil expenditures declined at the same time that access was increasing. The negative relationship between access and spending apparent in Malawi and Uganda is partly due to the fact that the education service offered changed greatly over that period. Therefore, increasing access to the same type of schools and intensity of use cannot be achieved through reductions in per pupil spending.

Similarly, the weak relationship between the overall level of primary expenditure as a proportion of GDP and primary school enrolment can also be explained in the case study countries. Increases in primary education spending tended only to happen after the initial increase in enrolments. Initially, at least, more access was achieved without concomitant rises in expenditure. The rather strange result at the cross-country level is therefore more easily explained when looking at the country case studies.

The case study countries show very weak correlations between spending and the proxy quality indicators. The case studies also show that these indicators are as likely to be determined by policy decisions on, for example, automatic promotion as they are on increased spending. Chapter 3 of the report shows that although there were major differences in proxy indicators of quality across the case study countries they did not appear to be strongly related to learning outcomes. For these reasons it is perhaps not surprising that levels of public spending do not appear to have a strong impact on these proxies of quality.

The evidence presented in the report throws doubt on the direction of causation between public spending and education system indicators. It has shown that, particularly in Malawi and Uganda, public spending has responded to changes in access rather than the other way around. For example, substantial increases in education access have been achieved without proportional increases in public spending. The results suggest that the impact of education spending decisions on primary school enrolments are likely to be country specific and determined, at least in part, by other education policies (e.g. fee and repetition policy) and the characteristics of the education system.

**The impact of primary school expansion on equity and the education costs facing households**

The expansion resulting from the abolition of fees improved poorer households' access to primary education by a much larger degree than wealthier households' access. This improved access implied a major redistribution of government education resources towards the poor. At least in terms of access the abolition of fees has been seen to be an extremely pro-poor policy. However, while it is difficult to assess other impacts it appears that primary school survival rates and other outcome measures may not show such a large increase for the poor.

Information on household spending on primary education is not systematically collected but the information that is available suggests that the costs facing households in sending their children to school has declined since the abolition of fees. However, sending children to primary school still represents a significant proportion of a household's income.

Combining information on household and government expenditure on primary education shows that total per pupil expenditure declined slightly after fee abolition. This implies that in Malawi and Uganda governments were unable to cover the reduction in fees through increases in their own per pupil spending. It also suggests that the increased access came about primarily through a demand side response to the abolition of fees and a reassertion by government of the importance of primary education rather than through an increase in the available primary school places. In fact Chapters 3 and 4 of the report show that in Malawi and Uganda the supply side was slow to respond with more teachers and classrooms.

**Public expenditure management in the education sector**

Public expenditure management obviously does not fall completely within the remit of government agencies responsible for primary education. However, the report shows the importance of well-functioning public expenditure management systems to the effectiveness of public spending to lead to better education outcomes. Sector prioritisation has improved in all three case study countries particularly for education. In terms of intrasectoral allocations the Medium-Term Expenditure Framework (MTEF) approach has been seen to be effective in Uganda and Botswana in doing this but perhaps less so in Malawi. Budget execution and auditing/monitoring remain relatively weak in Malawi but Uganda has made impressive gains in the education sector, most notably through the Education Strategic Investment Plan (ESIP) and successful biannual reviews of the education sector. Within this context, public expenditure tracking systems have been extremely useful in highlighting challenges to the effective flow of funds and have led to some innovative solutions. The strength of the Ugandan public expenditure management system, particularly in the context of the education sector, helps explain why primary education indicators improved after the abolition of fees. This stands in contrast to Malawi where education indicators have stagnated (See Chapters 3, 4 and 5). While budget execution in Botswana is good by all accounts there is a persistent problem on the development side of the budget in providing primary school infrastructure. This is in part due to the lack of capacity at the district level but also to the interaction between the public and private sectors.

**Conclusions**

Using country or regional averages for policy purposes is unlikely to be meaningful. The World Bank (2002a) study exploring policy options for achieving EFA by 2015 under the Fast Track Initiative suggests that the characteristics of education systems in countries that are classified as successful should be used as target parameters for countries that have not achieved EFA. For example, the average primary pupil–teacher ratio in high completion countries is 40 and this is suggested as the target for countries that have not achieved EFA. The evidence reviewed and presented in this report suggests that the pupil–teacher ratio does not explain cross-country variation in enrolment or completion rates so setting targets for the pupil–teacher ratio based on cross-country averages is unlikely to be meaningful. Furthermore, the cross-country work suggests that indicators selected to monitor EFA have no close, consistent relationship to levels of expenditure across countries. While this may in part be owing to data problems, it is also the case that these outcome measures do not measure some important aspects of EFA. In particular, the measurement of the quality of primary education relies on proxy measures. For a better understanding of learning outcomes across countries, it would be invaluable to have the capacity to monitor country progress more effectively. Cross-country initiatives such as Southern African Consortium for Monitoring Educational Quality (SACMEQ) and the UNESCO Monitoring Learning Achievement (MLA) project should be expanded to include more countries, in particular countries that are as yet far from achieving the education targets.

Malawi and Uganda have been successful in prioritising education and in particular primary education in government budgets. Current education budget allocations to primary education are much higher in Malawi and Uganda than in Botswana. With larger numbers of primary school completers, pressure for expanded secondary schooling opportunities is already being felt in Malawi and Uganda. These countries will need to supplement their education budgets in order to meet this demand; this raises questions of sustainability for current levels of primary education expenditure given the high levels of spending already devoted to education, particularly in Uganda.

The report has also shown that Malawi and Uganda receive a great deal of support from donors. In fact levels of resourcing to education in Malawi and Uganda represented in 2001 approximately 7 per cent of all bilateral aid to education in SSA (Al-Samarrai 2002b). If Malawi and Uganda are guides to the external resources needed to move countries towards EFA it is very likely that donors will need to increase significantly their aid to education in SSA if other countries in the region are going to achieve the EFA targets by 2015. Given that Malawi and Uganda are still some way off achieving the EFA goals it is likely that donor support will still be needed for some time in these countries.

The case study countries also show very weak correlations between spending and proxy indicators of education quality. The case studies show that these indicators are as likely

to be determined by policy decisions on, for example, automatic promotion, as they are on increased spending. Therefore, increasing spending will not necessarily improve the proxy quality indicators. Measuring learning achievement is very important although currently most education management information systems (EMISs) do not provide adequate information on these types of outcomes. It is important that EMISs begin to provide information on learning achievement so that it can be effectively monitored and so that spending decisions can be made more accurately.

Variations in the composition of public education expenditure at the school level are also likely to lead to differences in education outcomes across schools and countries. Getting to grips with this issue from the perspective of national budgets and aggregate spending information is very difficult. Micro based studies are much better suited to inform on the best mix of inputs at the school level. However, the micro based literature has not, up to now, shown consistent impacts of different inputs on education outcomes. This is partly due to the very different characteristics of national education systems and the environments in which they work in. Understanding why some schools in a particular country have better education outcomes than others is crucial if aggregate education outcomes are to be improved.

Primary school expansion in Malawi and Uganda came about primarily through a demand-side response to the abolition of fees and a reassertion by government of the importance of primary education rather than through an increase in the available primary school places. In fact, the report showed that in Malawi and Uganda the supply side was slow to respond with more teachers and classrooms. A large body of evidence shows that household characteristics and particularly levels of poverty are strongly associated with primary education participation both in terms of attendance and performance (Colclough *et al.* 2003). These conclusions suggest that demand-side factors, as opposed to public expenditure and supply-side factors, are a major determinant of education outcomes. Information on the costs facing households in sending their children to school should be routinely collected to analyse cost constraints. In addition, policies to improve the education participation of the poor that move away from improving access need to have equal weight with supply-side policies if the EFA targets are to be achieved.

Public expenditure management obviously does not fall completely within the remit of government agencies responsible for primary education. However, the report has shown the importance of well-functioning public expenditure management systems to the effectiveness of public spending to lead to better outcomes. Sector prioritisation has improved in all three countries particularly with respect to education. In terms of intrasectoral allocations the MTEF approach has been seen to be effective in Uganda and Botswana in doing this but perhaps less so in Malawi. Budget execution and auditing/monitoring remain relatively weak in Malawi but Uganda has made impressive gains in the education sector, most notably

through ESIP and successful biannual reviews of the education sector. Within this context, public expenditure tracking systems have been extremely useful in highlighting challenges to the effective flow of funds and have led to some innovative solutions.

The analysis in this report suggests that the link between resources and education indicators are weak and that the achievement of the Millennium Development Goals and EFA targets will require more than just increases in expenditure on primary education. This does not imply resources are unnecessary, merely that they are unlikely to be sufficient for achieving the education goals. The composition of resources and institutions that govern the use of these resources play a central role in translating resources into better schooling outcomes. Furthermore, the report has shown that recent successes in improving access to primary education have predominantly been a demand-side phenomenon and improvements in education outcomes will only be sustainable if demand-side constraints to primary schooling are tackled. A stronger focus on these aspects of education systems will be required if the Millennium Development Goals in education are to be achieved.

## 1 Introduction

This report presents the main findings from a research project aiming to explore the relationship between public education spending and education outcomes at the primary level in developing countries. The report explores this relationship from a cross-country perspective before concentrating on three African case studies – Botswana, Malawi and Uganda. These case studies provide important insights into how universal primary education (UPE) has been achieved from a financing perspective and practical lessons for other African countries attempting to achieve primary Education for All (EFA).

### 1.1 Study objectives

The international development target of achieving primary EFA by 2015, which has recently been reaffirmed, contrasts sharply with experience in sub-Saharan Africa (SSA), where education enrolments and quality in about half of the countries in the region have deteriorated since 1990. It appears that in some cases this has been caused by underspending by governments on primary schooling, but in others the unit costs of schooling are high and reforms to change cost structures are required to make EFA affordable.[1]

Education coverage in SSA is not only partial, but also its quality is highly variable from place to place. Even where all, or most, children are enrolled, levels of repetition, completion and student achievement appear to vary enormously between countries. The development targets are articulate about quantity, but rather less so about school quality, notwithstanding the importance attributed to this by the Jomtien and Dakar discussions, and by governments and donors alike. This is partly because it is easier to measure school inputs than outputs. There is little agreement about how quality variables can best be proxied as targets for policy. Even the relationships between public spending and the quantitative performance of school systems are not yet completely clear. Some countries which allocate lower than the regional average proportion of GDP to primary schooling achieve high enrolments; in others, the opposite seems to hold.

The aim of the research is to clarify the relationship between public education spending and education outcomes at the primary level. The main objectives of the research are to:

[1] The evidence is in Colclough with Lewin (1993) and Colclough and Al-Samarrai (2000).

• Explore the relationship across countries between public expenditure and education outcomes in terms of both access and performance

• Understand, from a financing perspective, how UPE has been achieved in selected countries in the region

• Document in three African countries how universal UPE has been achieved from an education and financing perspective

• Analyse the extent to which quantitative aspects of UPE have been achieved at the expense of quality

• Examine how UPE has been financed by households and government and, in particular, whether UPE has been associated with a substantial redistribution of the costs of education towards government

• Provide practical lessons from the experience of these countries for other SSA countries that are not yet close to achieving UPE

• Provide policy-makers with a framework to analyse public expenditure on education and how it relates to education outcomes.

The study has benefited from previous work looking at public expenditure and education outcomes. Frameworks for analysing public spending in education have been usefully provided by Pradhan (1996), Bruton (1997) and Dean and Pugh (1989). Other work looking at budgeting more generally including Caiden and Wildavsky (1974), Castro-Leal (1996), Corrales (1999) and Penrose (1993) were also useful in providing a broad framework for the research project.

**1.2 Cross-country analysis**

The research project explores these issues initially by looking at the relationship between education outcomes and public expenditure from a cross-country perspective. While there has been some cross-country research conducted on the determinants of access to schooling (McMahon 1999; Schultz 1995) its primary focus has not been the relationship between public expenditure and education outcomes. These studies have shown that increased public expenditure on education is associated with increased enrolments. However these studies are only suggestive and are beset with potential econometric problems.[2] Cross-country research on the impact of public expenditure on education outcomes other than enrolment is scarce, mainly owing to the lack of comparable data on school achievement. One study has looked at

[2] For example, the McMahon study only includes public expenditure variables and the degree of urbanisation as determinants of enrolment. It may be the case that other determinants (e.g. gross national product per capita) are important and because of their omission are being proxied by public expenditure.

the determinants of school quality in a cross-section of countries (Lee and Barro 1997) and, while its primary objective was not to assess the impact of public expenditure, the results nevertheless suggest that public spending per pupil is only weakly related to school quality indicators.

The main aim of the cross-country analysis undertaken for the project has been to review the few studies that have explored these relationships and provide a consistent and robust analysis of the relationship between education outcomes and public expenditure. Cross-country econometric analysis has been used to establish the importance of variations in public spending in explaining education outcomes across countries.

Many key variables are not available on a cross-country basis. For example, while private household and donor agency expenditures will be important factors in explaining education outcomes, information on these flows is not readily available. In addition, cross-country relationships may be very different from those within a country over time. In this sense the cross-country analysis does not give a picture of the dynamics of educational progress and financing for any particular country. To gain a better understanding of the links between public expenditure and education outcomes, in the context of moving towards UPE, the research project undertook three country case studies.

### 1.3 Country case studies

The country case studies were undertaken in Botswana, Malawi and Uganda and aimed to document each country's move towards universalising primary education. The research project in each country used a variety of research tools and sources in order to obtain a comprehensive picture of how important aspects of universal primary schooling had been achieved. In all countries secondary data sources and interviews with key stakeholders were the main ways in which the research project was conducted.

#### *1.3.1 Country selection*

In order to gain an understanding of the link between public expenditure and education outcomes at the primary school level, SSA countries that had made significant advances in primary school access were initially selected. This ensured that selected countries had experienced major changes in expenditure and outcomes which would elucidate the link between primary education expenditure and education outcomes. Furthermore, it was felt that countries that had achieved UPE, at least in a quantitative sense, would provide important lessons for countries that were about to embark on the same course.

In SSA 16 countries out of a total of 43 with data available had achieved primary gross enrolment ratios of 100 per cent or greater in 2000. About half of these countries were anglophone SSA countries. Malawi and Uganda were selected because they are typical low-

income anglophone countries (see Table 1.1). Per capita incomes in 2000 in Malawi and Uganda were well below the SSA average of US$470. Primary enrolment rates in these two countries have approximately doubled over the 1990s, brought about partly through major policy change. Therefore, the experiences of Malawi and Uganda in achieving UPE are likely to be important for other countries moving towards the international development targets on education.

Table 1.1 Economic and education characteristics in Botswana, Malawi and Uganda

| | Botswana | | | Malawi | | | Uganda | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1980 | 1990 | 2000 | 1980 | 1990 | 2000 | 1980 | 1990 | 2000 |
| GNI per capita ($US) | 1,190 | 2,730 | 3,300 | 190 | 200 | 170 | - | 340 | 300 |
| Primary GER | 91 | 113 | 108 | 60 | 68 | 137 | 50 | 71 | 136 |
| Primary NER | 76 | 93 | 84 | 43 | 50 | 100 | - | - | 109 |
| Secondary GER | 19 | 43 | 93 | 5 | 8 | 36 | 5 | 13 | 19 |
| Tertiary GER | 1 | 3 | 5 | <1 | 1 | 0.3 | 1 | 1 | 3 |

Note: GER – gross enrolment ratio, NER – net enrolment ratio, GNI – gross national income
Tertiary GER for 2000 in Malawi is actually 1998/9. GNI per capita is expressed in constant US$.
Source: UNESCO Education Counts CD ROM, UNESCO Institute for Statistics (UIS) website and World Development Indicators CD ROM World Bank

Botswana appears to stand out when compared to the other two countries as it has higher per capita income and a substantially smaller population. However, it provides an extremely useful contrast to the other two countries as it has a relatively well-resourced education system and has had high primary gross enrolment ratios at the primary level since the early 1980s. Furthermore, the budget and planning procedures used in Botswana are currently being used as a model for budget reform across Africa.

### *1.3.2 Objectives of country studies*

The main objectives of the country case studies were:

• To detail education policy reform in the country and explore the country-specific context in which reforms were introduced

• To document and review how UPE has been achieved from a financing perspective and what implications the achievement of universal access has had on primary education outcomes

• To assess the effectiveness of the budgetary system to allocate resources efficiently.

To fulfil these objectives the country researchers documented the history of education policy through a review of the available literature and interviews with key policy-makers past and present. Country researchers also collated information from ministries of finance and education to clearly outline trends in public expenditure and education outcomes. In order to gain a clear understanding of how public finances are spent in the education sector country researchers also described the public expenditure management system. Interviews with key personnel in the public expenditure management system also gave insights into the effectiveness of the budget and expenditure processes in each country.

### *1.3.3 Definition of terms*

Universalising access to primary education has been defined and labelled in many different ways. Universal primary education in this report is defined as the provision by a country of sufficient primary school places to enrol all of its eligible primary school-age population. This is obtained by countries when they achieve primary gross enrolment rates (GERs) of 100 per cent or more. The definition of UPE is purely focused on enrolment and does not take account of whether students who have entered the system complete the primary education cycle. In the context of the Millennium Development Goals (MDGs) (see Chapter 2) universalising access to primary school has a wider interpretation, suggesting that for its achievement all children have access to and complete the full primary school cycle. There is extensive discussion on how to operationalise this definition but indicators of both primary school access and completion are used. For example, the UNESCO global monitoring report suggests a definition of primary net enrolment rates (NERs) of 99 per cent and Grade 4 completion rates of 99 per cent (UNESCO 2002). This more restrictive definition of UPE is defined in this report as primary EFA.

UPE is also used in this report to refer to a set of policy reforms that were introduced to achieve the objective of UPE and that were instrumental in bringing about large-scale primary school expansion, which led to primary GERs of over 100 per cent soon after the pronouncements. When UPE reforms were introduced is relatively easy to define in Malawi and Uganda where policy statements introducing changes in primary education and the subsequent enrolment responses to these changes are easy to date. In Malawi, free primary education (FPE), as the policy changes are known, occurred in the 1994/5 school year. In Uganda, UPE reforms began in the 1997 school year. The case studies in these countries therefore explore education and finance trends in the 1990s. Botswana is slightly different and the report explores the primary education system after the first National Commission on Education (NCE) in 1977 stated UPE to be a key objective of education development. Significant expansion of primary enrolments had already taken place in Botswana before the

Commission's policy recommendations were accepted and incorporated in National Development Plans (NDPs).

### *1.3.4 Key research questions*

The country case studies collected and analysed a great deal of information and this information has been used to answer the following research questions:

• Why was UPE seen to be an important policy objective among policy-makers in each country?
• How has UPE affected the whole education system? Has the expansion of primary schooling had any impact on other levels of the education system?
• To what extent has there been a quantity–quality trade-off at the primary level?
• How was UPE financed? To what extent was UPE financed through re-allocation of public resources to primary education?
• How sustainable is UPE?
• How important is the public expenditure management system in explaining differences in education outcomes across districts?
• How useful are current cross-country indicators of education outcomes in monitoring and evaluating progress towards EFA?

### *1.3.5 Methodology*

The country case studies were undertaken during 2002 and 2003 and covered six months of person time. In general the country case studies attempted to bring together already available data and the many studies that had already been undertaken in each country to address the questions outlined in the previous section. Secondary information was supplemented by extensive interviews with policy-makers, ministries of education and finance and local government personnel, politicians and other key stakeholders in the education sector.[3]

In addition, brief visits to two districts in each country were undertaken as part of the project. In the context of decentralisation it was important for local officials to be interviewed about the public expenditure management system in particular. An attempt was made to select districts that were similar in terms of socio-economic status and received similar levels of public expenditure on education but which appeared to have very different education outcomes. Local education officials were interviewed and available data on expenditure were collected. The two districts were then compared to ascertain whether differences in education

[3] There were country differences in the individuals that were interviewed. See country reports for full details of individuals interviewed.

outcomes could be explained by differences in the effectiveness of the public expenditure management system.

### 1.4 Target readership and other publications

The main target readership for this report is education policy-makers and planners in SSA. Other stakeholders in the education sector, including education non-governmental organisations (NGOs), donor agencies and academic researchers should also find this study of interest.

This report synthesises the main findings from the research project including both cross-country and country study findings. Separate reports are available that present detailed findings for each country case study and the cross-country research.

### 1.5 The study team

The study team comprised the following individuals:

Dr Samer Al-Samarrai, Research Fellow, Institute of Development Studies at the University of Sussex, Brighton, UK

Professor Christopher Colclough, Institute of Development Studies at the University of Sussex, Brighton, UK[4]

Mr Lisenda Lisenda, Associate Research Fellow, Botswana Institute of Development Policy Analysis, Botswana

Ms Esme Kadzamira, Senior Research Fellow, Centre for Research on Education and Training, Chancellor College, University of Malawi, Malawi

Dr Kwhima Nthara, Department of Economics, Chancellor College, University of Malawi, Malawi

Mr Fosters Kholowa, Department of Curriculum and Teaching Studies, Chancellor College, University of Malawi, Malawi

Mr Lawrence Bategeka, Research Fellow, Economic Policy and Research Centre, Makerere University, Uganda

Dr Marios Obwona, Senior Research Fellow, Economic Policy and Research Centre, Makerere University, Uganda

Mr Milton Ayoki, Executive Director, Institute of Policy Research and Analysis, Uganda

Mr Ashie Mukungu, Young Professional, Economic Policy and Research Centre, Makerere University, Uganda.

[4] Christopher Colclough left the project in September 2002.

### 1.6 Report structure

The next chapter discusses the cross-country research which explores whether cross-country variations in public education spending can explain differences in a variety of education outcome indicators. This chapter shows that there is a weak link between public primary education expenditure and education outcomes and concludes that this may be due to the nature of cross-country work. Therefore the remaining chapters of the report discuss the findings from the country case studies. Chapter 3 briefly discusses education policy in each of the three countries and highlights the main reasons why UPE became a priority in these countries. The chapter also details trends in the education system. Chapter 4 explores how the three case-study countries financed primary school expansion while Chapter 5 draws together the cross-country and country study findings and discusses the link between public spending and education outcomes. Chapter 6 describes the impact primary school expansion has had on equity and the costs households face in sending their children to school. Chapter 7 presents findings from the country case studies on the effectiveness of the public expenditure management system and places these findings in the broader literature in this area. Chapter 8 concludes with a discussion of the findings of the research and the key lessons for countries attempting to achieve primary schooling for all in the context of the international development targets.

## 2 Public education spending and education outcomes: the cross-country evidence[5]

This chapter explores the extent to which differences in the resources allocated to education explain differences in education access and performance across countries. It examines whether increases in the resources allocated to education by governments and the international donor community will be sufficient to move countries closer to achieving the Millennium Development Goals.

In 1996 the international community committed itself to substantially reducing levels of poverty across the developing world, through the international development targets (Copenhagen Declaration 1996). Education, and more specifically primary education, was seen as a crucial condition for achieving these development targets. The World Education Forum restated these international commitments in its 2000 Dakar meeting but went further in order to incorporate aspects of quality into the goals. Specifically, the Dakar framework for action commits signatories to:[6]

[5] This chapter is based on the work presented in Al-Samarrai 2002a.

[6] The Dakar framework for action also included three additional goals based around early childhood and adult education which are not discussed here.

> (i) ensuring that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities, have access to and complete, free and compulsory primary education of good quality;
>
> (ii) eliminating gender disparities in primary and secondary education by 2005, and achieving gender equality in education by 2015, with a focus on ensuring girls' full and equal access to and achievement in basic education of good quality;
>
> (iii) improving all aspects of the quality of education and ensuring excellence of all so that recognised and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills.
>
> (World Education Forum 2000)

The mobilisation of national and international resources to increase investment in basic education is seen as critical to achieving these goals. The central importance of resources in the Dakar framework is highlighted by bold claims asserting that lack of resources will not be a constraint to achieving good quality primary education for all: 'We affirm that no countries seriously committed to education for all will be thwarted in their achievement of this goal by a lack of resources' (World Education Forum 2000).

There has been much recent work exploring the costs of achieving the MDGs and in particular those within the education sector (Brossard and Gacougnolle 2000; Delamonica *et al.* 2001; Devarajan *et al.* 2002; World Bank 2002a). These studies estimate that achieving primary education for all will require between US$9 billion and US$28 billion of additional resources to education annually.[7] This is equivalent to increasing the proportion of gross national product (GNP) spent on education from an average of 3.9 per cent to between 4 and 4.3 per cent in the less developed regions of the world (UNESCO 2000).[8] These figures have been used by many stakeholders to mobilise resources for education nationally and internationally.

It is clear that these studies and the Dakar framework treat increasing resources as a key strategy for achieving primary education for all. But the relationship between resources and education outcomes is less clear. Some countries which allocate lower than the regional average proportions of GNP to primary schooling achieve good education outcomes; in other countries, higher than average spending results in poorer outcomes. The aim of this chapter is

[7] These figures represent the estimated total additional resources required and do not distinguish between domestic and external sources of additional financing. The World Bank (2002a) estimates that an additional US$2.5 billion would be required annually from external sources for 47 low-income countries to achieve these goals.

[8] These figures are based on 1997 figures for regional estimates of public expenditure on education reported in UNESCO 2000.

to explore whether differences in the resources allocated to education can explain differences in education access and performance across countries. Will increases in the resources available to education move countries closer to achieving the goals laid out in the Dakar framework?

### 2.1 Evidence from previous studies

The lack of appropriate data has meant that there have been relatively few studies exploring the relationship between resources and outcomes across countries. Work that has been undertaken on this issue has mainly involved micro-level studies, particularly in the USA. Recently, however, some studies have begun to look at this relationship across countries, using internationally comparable achievement surveys.

In many developing countries the quantity of education available is restricted. It is therefore important to explore the impact of resources on improving access to schooling and on increasing the proportion of the school-age population attending. Measures that can be used to explore the impact of resources on access to education at the cross-country level include primary gross and net enrolment rates. These types of measure are readily available for most countries.

Once children are in school, the quality of education they receive and their levels of achievement are also potentially influenced by the level of resources available in the schools they attend. Comparable data at the cross-country level on achievement and quality are less readily available, although a number of cross-national studies on school achievement have been undertaken, including studies undertaken since 1963 by the International Association for the Evaluation of Educational Achievement (IEA). The IEA's most recent survey, the Third International Mathematics and Science Study (TIMSS) compares mathematics and science test scores for primary and secondary school students across 45 countries. Unfortunately, few developing countries are included, and even fewer African countries. More recent efforts to define internationally comparable indicators of achievement in developing countries specifically include the Monitoring Learning Achievement Project and the Southern African Consortium for Monitoring Educational Quality (SACMEQ) project in Africa (Nassor and Mohammed 1998; Nkamba and Kanyika 1998; Chinapah 1999). These studies have, however, generally included a small sample of countries, and are only available for a single year. In the absence of direct measures of learning outcomes, proxy variables have also been used at the cross-country level (Lee and Barro 1997), most notably primary school repetition rates and drop-out rates and these two indicators combined in the form of primary school survival rates. These are used to measure the efficiency of the education system, and are included as indicators of progress towards the Dakar goals (Cavicchioni 2001).

Table 2.1 details econometric studies that have explored the relationship between resources and education outcomes at the cross-country level. It should be noted that this relationship is not the primary focus for some of these studies.[9] The table only reports the dependent variable and resource variables used, although in most of the studies other independent variables are also included. For example, the Hanushek and Kimko (2000) study includes population growth and years of adult schooling as independent variables. The resource variables shown for each study are used in separate regressions with the exception of the Lee and Barro (1997) and McMahon (1999) studies where the resource variables reported in Table 2.1 are all included in each regression.

[9] For example, the main focus of Hanushek and Kimko (2000) is not the impact of resources on education outcomes, but the impact of the quality of the labour force on economic growth. The link between resources and education quality is secondary, and the regressions in which this relationship is detailed are used to construct labour force quality measures for the main regressions reported in the paper.

Table 2.1 Cross-country estimates of the impact of resources on education outcomes

| Study | Type and year of data | Sample size | Schooling level | Dependent variable and source | Resource variables | Sign of coefficient | Significance level |
|---|---|---|---|---|---|---|---|
| Hanushek and Kimko (2000) | Cross-country panel 1965, 1970, 1988, 1991 | 70 | Primary and secondary | 1. IEA and IAEP* mathematics and science tests | Pupil–teacher ratio | positive | n.s. |
| | | 69 | | 2. IEA and IAEP mathematics and science tests | Current education spend per pupil (US$PPP)** | negative | 1% |
| | | 67 | | 3. IEA and IAEP mathematics and science tests | Total expenditure on education as a proportion of GDP | negative | 5% |
| Wössmann (2000) | Cross-country 1995 | 39 | Primary and secondary | Test scores: TIMSS mathematics and science scores | Class size | positive | 1% |
| Lee and Barro (1997) | Cross-country panel 1964, 1970, 1982, 1984, 1990 | 214 | Primary and secondary | 1. Test scores: various sources | Pupil–teacher ratio | negative | 5% |
| | | | | | Average teacher salary (US$PPP) | positive | 10% |
| | | | | | Current education spend per pupil (US$PPP) | negative | n.s. |
| | Cross-country panel 1970, 1975, 1980, 1985 and 1990 | 337 | Primary | 2. Primary school repetition rates: UNESCO and Lockheed and Verspoor (1991) | Pupil–teacher ratio | positive | 1% |
| | | | | | Average teacher salary (US$PPP) | negative | n.s. |
| | | | | | current education spend per pupil (US$PPP) | positive | n.s. |
| | Cross-country panel 1970, 1975, 1980, 1985 and 1990 | 346 | Primary | 3. Primary school drop-out rates: UNESCO and Lockheed and Verspoor (1991) | Pupil–teacher ratio | positive | 5% |
| | | | | | Average teacher salary (US$PPP) | negative | n.s. |
| | | | | | Current education spend per pupil (US$PPP) | negative | n.s. |
| McMahon (1999) | Cross-country early 1990s | 44 | Primary | 1. Primary female GER | Public recurrent expenditure on primary (% GNP) | positive | 1% |
| | | | | | Public recurrent expenditure per primary student (% GNP per capita) | negative | 1% |
| | Cross-country early 1990s | 44 | Primary | 2. Primary male GER | Public recurrent expenditure on primary (%GNP) | positive | 1% |
| | | | | | Public recurrent expenditure per primary student (% GNP per capita) | negative | 1% |
| | Cross-country early 1990s | 49 | Primary | 3. Female fifth grade completion rate | Public recurrent expenditure per primary student (1985 US$) | positive | 1% |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Cross-country early 1990s | 50 | Primary | 4. Male fifth grade completion rate | Public recurrent expenditure per primary student (1985 US$) | positive | 1% |
| Schultz (1995) | Cross-country 1965– 80 | Between - 60 | Primary | 1. Primary GER: UNESCO | Relative price of teachers (public teachers compensation as a prop of GNP per working age adult) | negative | 1% |
| | | Within - 191 | Primary | 2. Primary GER: UNESCO | Relative price of teachers (public teacher compensation as a proportion of GNP per working age adult) | negative | 1% |
| Colclough with Lewin (1993) | Cross-country 1986 | 82 | Primary | 1. Primary GER: UNESCO | Public recurrent expenditure on primary (% GNP) | positive | n.s. |
| | Cross-country 1986 | 82 | Primary | 2. Primary GER: UNESCO | Public recurrent expenditure per primary student (% GNP per capita) | negative | 1–5% |

* International Assessment of Educational Progress

** PPP = purchasing power parity

Note: Hanushek and Kimko (2000) results taken from Table 3, Wössmann (2000) taken from Table 1, Lee and Barro (1997) results taken from Table 3, McMahon (1999) results taken from pp. 164 and 166, Schultz (1995) results taken from Tables 2 and 3, Colclough with Lewin (1993) results taken from Table 2.6a. Lee and Barro (1997) present other specifications but the results do not differ markedly. Colclough with Lewin (1993) also present results for developing countries and African countries separately although the results on the resource variables are similar.

The cross-country studies of quality outcomes reported in Table 2.1 show no consistent effect of resources on education outcomes. Studies using internationally comparable test scores tend to show that resources have a significant impact, but the direction of this impact differs across studies. In the Lee and Barro (1997) study, for example, the pupil–teacher ratio has a negative and significant impact on achievement. Using similar data, the Hanushek and Kimko (2000) study reports a positive but insignificant result, while the Wössmann (2000) study, using class size as the resource variable, reports a positive and significant impact. These last two results suggest that larger class sizes are associated with better achievement and, conversely, that the greater the level of resources available, the poorer the performance. Other measures of resources used in these studies also show inconclusive or counter-intuitive results. The two studies that explore the impact of per pupil expenditures on test scores, for instance, find that higher levels of expenditure are associated with lower levels of achievement, although in only one of these studies is this effect significant (Lee and Barro 1997; Hanushek and Kimko 2000).[10] The main drawback of these studies is their lack of developing country coverage, and in particular of SSA. TIMSS covered 45 countries in total, only 11 of which were developing countries. No low-income countries were represented, and only South Africa from the African continent. It is unclear, therefore, whether the absence of a consistent link between public expenditure and education resources would also be found in low-income developing countries, and in particular in SSA.

The Lee and Barro (1997) study regresses the primary school drop-out and repetition rates on a set of resource variables. The results generally show that resources are an insignificant determinant of drop-out and repetition rates. However, the pupil–teacher ratio is positively and significantly associated with these measures of quality outcomes. These results, coupled with the results from the test score studies, suggest that larger pupil–teacher ratios are associated with poorer internal efficiency, but not necessarily poorer test scores. In addition to these results, the McMahon (1999) study looks at the impact of resources on Grade 5 survival rates. This study shows that per pupil expenditure is a significant determinant of primary school survival rates: higher levels of per pupil expenditure tend to increase the persistence of primary school students.

One issue to bear in mind is that studies exploring the impact of resources on quantity outcomes tend to measure resources differently. The Schultz (1995) study shows a strong negative relationship between the relative price of teachers and the gross enrolment rate.[11] These results suggest that increases in resources per pupil (i.e. increases in the relative price

[10] Wossmann reports that coefficients on per pupil expenditures are negative and statistically significant in his regressions although he does not report these results in his paper (see Wossmann 2001: 25).

[11] Schultz uses instrumental variable estimation to account for the endogeneity of the relative price of teachers.

of teachers) will reduce the enrolment rate (Schultz 1995). However, it is not clear from these results whether changes in total public primary education expenditure will directly impact on primary school access. The McMahon (1999) study includes expenditure per primary pupil and total education expenditure as a proportion of GNP, and finds a negative and significant relationship between per pupil expenditure and the primary gross enrolment rate, and a positive and significant impact of total education expenditure as a proportion of GNP. The results of the McMahon (1999) study suggest that increasing primary education expenditure while holding per pupil expenditure constant has a positive and significant impact on the primary gross enrolment rate.

However, this study does not include income per capita as a separate explanatory variable, and it may be the case that these resource variables are proxying for income per capita. The Colclough with Lewin (1993) study includes an income per capita variable, and finds that expenditure as a proportion of GNP is not significant when entered separately.

The relationship between education outcomes and resources thus varies across studies, and where resources are statistically significant the direction of the relationship is often counter-intuitive. This cross-country evidence mirrors the micro-based evidence, particularly from the USA, which shows the lack of a systematic and consistent link between resources and achievement (Hanushek 1996). It has been argued, however, that there may be a slightly stronger link between resources and achievement in developing countries, because education systems in developing countries tend to be so severely under-resourced compared to developed countries that marginal increases in resourcing are likely to have much larger impacts on education outcomes than in developed countries. Reviews of the micro-based literature do suggest that a greater proportion of studies in developing countries report a positive impact on education achievement than in developed countries (Fuller 1987; Fuller and Clarke 1994; Hanushek 1995; Hanushek 1996).[12] Overall, however, the developing country literature still shows inconsistent effects of resources on achievement. The lack of low-income developing countries in cross-country test score studies means the evidence on the link between test scores and resources cannot currently be compared to the evidence from micro-based studies. Other quality outcomes used at the cross-country level show similar results to those shown in Table 2.1 for test scores. Studies using quantity outcomes show a significant negative impact of resources per pupil on overall levels of access. However, studies that include the overall level of resources do not show a consistent significant impact

[12] Micro based studies generally show the major importance of socio-economic characteristics of students as a determinant of academic achievement. However, it is not the purpose of this chapter to review the micro based literature on the determinants of achievement. This has been comprehensively carried out by a number of authors (see for example, Fuller 1987; Fuller and Clarke 1994; Hanushek 1995; Hanushek 1996, Wossmann 2000 and 2001).

of resources on the primary gross enrolment rate (Colclough with Lewin 1993; McMahon 1999).

There are a number of statistical issues that are not addressed in the studies that have been outlined in this section.[13] Furthermore, the studies reported in Table 2.1 that explored quantity outcomes did not in general explore whether changes in overall resources would have a significant impact on enrolment. These studies generally showed that in high-cost systems enrolment was low and in low-cost systems, enrolment was high. But they generally failed to explore whether increases in overall public education expenditure would impact on enrolment. As outlined in the previous chapter, an aim of this research project was to analyse these cross-country relationships in a systematic and robust way.

### 2.2 Cross-country results

Four education outcome variables are used in this chapter: the primary GER, the primary NER, the survival rate to primary Grade 5 and the primary school completion rate. The first two variables are measures of quantity and access to primary education within each country, while the last two are measures of the internal efficiency of education systems and have been used as proxy measures of quality. All of these variables measure different aspects of the education goals outlined in the introduction to this chapter.

As measures of education outcomes these four variables are not without conceptual problems. Primary GERs measure the number of primary school students as a proportion of the primary school-age population. The GER does not indicate the proportion of children of primary age who are currently in school, which means it is not possible to use this measure to determine whether all children of primary school age are in school. The NER accounts for this by measuring the number of students of primary school age that are currently enrolled in primary school. This measure is, therefore, more useful when assessing a country's progress in providing education for all primary-age children. However, neither enrolment rate gives much sense of the number of years of education that students obtain. At the extreme, enrolment rates may be very high even though completed years of primary schooling are very low. In addition, enrolment rates provide no information about the frequency of school attendance, which is potentially a more important measure of primary school participation than enrolment rates.

Using the primary survival rate to Grade 5 in conjunction with the NER addresses this criticism to some extent. The survival rate measures the proportion of a cohort of pupils enrolled in the first grade of primary school who are expected to reach Grade 5. However, this measure is calculated using the reconstructed cohort method and is based on single-year

[13] For a full description of these problems see Al-Samarrai (2002a).

repetition and drop-out rates. Repetition rates are often reported inaccurately, particularly when policies of automatic promotion are in place. How accurate the survival rate is will also depend on the stability of repetition and drop-out rates over time, and evidence suggests these rates vary considerably over the course of a primary school cycle. Finally, the primary school completion rate has the advantage that it combines a measure of completion rates with a measure of the proportion of primary school-age children completing. This recent measure is calculated as the number of primary school students successfully completing the last year of primary school as a proportion of children of official graduation age in the population (World Bank 2002a).

The different measures of education outcomes provide information on the characteristics of different education systems, but give no indication of levels of achievement or competencies across these systems. Levels of numeracy and literacy of primary school completers are likely to vary across countries depending on the quality of their education systems. As the previous section highlighted, cross-country studies of learning achievement do not adequately cover developing countries.

While these education outcome indicators have their limitations, they have been chosen primarily because they are being used by the international donor community to monitor progress towards the Dakar targets. UNESCO uses gross and net enrolment and primary survival rates to measure primary school participation, and the World Bank proposes the primary school completion rate as a monitoring indicator for its education Fast Track Initiative (Cavicchioni 2001; World Bank 2002a).[14] In terms of current support for financing primary education, therefore, it is important to determine whether these indicators are influenced by levels of spending.

The relationship between each of these education outcome variables and public education spending is analysed using regression analysis. These regressions illustrate how much of the cross-country variation in education outcomes can be explained by differences in public spending. A relatively large database for 1996 was assembled containing variables that had been identified previously in the literature as determinants of education outcomes. The database and the samples used in the regression analysis include many developing countries, in particular sub-Saharan countries. Three different variables were used to measure the impact of public spending on education outcomes: public primary education spending as a proportion of GNP, primary expenditure per pupil, and the primary pupil–teacher ratio. These measures closely follow the resource measures used in the previous studies outlined in the previous section (see Table 2.1).

[14] It should be noted that UNESCO is attempting to develop other indicators to measure progress towards the targets.

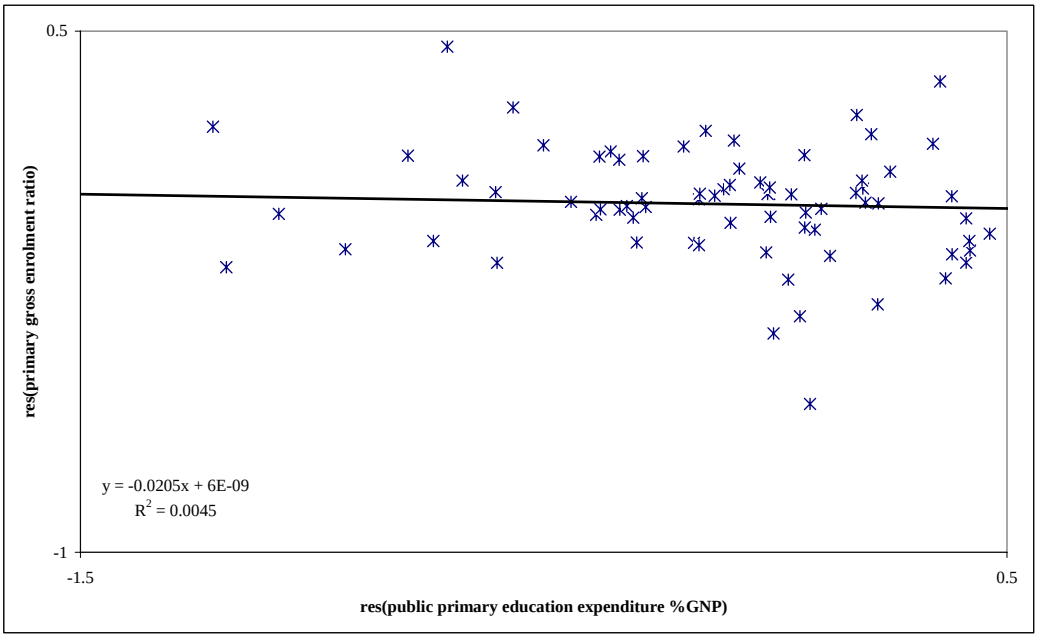
In addition to the expenditure variables the regression analysis controls for a number of other factors that may be important in explaining cross-country differences in education outcomes. Income per capita is included since many studies show that countries with higher income per capita have better education outcomes (see, for example, McMahon 1999). Levels of urbanisation, the Muslim population as a proportion of the total population, and a set of regional dummies were included as additional explanatory variables in the regression analysis. Education outcomes are likely to be affected by urbanisation because it is easier to provide education services to more densely populated areas, and because household travel costs associated with school attendance may be lower in urban than rural areas. Some earlier results have suggested that countries with large Muslim populations tend to have poorer education outcomes (Colclough with Lewin 1993).[15]

The regression analysis shows the effect of public education expenditure, measured in any one of the three ways, on education outcomes while controlling for (i.e. keeping constant) all of the other explanatory variables outlined above. The full regression results are presented in Appendix Tables A.1 and A.2 and are discussed at length in Al-Samarrai (2002a). This report focuses solely on the results of the relationship between the four education outcome measures and the public expenditure measures. In order to provide a more graphical representation of the results partial scatter plots of these relationships are presented in this report.

Figure 2.1 shows the relationship between the primary gross enrolment ratio and public primary education expenditure as a proportion of GNP.[16] The variable on the vertical axis is the primary gross enrolment ratio after controlling for all other explanatory variables included in the regression (i.e. GNP per capita, urbanisation, Muslim population proportion, a measure of income inequality and a set of regional dummies). The variable on the horizontal axis is public primary education expenditure as a proportion of GNP having controlled for the same set of explanatory variables.[17] The scatter plot also contains a regression line and the estimated regression equation.[18]

Figure 2.1 Partial scatter plot of the primary GER and public primary education expenditure as a proportion of GNP

[15] For full details of the variables used and their descriptive statistics see Al-Samarrai (2002a).
[16] All variables in the regressions are logged with the exception of the gini coefficient.
[17] The variables are actually residuals from regressions of the variable on all other explanatory variables, which explains why the variables take on positive and negative values. The value taken by any observation shows the difference between that explained by other variables in the model and the actual value of the variable for that observation. This difference, and hence the unexplained part of the variable, can be either positive or negative.
[18] The slope coefficient of this regression line corresponds to the coefficient for public primary education expenditure in the primary gross enrolment ratio equation reported in Appendix Table A.1.



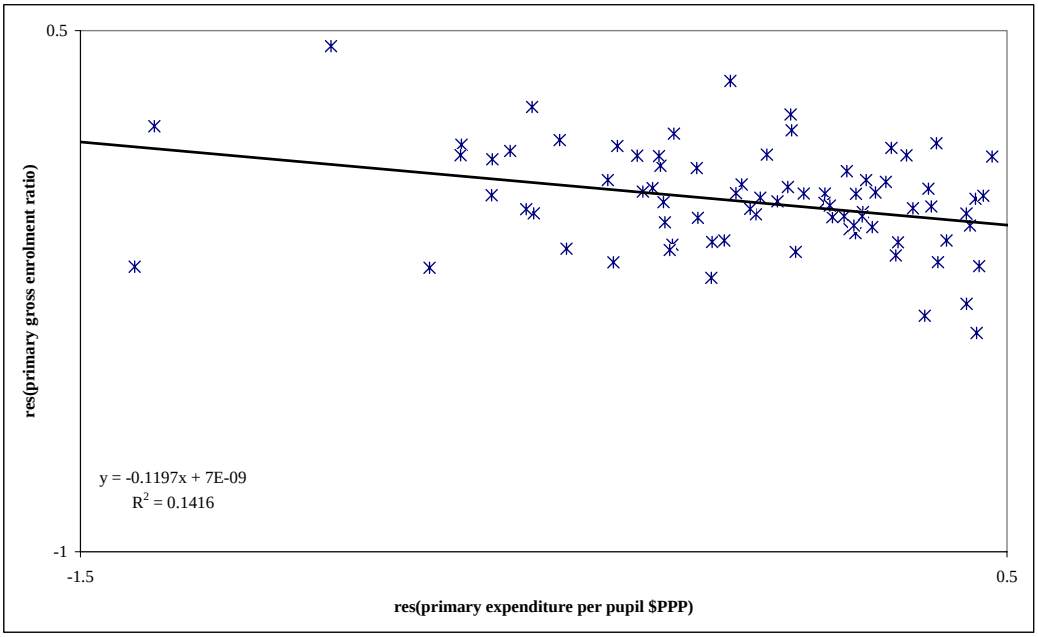

Note: The variable on the vertical axis is the unexplained part of the primary GER once the other explanatory variables in the regression analysis have been controlled for (see Appendix Table A.1). The variable on the horizontal axis is the variation in public primary education expenditure as a percentage of GNP not explained by the same set of explanatory variables.

Figure 2.1 shows clearly that the relationship between primary school access and public education expenditure is very weak. The scatter plot shows that countries with similar levels of public spending on primary education have very different primary GERs. In fact, the estimated relationship suggests that higher public spending on education is associated with lower primary GERs although this relationship is not statistically significant. It should be recalled that the scatter plot illustrates the relationship between access and spending once a set of variables, considered to be important in determining the GER independently of public spending, have been controlled for. This suggests that primary education expenditures do not explain much of the difference in the cross-country variation in the primary GER. The relationship shown in Figure 2.1 is also similar to the relationship between the primary NER and public primary education expenditure as a proportion of GNP.

Figure 2.2 shows the relationship between the primary GER and public primary education expenditure per pupil measured in purchasing power parity (PPP) dollars. Unlike Figure 2.1 this scatter plot shows a relatively strong and statistically significant relationship. The regression line suggests that the relationship between these two variables is negative; countries with higher per pupil expenditure at the primary level tend to have lower primary GERs. For example, based on the regression estimates a 10 per cent increase in primary expenditure per pupil reduces the primary GER by about 1 per cent. The relationship for the primary NER is also similar to the relationship shown in Figure 2.2. It should be noted,

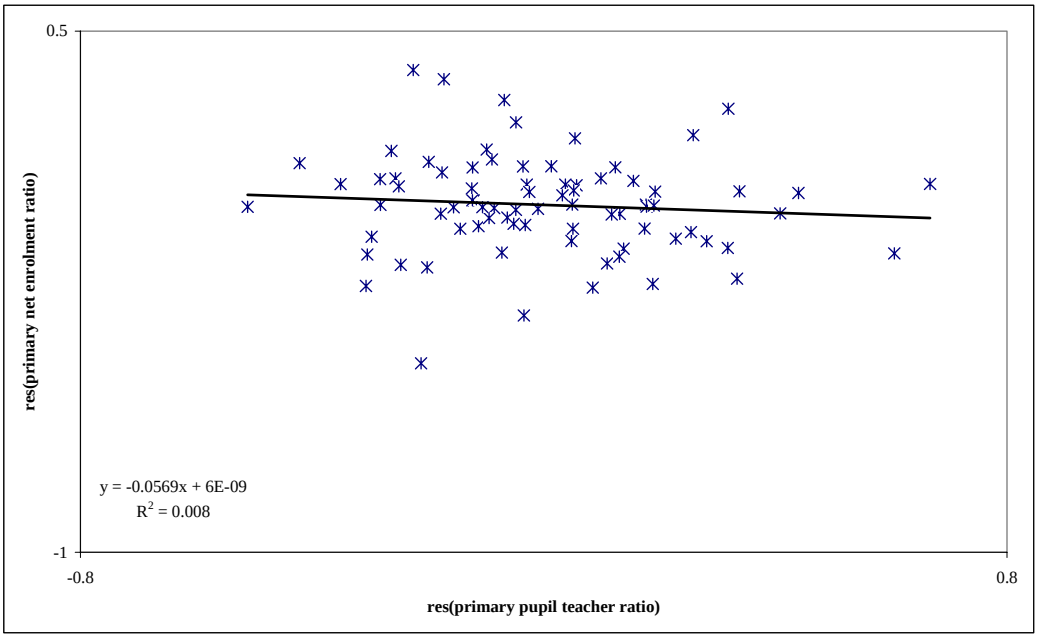
however, that the overall level of public spending on education is not controlled for in this scatter plot. Therefore, it is not possible to ascertain whether an increase in overall primary expenditure will result in significant changes in enrolment rates, as only per pupil, and not total, expenditure is controlled for. When total expenditure is controlled for it is again found to be an insignificant determinant of the primary gross and net enrolment rates (see Al-Samarrai 2002a).

Figure 2.2 Partial scatter plot of the primary GER and public primary education expenditure per pupil (US$PPP)




The primary pupil–teacher ratio is also used as a proxy variable for government spending on primary education. It is generally the case that teachers' salaries make up a large proportion of government primary education budgets and hence these budgets are strongly related to the intensity at which teachers are used. The pupil–teacher ratio measures teacher-use intensity and higher pupil–teacher ratios are associated with lower levels of education spending, holding other factors constant. Figure 2.3 illustrates the relationship between the primary NER and the pupil–teacher ratio. Similar to Figure 2.1, there is no strong relationship between the primary NER and the measure of primary education expenditure.

Figure 2.3 Partial scatter plot of the primary NER and the primary pupil–teacher ratio




Up to this point the focus has been on access indicators. In general, the results described above for enrolment rates are similar to the results for the primary survival and completion rate indicators, with two exceptions. As with the enrolment rates, the primary survival and completion rates are only very weakly associated with expenditure measured as a percentage of GNP and with the pupil–teacher ratio. This suggests that public education expenditure does not explain cross-country differences in completion and survival rates. Figures 2.4 and 2.5 report the scatters for the primary survival and completion rates against primary education expenditure per pupil.

The regression line in Figure 2.4 suggests that the relationship between primary school survival and spending per pupil is positive. While the direction of the relationship is expected the results suggest that the effect of per pupil spending on survival is small. For example, an increase in expenditure per pupil of US$PPP45 would increase the primary survival rate by 6 percentage points from its sample average of 54 per cent. The weakness of the relationship is also illustrated by the wide dispersion of countries around the regression line in Figure 2.4. This weak relationship does not hold when the primary school completion rate is used instead of the survival rate (see Figure 2.5). However, the lack of country observations on primary school completion may be driving this result.

Figure 2.4 Partial scatter plot of the primary survival rate and primary education expenditure per pupil

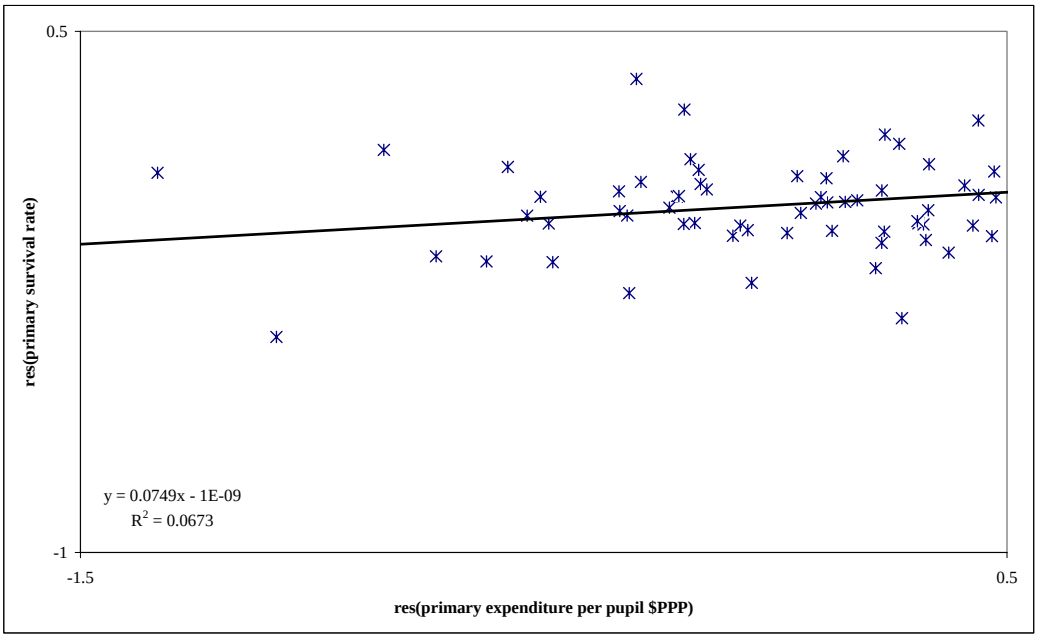
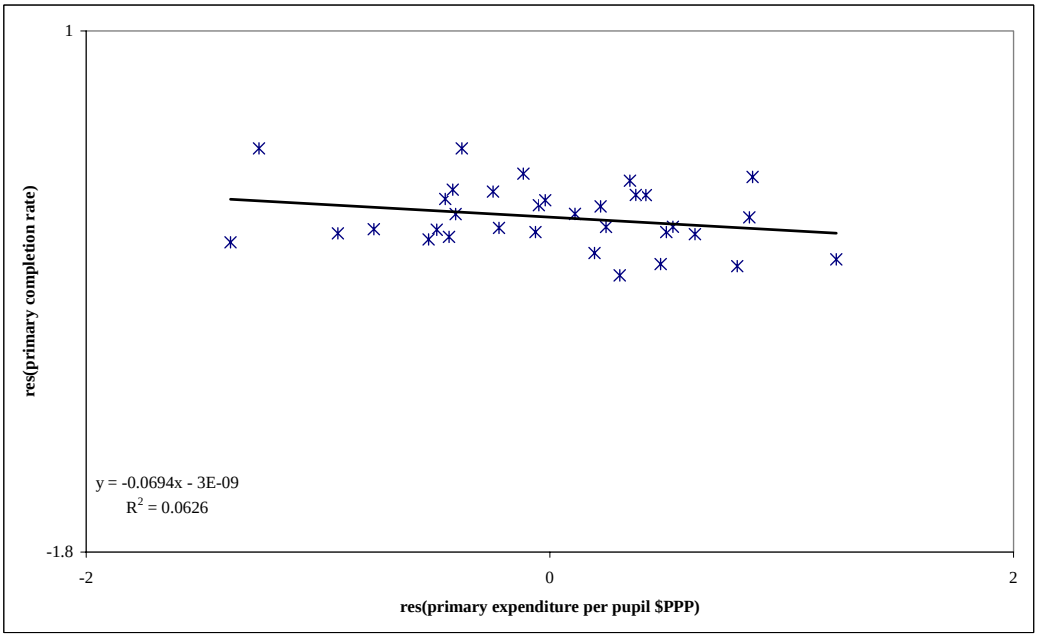



Figure 2.5 Partial scatter plot of the primary completion rate and primary education expenditure per pupil




The cross-country regression analysis has shown that the link between education outcomes and public education resources is at best weak. Three measures of resources were used and only per pupil expenditure appeared to be significant in explaining the cross-country

variations in education outcomes. But even in this case, the coefficient estimates were very small, suggesting that very large increases in per pupil spending would be required to improve primary school survival rates. Conversely, lower per pupil expenditure was associated with higher enrolment, but again very large changes in per pupil expenditure would be needed to effect very small changes on enrolment rates. The results are robust to different specifications of the regression model, different estimation techniques and controls for influential observations.[19] Furthermore, the relationship between resources and education outcomes appears to be similar in high- and low-income countries as well as in SSA. The results are also broadly in line with the literature reviewed in the previous section and summarised in Table 2.1.[20]

**2.3 Why is there no cross-country link?**

The results presented in the previous section could be taken at face value to imply that resources are not important and that increased resourcing will not lead to any marked improvements in education outcomes in developing countries. But this is counter-intuitive, given that increasing access to education to any significant extent evidently requires the building of new schools, training and remunerating new teachers and providing additional textbooks and other important inputs. In this respect, improving education outcomes will clearly require increased spending.

One explanation of the results presented here may be that they are driven by poor data. There has been much discussion of the reliability of the outcome and resource measures used in this study. A study of Tanzania documents clearly how different values of the same education expenditure measure are reported in different documents for the same year (Samoff 1991).[21] In some countries a large proportion of education expenditure is not allocated to specific education sub-sectors and, in some cases, this unallocated category includes expenditure that is in fact sub-sector specific. For example, textbook provision for all levels of the education system, in many SSA countries, is centrally controlled, and this expenditure falls into the unallocated category as it is not always disaggregated by education level. Primary textbook provision may not, therefore, necessarily be included in statistics on total primary education expenditure for all countries.[22] While UNESCO attempts to ensure the resource measures it reports are comparable, it is likely that there is some variation in the definition of these resource variables across countries. Further inaccuracies in the education

[19] For full details of the approaches adopted to test the robustness of the results see Al-Samarrai 2002a.
[20] Similar findings have been found for public spending on health and health outcomes (see Filmer and Pritchett 1999).
[21] Samoff looks at total education expenditure as a percentage of total government expenditure.
[22] It is also sometimes unclear whether budgeted expenditure figures are reported rather than actual expenditure.

expenditure data may occur because expenditure recorded as being spent on education may in fact be diverted for other uses. For example, in Uganda a public expenditure tracking survey found that only 30 per cent of capitation grants intended for schools actually reached them (Ablo and Reinikka 1998). These measurement errors are likely to bias the reported relationship between expenditure and outcomes shown in the previous section.

There may also be inaccuracies in how the dependent variables are reported. Most countries tend to have relatively good systems of collecting and reporting school data (e.g. total enrolment, enrolment by grade, repetition), although in some cases there may be incentives to inflate school enrolment data. Three of the four dependent variables used in this chapter rely on age-specific population data for their calculations (primary gross and net enrolment rates and the primary completion rates). Population data are usually estimated based on actual population data from the last census and assumptions regarding population growth since the census. The accuracy with which these population projections predict actual population levels varies and may be driving the results.[23]

While the reliability of the data may in part explain the absence of a strong relationship between outcomes and resources, it is unlikely to explain it in full. The results presented in this chapter are consistent with the results of similar studies reported in Table 2.1, which used different measures, sources and years of data. The results presented here are also in line with studies undertaken within individual developing countries. And the limited available evidence of these relationships across time within individual countries also shows no clear evidence of a link between resources and outcomes (Wössmann 2001).[24] It is improbable that poor data alone explain these findings. The remaining discussion focuses on two possible explanations of why resource levels may be unhelpful in explaining the variation in education outcomes: the omission of relevant variables and the technical efficiency of education expenditure.

Owing to the lack of cross-country data there are certain variables that may be expected to influence education outcomes which are not included in the regression analysis reported in the previous section. The omission of these variables is likely to bias the regression results. If these omitted variables are correlated with the resource variables then the reported relationship between resources and education outcomes may be biased.

One omission in the cross-country analysis presented here is the lack of information on household spending on education. There may be a stronger relationship between total education expenditure (household and government) and education outcomes than between

[23] Errors in population projections most commonly manifest themselves through NERs that are greater than one (100 per cent).

[24] This evidence is based on a sample of OECD and East Asian countries. The relationship over time may be different for developing countries.

government expenditure alone and education outcomes. The proportion of total education expenditure represented by household spending tends to vary considerably across countries, and may be a substantial proportion of the total (Mehrotra and Delamonica 1998; Penrose 1998). Furthermore, the costs of primary schooling faced by the household will partly determine whether they send their children to school. Therefore the weak link between public education expenditure and education outcomes may be partly due to variations in household education expenditure across countries. This explanation is likely to be more important with respect to indicators measuring access and participation, where recent experience suggests that changes in the costs facing households have led to dramatic changes in primary enrolment rates in Africa. When fees were abolished at primary level in Malawi (1994) and Uganda (1997), reductions in the costs facing households led to massive increases in the number of children attending primary school. In Malawi, the primary gross enrolment rate increased from 93 per cent in 1993 to 134 per cent in 1997, and in Uganda from 83 to 134 per cent after primary fees were abolished (see Chapter 3).

The effectiveness of the public expenditure management system is also an important area in which the link between resources and outcomes is mediated. Unfortunately, no cross-country data are available to measure the effectiveness of public education expenditure. The budgetary process and the relationship between planning and budgeting are key to understanding the relationship between public expenditure and education outcomes, and it has been argued that a major reason why education reforms have failed in the past is because they have neglected the budgeting process (Penrose 1993). In many developing countries, decisions regarding the composition of education expenditure are partly determined by budgetary outturns. When available resources fall short of planned expenditure it is easier to cut back on textbook provision than on teachers' salaries, which leads to inefficient resource allocations. Differences in the effectiveness of public expenditure management systems across countries may, therefore, help explain the weak link between resources and outcomes.

Variables that account for the composition of public expenditure are also excluded from the analysis undertaken in this chapter. Data available from UNESCO disaggregate total education expenditure into salary and non-salary expenditure, although the reporting of these data was relatively poor across countries. Teacher salaries as a proportion of total recurrent expenditure was initially included in the analysis, but it proved to be insignificant and did not change the conclusions regarding the resource variables.[25] Information on other inputs that may have a stronger impact on education outcomes, such as textbooks, were unavailable; controlling for these inputs may explain the lack of a relationship between resources and education outcomes. But the micro-based evidence indicates that the current composition of

[25] These results are available from the author on request.

expenditure across inputs does not strengthen the link between resources and outcomes. It may be that the current composition of education expenditure in most countries is technically inefficient.

Altering the composition of this expenditure may, therefore, result in improved efficiency and marked improvements in outcomes. Pritchett and Filmer (1999) argue that current allocations of resources across different input categories (e.g. teachers, textbooks) are inconsistent with an output maximising model of input choice. They argue that if this composition were altered by, for example, spending additional resources in a different way, this spending would lead to better education outcomes. Their evidence from micro-based studies suggests that the cost-effectiveness of teacher salaries is low in comparison with other inputs such as textbooks and other instructional materials (Pritchett and Filmer 1999). This implies that additional resources concentrated towards non-salary inputs may have larger impacts on education outcomes.

Pritchett and Filmer (1999) suggest that the lower cost-effectiveness of teacher inputs is partly due to teachers being able to distort the composition of public expenditure in their favour.[26] Within national education systems there are other groups apart from teachers who determine the composition of public education spending, and may lead to inefficient allocations. For example, it may be more politically attractive to be able to demonstrate that many schools have been built than to claim that teachers have been well trained or that good instructional materials have been provided. Outcomes may be improved by reallocating existing resources in addition to increasing resources. But while it may be desirable to reallocate resources, it may not be easy: in a cross-country study on the politics of education reform, Corrales (1999) suggests that access reforms are easier to adopt and to implement compared with reforms to improve quality.

While the cross-country analysis has demonstrated a weak link this evidence can at best be suggestive given the limitations of the data and analysis that is possible at such an aggregate level. The purpose of this chapter has been to emphasise that across developing countries increased resourcing may not necessarily lead to countries achieving the EFA goals. However, it is clear from the cross-country work that country studies are required to unpack the relationship between public education expenditure and education outcomes. The following chapters explore the relationship between public spending and education outcomes in Botswana, Malawi and Uganda; countries that have been successful in some aspects of universalising primary education.

[26] It should be noted that this argument does not suggest that teachers are currently paid too much.

## 3 Universalising primary education in Botswana, Malawi and Uganda: education policy and trends

The next five chapters are based primarily on the cross-country case studies undertaken in Botswana, Malawi and Uganda. More detailed discussion of the issues raised in these chapters can generally be found in the country case-study reports. The time-frame for the analysis presented in these chapters is centred on announcements and significant policy changes on universalising primary education and hence differs for each country. In Botswana, moves towards UPE began in 1973 with the halving of primary school fees but it was only in the 1979 elections that the ruling party included free and universal primary education as part of its manifesto and in 1980 all primary school fees were abolished. This was partly owing to the conclusions of the first education commission which led to the 1977 national policy on education. Therefore, the Botswana case study analyses the Botswana education system from 1977 onward. Malawi and Uganda have made moves towards UPE more recently. In Malawi, after some reductions in the fees charged to parents in the early 1990s all fees were abolished in 1994 when multi-party elections brought in a new government. In Uganda, the presidential election pledge in 1996 to provide fee-free primary education to four members of each household began the move towards UPE. Therefore, in Malawi and Uganda the country case studies analyse the education system from 1990 and provide a good overview of the education systems in these countries before and after the introduction of UPE.

Before exploring the trends in access to primary education and the impact UPE has had on education quality this chapter briefly describes the economic and political context within which these reforms took place. The chapter then goes on to discuss the impact that UPE reforms had on the education system in terms of both access to and the quality of the education system.

### 3.1 UPE and education policy reform

#### *3.1.1 Botswana*

*Education policy*

Similar to many other African countries education policy in Botswana directly after independence was initially concerned with post-primary education in order to educate Batswana to replace the predominantly non-local civil service. For example, in 1965 only a quarter of civil servants were Batswana. While post-primary schooling was focused on meeting manpower needs, rural development policy during the mid-1970s led to a large expansion in rural infrastructure including the establishment of a large number of new rural

primary schools.[27] To increase participation in these newly established rural schools and make primary education affordable to the rural population school fees were halved in 1973.[28] The reduction in fees and the increased availability of primary schools led to an almost doubling of primary school enrolments in the first ten years of independence. However, this expansion was not without problems. Public expenditure, in terms of per pupil spending, was still weighted heavily towards the post-primary sector and the quality of primary education provision was compromised. Despite government and community efforts classroom construction could not keep pace with enrolment expansion and the increase in demand for primary school teachers could only be met by employing untrained teachers (Colclough and McCarthy 1980).

In 1975 an education commission was set up and charged with analysing the state of the education system and to produce recommendations on the direction of educational development. The recommendations from this commission accorded primary education the highest priority and led to the National Policy on Education (NPE), which was adopted in 1977. Primary education was accorded this role partly for equity reasons and the view that social cohesiveness would be enhanced with universal basic education. In addition, the commission recognised that good quality primary education would provide good candidates for secondary education, which in turn would provide the national economy with high quality skilled manpower. Although UPE was seen to be important it was set within a wider objective of providing a nine-year basic education to all Batswana.[29] An important component of the plans outlined for the achievement of UPE set out in the commission report was the abolition of all remaining school fees at the primary level. It is important to note that the introduction of UPE and the abolition of fees were decisions that were taken in the context of the whole education system and the broader economy and were not separate from other policy developments in education. For example, it was recognised that expanding primary education was in turn likely to raise demand for secondary schooling and targets were set to improve the transition rate from primary to secondary school.

The NPE was incorporated in the next National Development Plan (NDP 5) and led to the complete abolition of primary school fees in 1980. The following decade was characterised by a relatively large expansion in primary school access in Botswana and by the early 1990s primary school gross enrolment rates exceeded 100 per cent and net enrolment rates were in the nineties. At the same time there were efforts to improve the quality of

[27] This was associated with the Accelerated Rural Development Programme (ARDP), a three-year programme beginning in 1973 which aimed at improving rural infrastructure.
[28] The annual school fee was reduced from BWP6 to BWP3 in this year.
[29] The Botswana education system consists of seven years of primary education followed by five years of secondary schooling.

primary education. After the 1977 commission report a new primary school curriculum was introduced and efforts were made to upgrade teachers' training and qualifications.[30]

In 1992 the National Commission on Education was reconvened. In spite of significant achievements in expanding primary and more broadly basic education there were concerns regarding the quality of the education provided and the effectiveness of the education system in preparing individuals for the world of work. In addition, it was recognised at this time that the primary school infrastructure had not kept pace with the expansion in primary school enrolment. This was not owing primarily to lack of resources but to the lack of capacity in local authorities to organise and manage construction projects and also to the lack of competent contractors. Classroom shortage had led to double-shifting of classes, which was unpopular with teachers. It is also interesting to note that while the vast majority of the relevant age group are enrolled in primary school there are groups within Botswana that are persistently under-represented in primary school. Therefore with GERs well in excess of 100 per cent and NERs close to 100 plans still talk of UPE as not having been achieved. Efforts to reach these hard-to-reach groups have not been particularly successful.

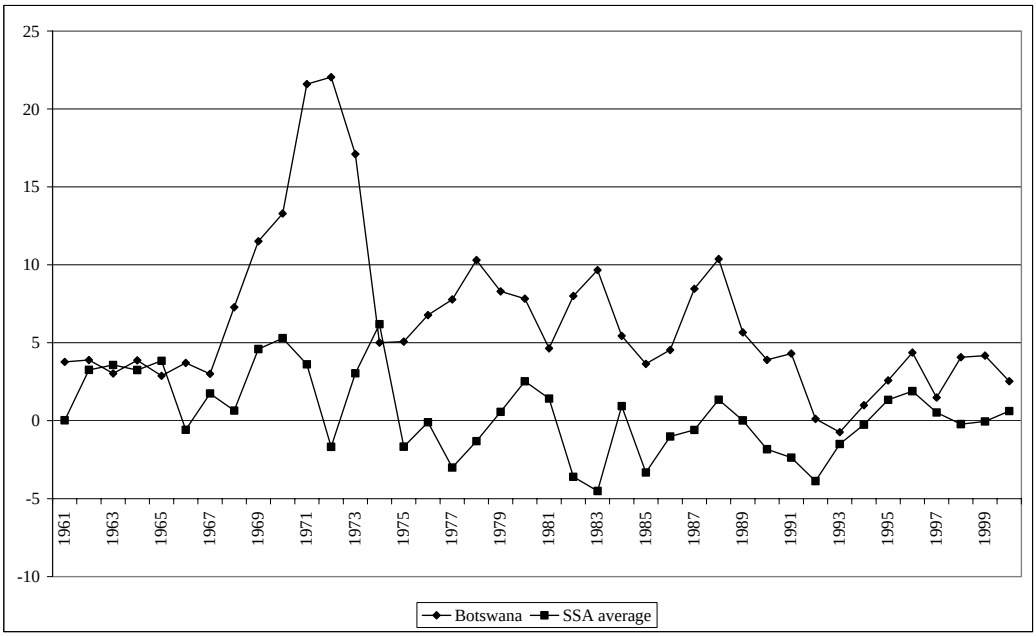
*Economic and political context of the introduction of UPE*

At the time of independence, in 1966, Botswana was one of the poorest countries in the world and heavily dependent on budgetary support from the UK.[31] Initially, therefore, the government was severely resource-constrained and while a substantially expanded education system was desirable it was not feasible. This changed dramatically with the discovery of substantial mineral deposits and in particularly diamonds in the late 1960s. These discoveries had a positive impact on Botswana's economic growth and between 1970 and 1990 the Botswana economy was one of the fastest growing economies in the world and far exceeded economic growth in the rest of SSA as a whole (see Figure 3.1). In 1973 Botswana no longer needed recurrent budget support from the UK.

[30] To provide the increased number of primary school teachers necessary a national service scheme was introduced that employed senior secondary school leavers as unqualified primary school teachers. This was seen to improve primary school quality as previously unqualified teachers had lower-level formal qualifications.

[31] In 1966 domestic revenue was able to cover only half of government expenditure and the rest of the recurrent and development budget was supported by grants-in-aid from the UK.

Figure 3.1 Real annual growth rate in GDP per capita in Botswana and SSA




Source: World Development Indicators 2001

The rapid economic growth also increased the resources available to the government of Botswana for development. Government revenue grew rapidly since independence. Government expenditure grew rapidly from the beginning of the 1970s and between 1977 and 1986 government expenditure grew at an average annual rate of 12 per cent.[32] In 1977 the government was spending on average US$457 (1995 constant prices) for each member of the population compared to 1990 when government expenditure per capita represented US$1,406 in constant 1995 prices. This represents a very substantial real increase in government expenditure per capita during the 1980s.[33] Therefore at the time that UPE was being introduced in Botswana the economic position and in particular the resources available to the government were improving dramatically.

The Botswana Democratic Party (BDP) has been in government since independence and in the 1965 election campaign the BDP argued for four years of compulsory primary schooling. However, it was soon recognised that the resources were not available to implement this policy. This led to opposition party criticism of the government for pursuing elitist education policy given the initial focus on post-primary education. In the 1969 elections

[32] Between 1966/67 and 1976/77 government expenditure grew at an average annual rate of 19 per cent. This was slower than the growth in revenue of about 30 per cent annually (Colclough and McCarthy 1980).

[33] This trend continued through the 1990s. In 1999 government expenditure per capita was $2,043 in 1995 constant prices.

BDP support dropped and opposition parties became more popular. This led the BDP to focus on rural development as a key area to maintain and improve its support in rural areas. The Accelerated Rural Development Programme (ARDP) was implemented soon after the election and helped the BDP secure a greater share of the vote in the 1974 elections. The ARDP included primary school expansion and was extremely popular with the rural electorate. Therefore, initial expansion of primary schooling came about in part through increased political pressure and a realisation from the BDP that rural development was key to electoral success. The National Commission on Education was also in part set up because of political pressure from members of parliament who were concerned at the decline in the quality of primary education associated with the early primary school expansion (see above).

### *3.1.2 Malawi*

*Education policy*

Malawi has had a very different experience in terms of education policy and with UPE in particular when compared to Botswana. Only in the mid-1980s, with the publication of the second education development plan (1985–95) was there a significant shift away from post-primary education and towards primary education. This focus on primary was advocated primarily for equity reasons. However, it was also partly brought on by the changing international education policy agenda and the major influence international donors historically have had on the Malawian education sector (see Rose 2002).

As in Botswana, reduction in fees was seen to be a crucial component of achieving the objective of increased access at primary level. Six years after the plan was first introduced partial fee abolition began. In 1991/2 school fees were abolished in Standard 1 of primary school with the intention that this cohort of students would be the first cohort to receive fee-free primary education and subsequent cohorts would follow. In addition to this government programme the United States Agency for International Development's (USAID's) Girls Attainment in Basic Literacy Programme (GABLE) provided funding for the waiving of fees for all girls in Standards 2 to 8 who had not repeated. The plan and the reduction in fees registered some limited success in improving access to primary education during its implementation. While the ambitious targets set for the primary NER were not met the NER stood at 71 per cent in 1993.

After the first multi-party elections, held in 1994, the new government announced the abolition of all primary school fees. Government was to be responsible for all the costs of primary education but this translated in effect to the abolition of school fees and regulations obligating parents to provide school uniforms for their children. The policy began

immediately and all fees were abolished in the 1994/5 school year.[34] This led to an additional one million primary school entrants in this year representing an increase of over 50 per cent in total enrolment. Very little planning for the abolition of fees took place and the massive response was unpredicted. No strategy was in place in Malawi to accommodate the expansion in primary school enrolments in that year.

In 1995, with the help of USAID, a strategy to deal with the recent policy reform in education was set out in the 1995 Education Policy and Investment Framework (PIF). This draft document was consistently revised in close consultation with the key education donors in Malawi. These revisions have broadened the initial PIF into a sector-wide development plan that has detailed costings of the strategies included. Key proposals for basic education set out in the PIF are:

• Equal access for all children to quality primary education shall be the main thrust of Government policy on basic education access.
• Government shall promote strong partnerships with other basic education providers with the aim of strengthening the involvement of private education providers.
• Government shall be proactive in its investigation of strategies needing to be introduced, to make education all-inclusive.
• Gender equity shall be promoted by making the school environment supportive of the needs of both boys and girls.
• The Ministry of Education Sports and Culture (MoESC) shall establish and maintain agreed minimum standards for the provision of quality teaching and learning in all primary schools.
• Government shall vigorously pursue its policy of decentralisation of responsibilities and services so as to support schools and to ensure efficiency gains.

(Government of Malawi 2000a)

The PIF is the current policy framework document for Malawi and includes policies and strategies for the development of the entire education system until 2012.

*Economic and political context of the introduction of UPE*

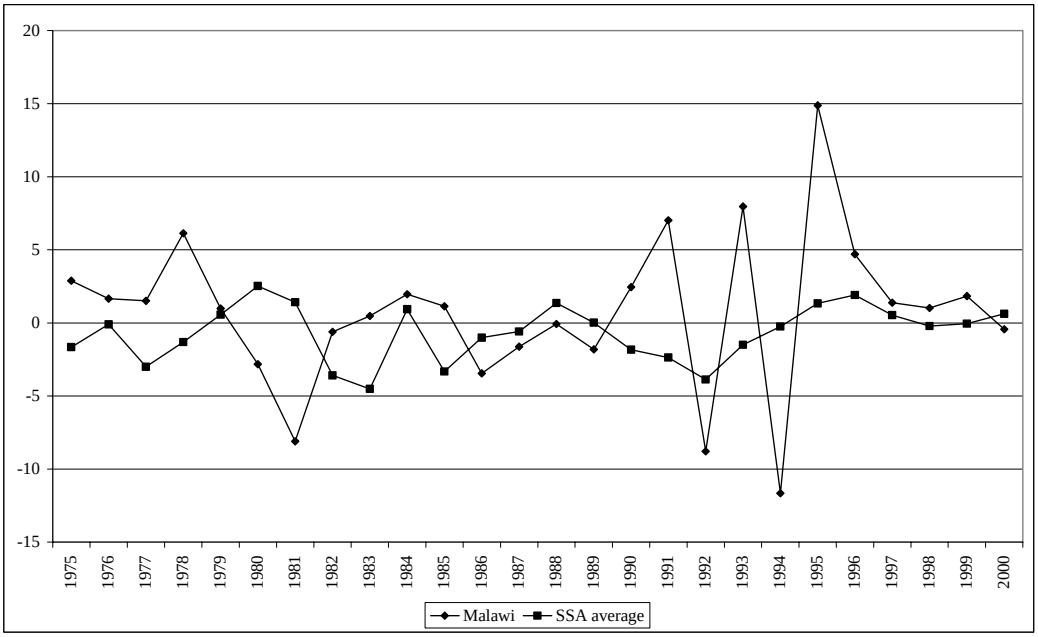
The late 1980s and early 1990s in Malawi were characterised by serious macroeconomic instability. For example, in 1994 real annual growth in GDP per capita was -12 per cent but rebounded the following year to 15 per cent. Therefore, UPE was being introduced at a time of severe macroeconomic instability. Since the mid-1990s, however, Malawi's growth record has been impressive and slightly higher than the SSA regional average (see Figure 3.2).

[34] The school year ran from October to July but was changed in 1997 to run from January to October.

Government revenues have also experienced the same fluctuations but have been rising in line with the growth in GDP since the mid-1990s. Total government expenditure rose as a proportion of GDP in the early 1990s. However, in 1996/7 government expenditure declined and had only begun to reach its early 1990 levels in 2000.

In 1990/1 government recurrent expenditure stood at US$38 per capita in 1995 constant prices. Although the economy was unstable during the 1990s, government expenditure per capita increased in real terms to around US$50 at the time of the introduction of UPE in 1994/5. This modest increase continued throughout the 1990s and government expenditure per capita stood at US$55 in 2000 in constant 1995 prices. This represents only modest increases in government expenditure per capita during the 1990s. Therefore, the resources available to government for the expansion of primary schooling did not change during the 1990s by a great deal.

Figure 3.2 Real annual growth rate in GDP per capita in Malawi and SSA




Source: World Development Indicators 2001

In 1994, the first multi-party elections were held in Malawi since independence and the Malawi Congress Party (MCP) and the United Democratic Front (UDF) were the main political parties contesting the election. In campaigning the MCP (the incumbent party) continued to stress their phased approach to the abolition of fees and primary education expansion. On the other hand the UDF campaigned on the immediate abolition of all primary school fees. While the introduction of free primary education was an extremely popular election pledge the UDF also saw increased access to primary education as a crucial

component of wider development goals. In line with international education policy research the UDF saw a strong link between education and social and economic development. Therefore, at least to some extent, education was seen as a solution to the economic problems faced by Malawi at the time.

At the time of the introduction of FPE many opposition politicians were pessimistic about the government's ability to successfully implement FPE in the context of economic crisis. Furthermore, many international donors, crucial financially to the Malawian education sector, also viewed FPE in this way and were at first reluctant to throw their energy and resources at the FPE initiative.

### *3.1.3 Uganda*

*Education policy*

Of the three countries Uganda has had the most recent experience, with UPE being introduced in the late 1990s. Unlike Botswana and Malawi significant efforts had not been made prior to the introduction of UPE in 1997 to reduce fees at the primary level and expand access to primary schooling. During the 1970s and early 1980s political and economic instability followed by civil war affected the government's ability to run the primary school system. Because of this, Parent–Teacher Association (PTA) fees and community support for primary schools became an extremely important source of school funding. Before the mid-1980s various commissions had been set up to review the education sector and make recommendations. For example, in 1977 Idi Amin's government set up a commission that included universal primary schooling as an objective and set out a plan to abolish fees at the primary level. However, none of these recommendations and plans were acted upon.

In 1986 the National Resistance Movement (NRM) took power and a commission was set up in 1987 to undertake a thorough review of the education system (Education Policy Review Commission). The Commission submitted its report in 1989 but it was not until 1992 that the Commission's recommendations were incorporated in the government's White Paper on Education. The White Paper on Education covered the whole education sector and provided costings of proposed policy reforms. Box 3.1 presents the aims and objectives of primary education set out in the White Paper.

Box 3.1 Objectives of primary education in Uganda

| |
|---|
| • To enable individuals to acquire functional literacy, numeracy and communication skills in one Ugandan language and English |
| • To develop and maintain sound mental and physical health |

• To instil the value of living and working co-operatively with other people and caring for others in the community

• To develop cultural, moral and spiritual values of life

• To inculcate an understanding of, and appreciation for, the protection and utilisation of the natural environment using scientific and technological knowledge

• To develop a sense of patriotism and unity, an understanding of one's rights and responsibilities and an appreciation of the need to participate actively in civic matters

• To develop pre-requisites for continuing education and development

• To develop adequate practical skills for making a living.

The White Paper set out staggered targets for the achievement of UPE beginning with the first four years in 2000 and the complete primary education cycle no later than 2010. As in Botswana and Malawi, fees were seen in the White Paper to be a crucial impediment to the achievement of these aims. Recognising the limited financial and human resources available to the education system, primary school fees were recommended to be abolished by one primary standard at a time beginning with Standard 4 in 1992/3 and finishing with Standard 1 in 1999/2000. PTAs, which had been so crucial in their financing and support role at the primary school level were to have their role at the school level limited to welfare concerns of students and teachers and the overall development of schools.

Although the government acted on some of the policy reforms outlined in the White Paper and in particular provided increased financing to schools to cover primary school fees this did not lead to large increases in enrolment. This was partly owing to the fact that PTA fees were still being charged in most schools and additional government resources were complementing and not substituting these fees. By 1996, the primary GER stood at 80 per cent.

In the 1996 presidential campaign most of the candidates included free primary education as part of their election promises. After Musevini won the elections he announced in December 1996 that primary education for four children per family was to be provided free beginning in the 1997 school year. Government committed itself to providing:

• Tuition fees for four children per family[35]

• Instructional materials

• School construction

• Teacher training

• Teacher salaries.

These reforms led to an additional 2.2 million pupils entering primary school in that year and represented a 73 per cent increase in total enrolment in government aided primary schools.

As a response to the partly unpredicted expansion in primary school the Ministry of Education and Sports (MoES) and its donor partners set about producing a comprehensive sector development plan. The Education Strategic Investment Plan (ESIP) was published in 1998 and covered a five-year period (1998–2003). Similar to Malawi's PIF, this policy document set out a set of objectives and strategies for the entire education system over the plan period. The ESIP broad priority objectives focused specifically on improving the quality of primary education and the capacity of the education management system to operate effectively (see Box 3.2).

Box 3.2 Uganda ESIP broad priority objectives

• To make significant and permanent gains in achieving equitable access to education at all levels

• To improve considerably the quality of education, particularly at the primary level

• To enhance the management of education service delivery at all levels, particularly the district

• To develop the capacity of MoES to plan, programme and manage an investment portfolio that will effectively and efficiently develop the education sector.

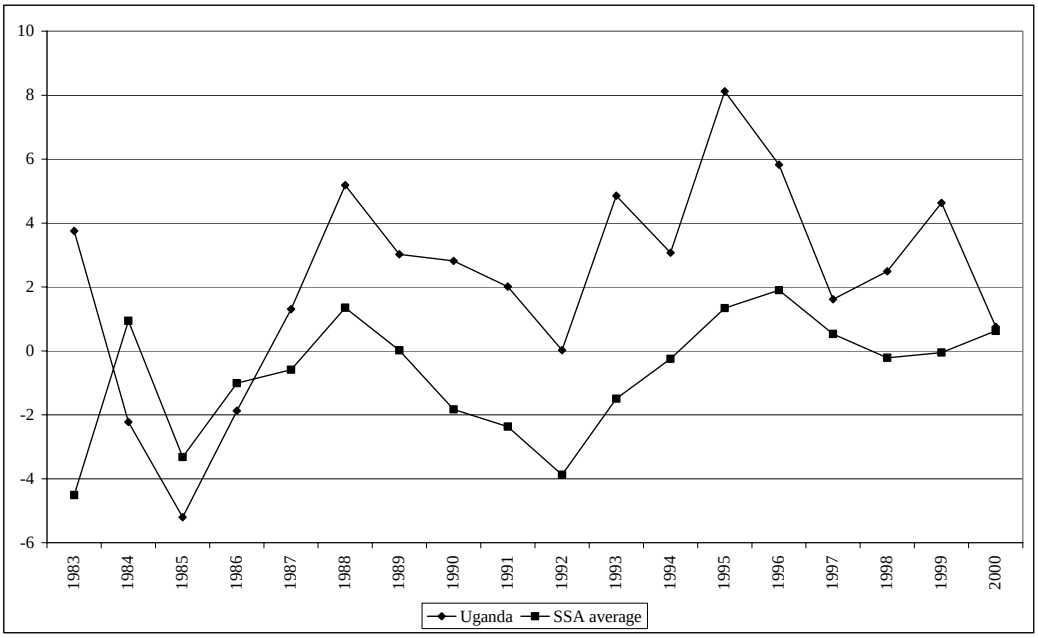
(Republic of Uganda 1998)

The ESIP has provided a framework under which the education sector has developed over the last five years and the programme has had some notable successes over its five years.

*Economic and political context of the introduction of UPE*

Figure 3.3 Real annual growth rate in GDP per capita in Uganda and SSA

[35] A capitation grant was calculated for schools which amounted annually to UGS5,000 for each pupil in Standards 1–3 and UGS8,100 for each pupil in Standards 4–7.




Political and economic instability before 1986 led to negative per capita growth rates in Uganda. Since 1987, however, Uganda has been growing much faster than SSA as a whole and while the trend is a little erratic it appears as though growth rates are accelerating (see Figure 3.3). Government revenues maintained their share of GDP throughout the 1990s implying that real revenues available to the government increased throughout the 1990s. Total government expenditure declined as a proportion of GDP in the mid-1990s although it improved again at the end of the 1990s.

In 1990/1 government recurrent expenditure stood at US$50 per capita in 1995 constant prices. Although the economy was growing during the early 1990s, government expenditure per capita increased only marginally and stood at around US$53 at the time of the introduction of UPE in 1994/5. Since then, public expenditure per capita has been rising steadily and in 2000 reached US$73 per capita. Therefore, the resources available to government for the expansion of primary schooling have been increasing ever since 1997.

Similar to the Malawi situation, free primary education came about in Uganda through a campaign pledge. Many were sceptical initially that the government would go ahead with its proposals but were proved wrong. The abolition of PTA fees and the curtailment of PTA responsibilities at the school level were seen to be an attempt by the government to reassert control over the primary education system. The government had made efforts to abolish PTA fees to schools and abolish private tutoring, common in Uganda, before the White Paper was published. This was unpopular among both parents and schools partly because no government financing was to take the place of PTA fees and partly because

this represented a potential reduction in the power of PTAs in the primary education system (see Muwanga 2000).

UPE in Uganda has not been a completely popular education reform and a number of tensions have arisen. First, PTA fees were partly used to supplement the salaries of teachers. With the abolition of PTA fees some teachers have seen their salaries decline and teachers, particularly in urban areas, have not been wholly supportive of the reform. Parents of students who were already in the system have also been critical owing to the real and perceived decline in the quality of education. This has led many parents who are financially capable to send their children to private schools (see, for example, Fiedrich 1999). The abolition of all fees has also been unpopular with the various religious bodies in Uganda as it has reduced their power in the running of government-aided schools (Muwanga 2000).

### 3.2 Education system trends

What happened to the education systems in these countries after the introduction of UPE? How did the education system after UPE compare with the system before primary school expansion? This section addresses these issues by exploring trends using a slightly broader set of education outcomes than those used in the previous section at the cross-country level. Table 3.1 shows the characteristics of each country's primary education system. Botswana and Uganda have 7-year primary education systems while Malawi has an 8-year cycle. If children start at the official starting age the earliest they complete primary school is 13 in Botswana and Malawi and 12 in Uganda. It is clear that there are marked differences in the number of primary school places needed to achieve UPE in each country. Botswana has by far the smallest population of primary-age children in absolute numbers and as a proportion of the total population. Differences in the percentage of the population that is of primary school age reflect differences in life expectancy across the three countries and give a sense of the burden on the working-age population of the education system. Malawi, with a longer primary education cycle and larger population than Botswana, has approximately one-fifth of its population in the primary-age category. Uganda has a total population 13 times the size of Botswana's and a much larger proportion of this population is of primary school age. Notwithstanding differences in resource availability, Table 3.1 shows that the challenge of achieving UPE and managing primary education is very different in each country.

Table 3.1 Characteristics of primary education systems in Botswana, Malawi and Uganda

| | No. of years of primary schooling | Official starting age | No. of primary schools (2000) | Primary school-age population (2000) | |
|---|---|---|---|---|---|
| | | | | (000s) | (% of total population) |

| | | | | | |
|---|---|---|---|---|---|
| Botswana | 7 | 7 | 721 | 274 | 16.6 |
| Malawi | 8 | 6 | 4,673 | 2,214 | 21.5 |
| Uganda | 7 | 6 | 11,578 | 5,113 | 23.0 |

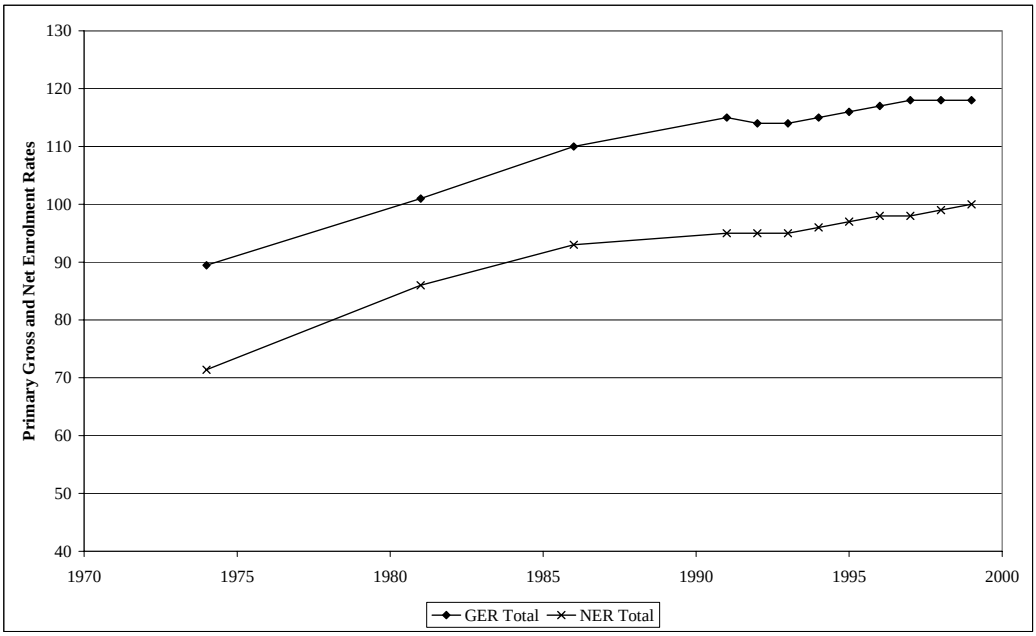
Source: Botswana population data for 1999. Total population data taken from World Development Indicators. All other data from country reports and data sets

Before moving on to exploring the evolution of primary education in these countries during UPE it is important to discuss the expected impact on education outcomes of expanding primary education. Significantly, expanding primary education systems tends to imply that poorer socio-economic groups gain access to primary education for the first time (see Chapter 6). It is a common finding, in both developing and developed countries, that education participation and achievement are heavily affected by socio-economic status. Therefore, holding all other factors constant, primary school expansion will tend to lead to deterioration in primary learning outcomes.

### *3.2.1 Changes in access to primary education*

Figure 3.4 shows the evolution of primary gross and net enrolment rates in Botswana since 1974. Enrolment rates increased throughout the 1970s and 1980s. By 1981, the year after fees were abolished, primary gross enrolment rates were above 100 per cent although the net enrolment rate stood at only 86 per cent. The net enrolment rate continued to increase over the 1990s and reached 100 per cent in 1999. This implies that in 1999 all children of primary school age were attending primary school. However, this figure is disputed and it is suggested that there are still small groups, particularly in remote areas, of primary-age children who do not go to primary school. Female enrolment was consistently higher than male enrolment in Botswana until the late 1990s. The gap in the GER narrowed considerably during the 1980s and by the end of the 1990s the male GER was slightly higher than the female GER.

Figure 3.4: Primary education access in Botswana

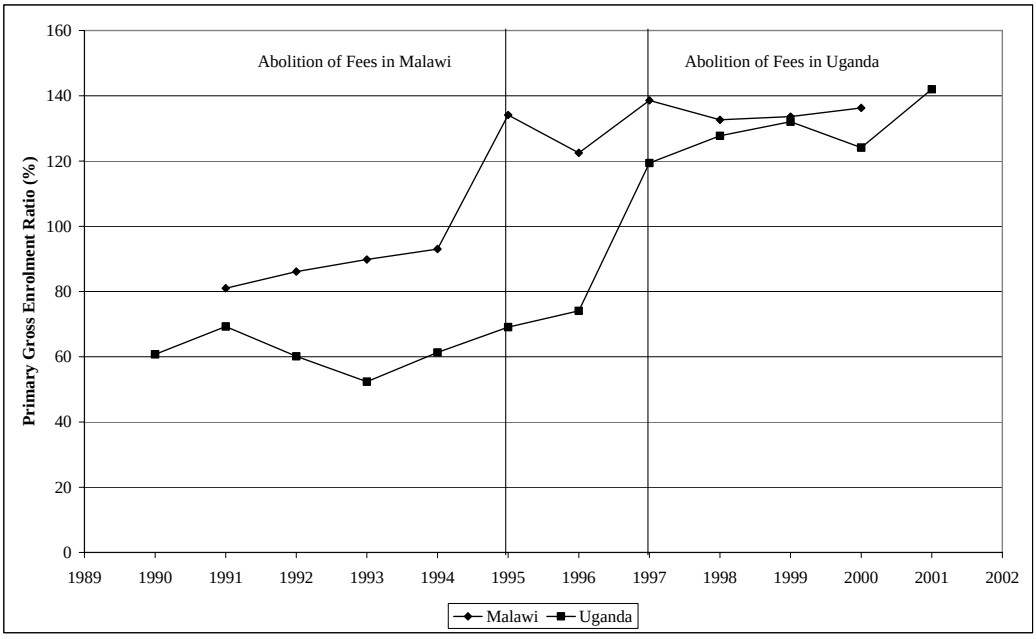



Source: Ministry of Education statistics reports (various years)

Unfortunately, enrolment rate information for Botswana is patchy before the 1990s and it is not possible from the graph to ascertain whether there were any large and significant jumps in enrolment due to the halving of fees in 1973 and their total abolition in 1980. In 1973 enrolment did increase significantly owing to the abolition of fees. Standard 1 enrolment increased by 60 per cent in 1973 compared to its 1972 level and overall primary enrolments grew by 17 per cent. Between 1973 and 1979 primary enrolments continued to grow on average by 9 per cent annually. The complete abolition of fees in 1980 did not have such a large impact on enrolment. Standard 1 enrolment increased by 17 per cent and total enrolment by 9 per cent between 1979 and 1980. These rates were slightly higher than growth in the previous year where Standard 1 enrolments increased by 13 per cent and total enrolment by 7 per cent. Therefore, the response to the reduction and abolition of fees was significant and given school-age population growth rates of 4–5 per cent would have represented jumps in the primary GERs of approximately 12 and 4 percentage points in 1973 and 1980 respectively.

Figure 3.5 Primary gross enrolment rates in Malawi and Uganda[36]

[36] Enrolment data for Uganda is for government grant-aided schools unless otherwise stated. Statistics on private primary education have not been collected systematically during the 1990s and their inclusion may lead to misleading trends. For a fuller account of statistical issues in Uganda see the Uganda country report.




Note: Before 1997 the Malawian primary school year began in October and ended in July. To ensure comparability with Uganda the dates before 1997 for Malawi refer to the year in which the bulk of the primary school year fell. For example, the 1994/5 school year in Malawi is marked on the figure as 1995.
Source: Malawi – MoESC education statistics (various years); Uganda – MoES statistical abstracts (various years)

Malawi and Uganda had similar experiences with fee abolition in the 1990s (see Figure 3.5). Unlike Botswana the announcement of UPE and fee abolition led to dramatic increases in the primary GER. In Malawi, the primary GER was increasing gradually with the limited fee abolition in place since 1991. However, when fees were abolished in the 1994/5 school year (shown in Figure 3.5 as 1995) the primary GER jumped by 41 percentage points representing an increase in total enrolment of just under one million pupils. Enrolment in the primary education system increased by 50 per cent in one year. Much of this enrolment increase was concentrated in Standard 1 with enrolment in this grade increasing by 60 per cent. However, substantial re-entry into the education system occurred in higher standards as well.

In Uganda primary school enrolment increased between 1996 and 1997 from 3.1 million to 5.3 million pupils, a 70 per cent increase. Primary gross enrolment rates increased by a staggering 45 percentage points from 74 to 119 per cent in one year. A much larger proportion of the new enrolment in Uganda was concentrated in Standard 1 compared to Malawi. Enrolments in Standard 1 increased by 150 per cent, from 0.8 million in 1996 to 2 million in 1997. Increases in Standard 1 enrolment accounted for 55 per cent of the total

increase in enrolment compared to only 39 per cent in Malawi. Re-entry into higher grades was also common particularly in Standards 2 to 5.

The post-UPE primary GERs shown in Figure 3.5 imply that a substantial proportion of the new enrolees were over or under age. To obtain an understanding of the extent of over- and under-age enrolment in these systems the primary NER is used. This measures the proportion of the school-age population that is actually enrolled in primary school. Information on age-specific primary enrolment is needed in order to calculate the primary NER. This information is often poorly recorded and coupled with the errors in projecting the school-age population, also needed for this indicator, NERs from education management information systems (EMISs) are notoriously inaccurate.[37] For Malawi, the primary NER in the early 1990s varied between 50 and 60 per cent. Given the levels of the GER this suggests that approximately 20–30 per cent of enrolment in primary school was out of the official school age range in the early 1990s.[38] In Uganda, over- and under-age enrolment accounted for between 13 and 22 per cent of total primary enrolment pre-UPE.

In the post-UPE period in Malawi and Uganda household and education surveys were undertaken which report much more accurate statistics on net enrolment rates. Table 3.2 reports the NERs from these studies. The latest figures imply that approximately 27 and 39 per cent of total enrolment is under or over age in Malawi and Uganda respectively.[39] Therefore it appears that under- and over-age enrolment in primary schooling has increased in both countries, but particularly in Uganda, after the introduction of UPE. This is hardly surprising given the many accounts of older children entering primary school for the first time owing to the UPE initiative.

Table 3.2 Primary net enrolment rates from household and education surveys

| | Malawi | | | Uganda | | |
|---|---|---|---|---|---|---|
| | Male | Female | Total | Male | Female | Total |
| 1997–8 | 77 | 76 | 78 | - | - | - |
| 2001–2 | 81 | 81 | 81 | 87 | 87 | 87 |

Source: 1997–8 figures for Malawi from the Malawi Integrated Household Survey reported in Al-Samarrai and Zaman 2002. 2001–2 figures for Malawi are for 2002 and are reported in Malawi Central Statistical Office and ORC Macro 2003. 2001–2 figures for Uganda are for 2001 and are reported in Uganda Bureau of Statistics and ORC Macro 2002

[37] Given the definition of the NER it is not possible for this rate to exceed 100 per cent. However, in the latest statistical abstracts in Malawi and Uganda the primary NER is reported as being over 100 per cent. Primary NERs for Malawi and Uganda are shown in Appendix Table 3.1.

[38] The percentage of primary school enrolment out of the official school age range is calculated by dividing the difference between the primary GER and NER by the primary NER.

[39] Malawi figure is calculated using the 2000 primary GER since no information on the GER for 2002 was available.

The most recent studies shown in Table 3.2 suggest that although Malawi's primary GERs are well above 100 per cent NERs are only approximately 81 per cent. This implies that nearly 20 per cent of primary-age children in Malawi are still not in school. The current situation in Uganda is better and only 13 per cent of the primary-age cohort are not attending school. Therefore, while great strides have been made towards providing access for all school-age children a significant proportion of this population still remain out of school in Malawi and Uganda. Evidence from Botswana suggests that primary NERs take some time to reach 100 per cent even when primary GERs have been above 100 per cent for a sustained period of time.

Unlike the situation in Botswana, female enrolment at primary school has lagged behind male enrolment in Malawi and Uganda. However, during the 1990s female enrolment rates have risen more quickly than male rates and hence the gender gap in primary school GERs has narrowed although male GERs are still higher than female GERs. The gender gap in primary school is driven by over-age enrolment as the latest NER figures show parity between male and female enrolment, as can be seen from Table 3.1.

All three countries have experienced large increases in primary enrolment owing to the UPE initiatives undertaken. It is interesting to note that the three countries entered the UPE initiative with relatively high enrolment rates and after sustained periods of increases in these rates. The abolition of fees seemed to have had the largest effect on enrolment in Uganda, which interestingly had the lowest enrolment rates of the three countries before abolition. This large jump in enrolment rates appears to have been partly a result of the much larger proportion of over-age children who had never been to school that these lower enrolment rates imply. Botswana appears to have had the slowest expansion in primary enrolments and also had higher enrolments pre-UPE. Botswana did not experience anything like the massive increases seen in Malawi and Uganda over one school year and this will be shown to have had important implications on the education experience of these new enrolees.

### *3.2.2 Internal efficiency during UPE*

What effect did these increases in access to primary education have on pupils' progression through the primary education system? Internal efficiency indicators are important in determining how well the education system is functioning over time and how primary school completion rates have changed overtime. As the previous chapter stated, internal efficiency indicators are also used as proxy measures for quality. This is based on the assumption that the quality of education must be higher in education systems where repetition and drop-out rates are low and progression to the end of primary school is high.

Table 3.3 shows the survival rates for actual cohorts of students to Standard 5. The table shows the percentage of the cohort of pupils starting primary school in the year

indicated that reach Standard 5. Standard 5 is chosen for this table rather than the final grade of primary simply because in Malawi and Uganda the UPE cohort (i.e. the group of students that started primary school in the year fees were abolished) has only recently completed primary school and no data is available to explore what proportion of this cohort completed their primary education. The table shows that there is a large amount of variation in survival rates between the three countries. Botswana has the highest survival rates and at least twice the number of primary school entrants reach Standard 5 in that country compared to Malawi and Uganda.

Table 3.3 Actual Standard 5 survival rates

| | Pre-UPE | | | UPE cohort | | | Post-UPE | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | Male | Female | Total | Male | Female | Total | Male | Female |
| Botswana | 92 | 87 | 96 | 87 | 83 | 78 | 94 | 92 | 89 |
| Malawi | 47 | 49 | 45 | 32 | 35 | 29 | 39 | 43 | 34 |
| Uganda | 53 | 57 | 48 | 37 | 38 | 37 | - | - | - |

Note: Botswana: pre-UPE is 1978, UPE cohort is 1980, and post-UPE is 1984. Malawi: pre-UPE is 1991/2, UPE cohort is 1994/5, and post-UPE is 1995/6. Uganda: pre-UPE is 1991 and UPE is 1997. There is no post-UPE cohort for Uganda as no data is available for 2002, the year the 1998 cohort would reach Standard 5. Data for 1994 were initially used for pre-UPE but due to widespread re-entry in higher grades survival rates were very high.
Source: Author's calculations from government statistics: Botswana – MoE education statistics reports (various years); Malawi – MoESC education statistics (various years); Uganda – MoES statistical abstracts (various years)

Table 3.3 shows that in all countries survival rates have appeared to worsen for the UPE cohort but then begin to improve for post-UPE cohorts. In Uganda approximately 50 per cent of Standard 1 enrolees in 1991 reached Standard 5. However, only 37 per cent of Standard 1 students in 1997 (the UPE year) reached Standard 5. Botswana, with the longest experience of high enrolment rates of the three countries, shows the same pattern although the decline for the UPE cohort is much less marked.[40] There is no clear pattern in terms of gender; the gender gap in survival rates seems to have widened in Botswana and Malawi whereas in Uganda it has narrowed.

Because Malawi and Uganda have only recently introduced UPE the data in Table 3.3 are limited and do not show what has been happening to the internal efficiency of the primary education system more recently. To get a sense of this Figure 3.6 presents primary school final grade survival rates for Malawi and Uganda using the reconstructed cohort method. This

method uses only one year of data to predict the number of students starting in a particular year that survive to the final grade of the primary education cycle.[41] Survival rates calculated in this way are used widely to analyse and monitor progress towards the MDGs. Final grade survival rates follow a similar pattern to the Standard 5 survival rates shown in Table 3.3. It is striking that the Malawi and Uganda last grade survival rates show a peak at the time that UPE was introduced. Internal efficiency did not improve dramatically during this year and the increase just reflects substantial re-entry into the primary education system in both of these countries when UPE was first introduced. For example, in Uganda Standard 2 enrolment in 1996 was 550,000 but new enrolment in Standard 3 the following year was 630,000.

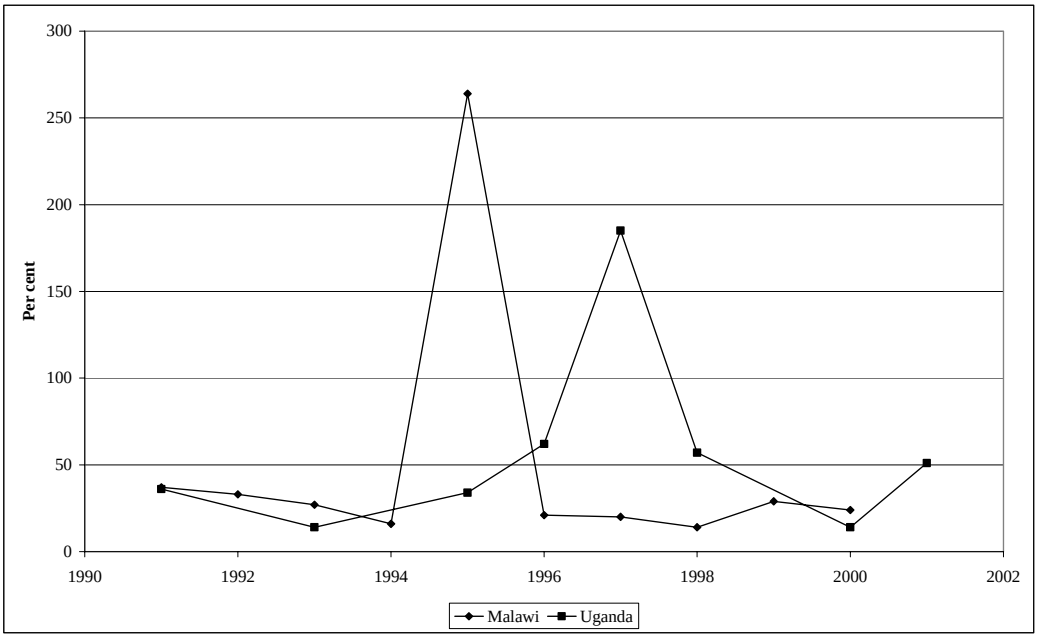
Before UPE, predicted survival rates were declining in Malawi; in 1991 37 per cent of Standard 1 primary students were predicted to reach Standard 8 but by 1994 this had declined to 16 per cent. After UPE, predicted survival rates picked up a little before declining to only 14 per cent in 1998. Since then, however, there has been an improvement in survival rates in Malawi and by 2000 survival rates had reached their early 1990 levels. Male Standard 8 survival rates have consistently been higher than female rates and there is some evidence to suggest that this gap has been widening recently as these rates have been improving (see Appendix Table A.4). In Uganda, survival rates were increasing before UPE although a similar trend can be observed post-UPE. However, predicted survival rates are very erratic in Uganda suggesting that repetition and drop-out rates, the underlying determinants of survival rates, have been unstable during the 1990s.

Standard 5 and final grade survival rates are much higher in Botswana (see Appendix Table A.4). Standard 5 survival rates averaged approximately 90 per cent throughout the 1980s and 1990s while Standard 7 rates were only slightly lower, averaging 85 per cent over the same period. While Botswana is not shown in Figure 3.6 the trends are similar although survival rates dipped only briefly after 1980 and soon regained and then surpassed their pre-UPE levels. In addition, female survival rates are consistently higher than male rates over the last 20 years. Therefore more girls start and complete school in Botswana than boys.

Figure 3.6 Primary school completion rates using the reconstructed cohort method

[40] More recent survival rates for primary school students in Botswana have begun to approach their pre-UPE levels. For example, Standard 5 survival rates for primary school entrants in the early 1990s have been around 90 per cent.

[41] Appendix Table A.4 reports Standard 5 and final grade survival rates for Malawi and Uganda calculated using the reconstructed cohort method.




Note: Before 1997 the Malawian primary school year began in October and ended in July. To ensure comparability with Uganda the dates before 1997 for Malawi refer to the year in which the bulk of the primary school year fell. For example, the 1994/5 school year in Malawi is marked on the figure as 1995.
Source: Author's calculations from government statistics: Malawi – MoESC education statistics (various years); Uganda – MoES statistical abstracts (various years)

Changes in survival rates are driven by changes in the underlying repetition and drop-out rates. For completeness, Appendix Table A.5 reports the average primary school repetition and drop-out rates for the three countries. Table 3.4 reports the average repetition and drop-out rates three years before and three years after the introduction of UPE. In Botswana, repetition rates tended to increase after 1980 and drop-out rates declined even though these rates are very low compared to the other countries. Repetition significantly increased after 1980 because of the introduction at that time of a Standard 4 examination, which meant that a greater proportion of children were held back in this standard as well as in Standard 7, the more common standard for repetition.

Table 3.4 Average primary school repetition and drop-out rates before and after UPE

| | Pre-UPE | | Post-UPE | |
|---|---|---|---|---|
| | Repetition | Drop-out | Repetition | Drop-out |
| Botswana | 2.3 | 3.6 | 5.6 | 2.9 |
| Malawi | 18.8 | 14.7 | 14.7 | 20.7 |
| Uganda | 16.4 | 6.9 | 9.4 | 19.1 |

Note: See Appendix Table A.5 note. Botswana pre-UPE average is 1977–9 and post-UPE is 1981–3. Malawi pre-UPE average is 1991/2–1993/4 and post-UPE is 1995/96–1998. Uganda pre-UPE average is 1994–6 and post-UPE is 1998–2000. Unfortunately no data is available for 1994 or 1999 so Uganda averages are based on two years of data.
Source: Author's calculations from government statistics: Botswana – MoE education statistics reports (various years); Malawi – MoESC education statistics (various years); Uganda – MoES statistical abstracts (various years)

Malawi and Uganda tend to have different trends in repetition and drop-out rates when compared to Botswana. Repetition rates in Malawi and Uganda have fallen since the introduction of UPE partly owing to changes in education policy after the introduction of UPE. Reduction in repetition rates in Malawi is partly due to the fact that recently children are only allowed to repeat Standard 8 once. This was introduced to stop children repeating Standard 8 many times in order to get a government secondary school place. In Uganda automatic promotion was introduced after UPE to improve the flow of students through the education system and free up more places in the early grades to allow for the massive increase in enrolment in these early grades. Although this was official policy and has led to declines in repetition across all grades, repetition still occurs (see Appendix Table A.5).

Drop-out rates in Malawi and Uganda have increased dramatically since the introduction of UPE. In both countries approximately one in five primary school students drop out since the introduction of UPE.[42] It appears that drop-out rates are positively correlated with the size of the expansion in the education system: the larger the proportional increase in primary school enrolment during the UPE drive the larger the increase in drop-out rates. Increases in drop-out will reduce survival rates while decreases in the repetition rate will improve survival rates. These opposing factors lead to the survival rates shown in Figure 3.6.

### *3.2.3 Changes in learning outcomes during UPE*

It is not possible to explore how primary school achievement changed over time in the three countries using the results of the primary school leaving examination. These examination results are based on norm-referenced tests and therefore are adjusted in order for similar proportions of students to pass the examination from year to year.[43] Therefore, each country case study searched for research that had attempted to measure learning achievement at the primary level in order to get an idea of how this may have changed with the introduction of UPE. Unsurprisingly, information on primary school learning outcomes was fairly scarce.

[42] Drop-out rates in Malawi and Uganda have tended to be highest in the earlier primary school standards and particularly in the first standard. This implies that many primary school students do not complete more than 1–2 years of primary education.
[43] This has recently changed in Botswana where criterion-referenced testing has been introduced.

In Botswana, the two National Commissions on Education (NCE) (1976 and 1993) each commissioned studies on learning achievement in primary schools (Government of Botswana 1977; Government of Botswana 1994). In addition to these surveys the Ministry of Education (MoE) conducted a survey in 1982 which enabled a comparison with the results of the previous 1976 study. These studies tested Standard 7 students with questions drawn from the primary school leaving examination (PSLE). The later study concluded that achievement had improved over this period, which coincided with the expansion in primary schooling. However, in 1993 the NCE analysed raw scores on the PSLE between 1977 and 1992 and concluded that achievement had been declining in mathematics, science and English. This confirmed the perceptions of junior secondary school teachers that more recent secondary school intakes were less able.

While there is no information in Malawi that would enable a comparison of learning outcomes before and after primary school expansion, achievement studies that have explored learning outcomes since UPE have shown very low levels of achievement. In 1998 SACMEQ undertook a primary pupil assessment exercise and found that less than a quarter of Standard 6 pupils had achieved minimum levels of competency in reading (Milner *et al.* 2001). Furthermore, longitudinal studies of achievement have shown that very little learning occurs over the course of a primary school year (see Improving Educational Quality project). Therefore, students were moving up the primary school system without the requisite learning skills in place to cope with the higher standards.

In Uganda there have been three studies that have explored the impact UPE has had on learning outcomes at the primary level. The National Assessment of Progress in Education (NAPE) undertook two studies of Standard 3 and Standard 6 students' achievement in science and social studies in 1996 and 1999. The 1999 study chose two districts in each region of Uganda and a representative sample of schools were chosen in each district. Comparing the results from the two studies shows that as a consequence of primary school expansion learning outcomes had declined for primary school students. The proportions of P6 pupils who attained the desired proficiency levels decreased from 35 per cent to 27 per cent in science and from 58 per cent to 37 per cent in social studies between the two studies. A third small-scale study was undertaken in 22 schools in Uganda in 1999 (Otteby 1999). This study tested Standard 2 and Standard 5 primary school students on mathematics and English. While the study had no time-series data and was not representative of the country as a whole it predicted that primary school achievement had declined since the introduction of UPE.

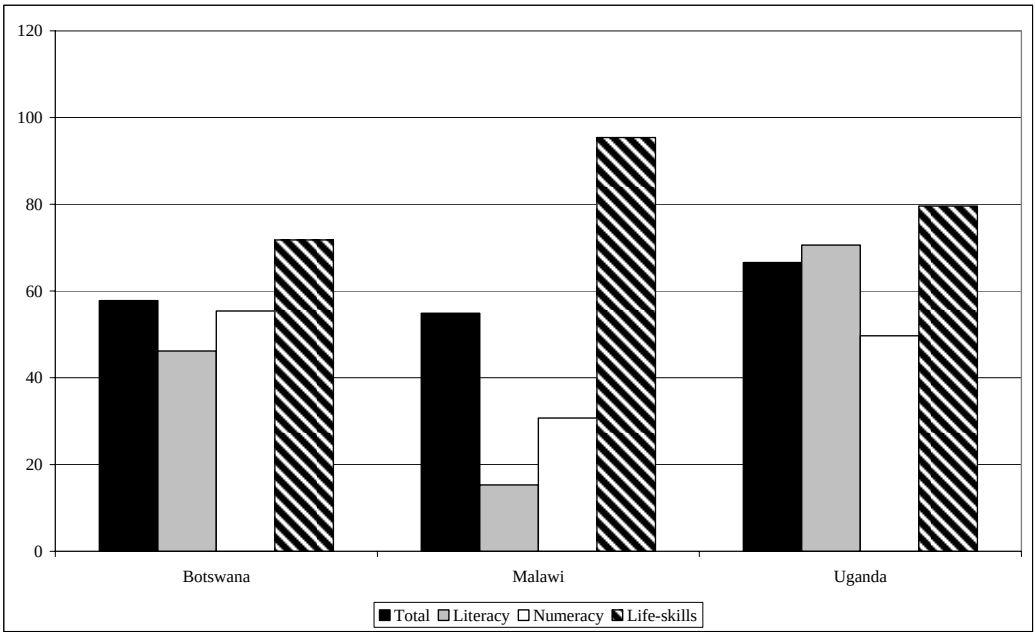
It appears that in all three countries primary school expansion has led to a deterioration of learning outcomes at the primary level. This is perhaps unsurprising given that primary school expansion has meant increased access for lower socio-economic groups and learning outcomes are determined partly by socio-economic status. While we have some

idea of what has happened to primary school achievement in each country the studies do not allow us to directly compare learning outcomes across the three countries. Beginning in 1992 UNESCO has undertaken the Monitoring Learning Achievement (MLA) project. This project has undertaken surveys of primary school learning outcomes in 70 countries across the world. Most interestingly for this study, this project surveyed Standard 4 students in 11 African countries in 1999 including Botswana, Malawi and Uganda (Chinapah 2003). The MLA survey was designed to assess primary school students' competencies in literacy, numeracy and life-skills. A common set of test items was included in each country to ensure cross-country comparability.[44]

Figure 3.7 details the results from these surveys in Botswana, Malawi and Uganda. Minimum levels of mastery learning show the percentage of Standard 4 students that have achieved a minimum level of knowledge, skills and competencies in the three areas shown in Figure 3.7.[45] Testing took place in 1999, which would imply that the majority of Ugandan students entered primary school before the introduction of UPE. There are no major differences in the percentage of students achieving overall competency across the three countries although there are differences in its components.[46] Malawian students did particularly badly in literacy and numeracy compared to students from Botswana and Uganda. It is interesting to note that Ugandan students do better in the literacy test than students in Botswana and comparably in the numeracy test. Given the trends in the internal efficiency of the education system outlined in the previous section the pattern of achievement shown in Figure 3.7 appears odd. Completion rates in Botswana were much higher than elsewhere but learning outcomes do not appear to be significantly better.

Figure 3.7 Percentage of learners attaining minimum levels of mastery learning, 1999

[44] Participating countries also included country specific items but the results presented in Chinapah *et al*. (2000) only include directly comparable items.
[45] Using raw means of each test does not change the ranking of the countries in any of the tests.
[46] In Malawi boys performed slightly better than girls in the overall test while in Botswana the opposite was true. There was no gender difference in Uganda for the total score but boys tended to perform slightly better than girls in the numeracy test. The gender gap in Malawi was also greatest in the numeracy test.



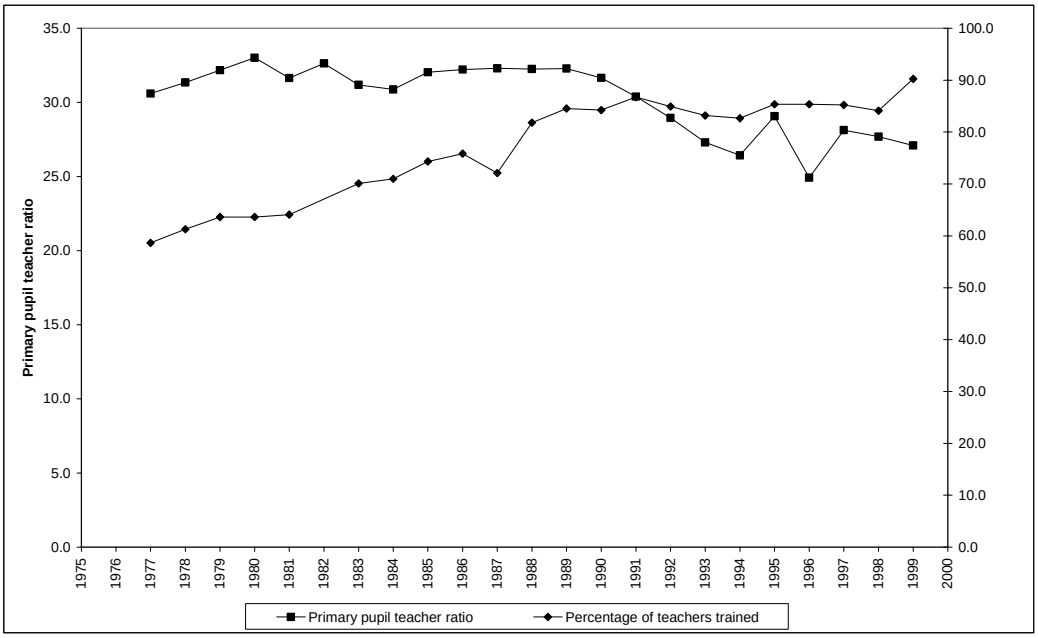

Source: Chinapah *et al.* 2000

### *3.2.4 Changes in education inputs during UPE*

The previous section showed that information on changes in learning outcomes brought about by primary school expansion is extremely limited. Learning outcomes will be affected by the quality of the primary education system, which in turn is likely to be partly related to the quantity and quality of teachers, class sizes and the availability of textbooks in the school. Many of the reform programmes outlined earlier in this chapter have focused almost exclusively on improving supply of these inputs to schools. This section explores how these education indicators changed during primary school expansion in the three countries. It should be noted that these factors represent a very incomplete list of the determinants of learning outcomes at the primary level, an issue that this report returns to in Chapter 5.

The primary pupil–teacher ratio and the proportion of teachers that have undergone teacher training have been improving in Botswana over the last 20 years (see Figure 3.8). Before primary school fees were completely abolished in 1980 the primary pupil–teacher ratio was increasing but this ratio was well below developing country averages. Since the abolition of fees the pupil–teacher ratio has steadily declined and in 1999 there was one teacher for every 27 students in primary school. Similarly, in 1980 the upward trend in the proportion of trained teachers was stalled but by 1998 well over 80 per cent of teachers were trained at the primary level.

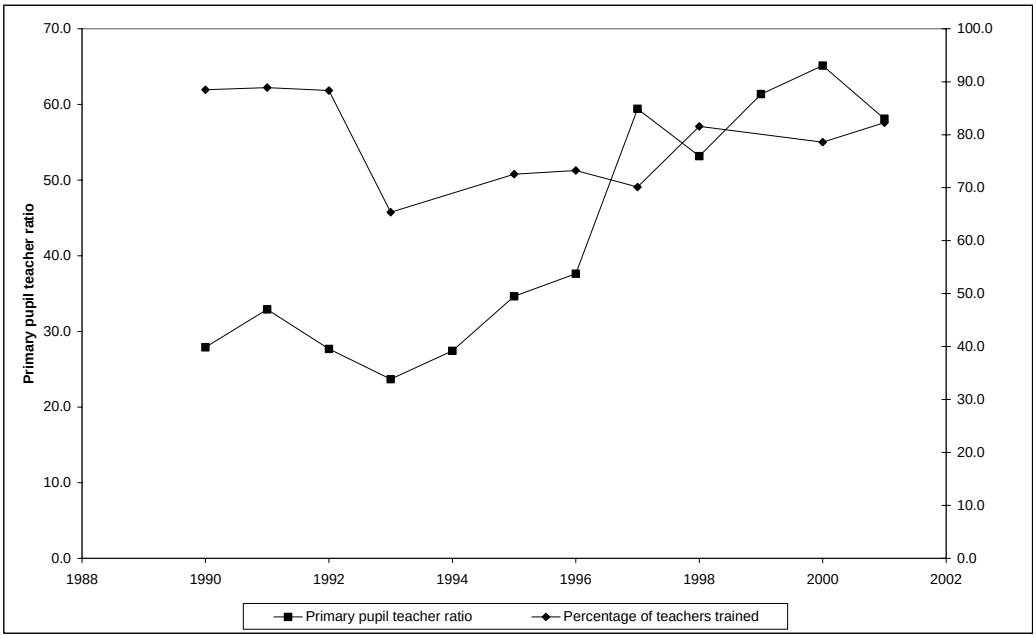
Figure 3.8 Primary pupil–teacher ratio and percentage of teachers trained in Botswana




Source: MoE statistics reports (various years)

The trend in the pupil–teacher ratio in Botswana stands in stark contrast to the trend in Uganda where the ratio increased dramatically after UPE (see Figure 3.9). The proportion of teachers in Uganda with appropriate training declined slightly in 1997 but since then has shown some dramatic improvements. One of the key quality improvement strategies of ESIP in Uganda has been to increase the number of teachers in primary schools and reduce the number who are untrained. From Figure 3.9 it is clear that ESIP has had some success in improving the quality of the teaching force after the introduction of UPE. However, the Ugandan education system has had major problems in recruiting teachers and in turn reducing the pupil–teacher ratio at the primary level. As many of the ESIP review documents state, the shortage of primary school teachers was and is the single biggest problem facing the primary education system.

Figure 3.9 Primary pupil–teacher ratio and percentage of teachers trained in Uganda




Source: MoES statistical abstracts (various years)

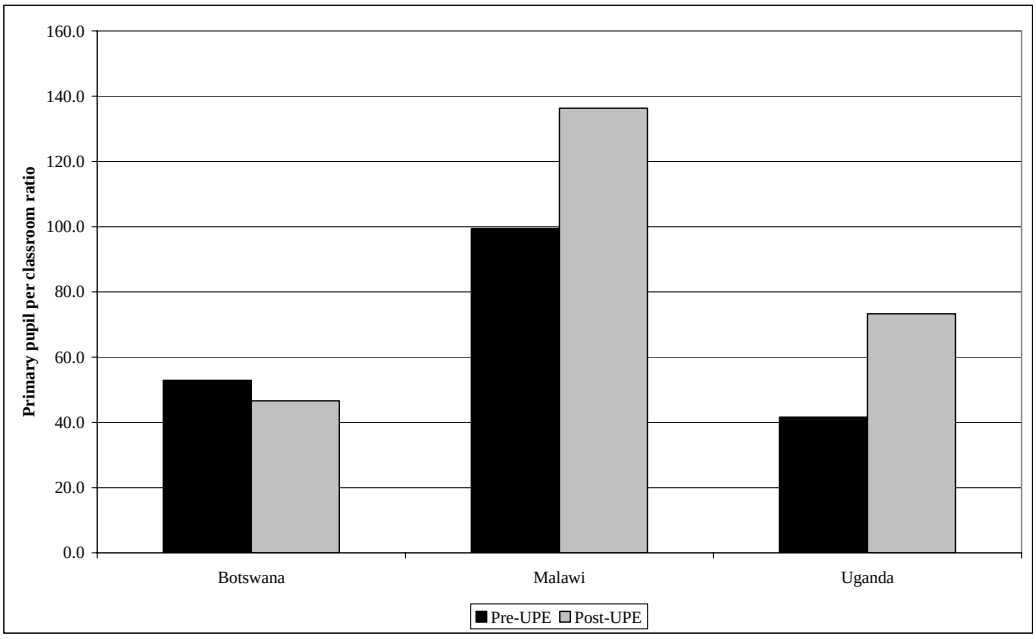
The pupil–teacher ratio in Malawi did not increase with the abolition of primary school fees in 1994/5 (see Appendix Figure A.1). In fact, the primary pupil–teacher ratio declined slightly from 68 in 1993/4 to 63 in 1994/5. This decline was due to the recruitment of 18,000 unqualified teachers. However, this implied that the percentage of qualified teachers declined substantially from 84 to 58 per cent with the abolition of fees. The Malawi Integrated In-Service Teacher Education Programme (MIITEP) was introduced to train the untrained teachers currently in primary schools. However, this programme has not been particularly successful in reducing the proportion of untrained teachers in Malawi and only approximately half of primary school teachers are qualified.

The pupil–teacher ratios shown in Figure 3.9 mark some large disparities in the distribution of teachers across standards in primary school. In both Malawi and Uganda class sizes have increased much more dramatically at the lower levels of the education system. Therefore it is likely that teaching in the lower grades of primary in these countries will have become more difficult and may partly explain the high drop-out rates outlined in the previous section.

Primary school expansion also requires the expansion of school infrastructure. In times of rapid expansion it appears that school and classroom building cannot keep pace with the rate of increase of enrolment. Again, rapid primary school expansion led to large disparities between enrolment and classroom availability leading to very large increases in the pupil per classroom ratio (see Figure 3.10). It should be noted that increases in the pupil per classroom ratio generally lead to pupils being taught in larger groups but this is not always the

case. In response to UPE in Uganda double-shifting of the first two standards of primary schooling was expanded.[47] This implies that one classroom is effectively used for two classes and allows pupils to be taught in smaller groups.

Figure 3.10 Primary pupil per classroom ratios before and after UPE




Note: See Appendix Table A.5 note. Pre-UPE average for Botswana is 1977–9 and post-UPE is 1981–3. For Malawi pre-UPE average is 1991/2–1993/4 and post-UPE is 1995/6–1998. For Uganda: pre-UPE average is 1994–6 and post-UPE is 1998–2000. Unfortunately no data is available for 1994 or 1999 so Uganda averages are based on two years of data.
Source: Botswana – MoE education statistics reports (various years); Malawi – MoESC education statistics (various years): Uganda – MoES statistical abstracts (various years)

Similar to the use of teachers it is also the case that the average increases in the pupil per classroom ratio shown in Figure 3.10 mask wide disparities across standards. As an example, in 1997 the number of pupils per classroom in Uganda was 136 in Standard 1 and only 39 in Standard 7 (see Appendix Figure A.2). Therefore overcrowding of classrooms, even with double-shifting of classrooms, is likely to have had a much larger impact on the lower standards. As the UPE bulge progresses through primary school it could be expected that the primary pupil per classroom ratio would worsen in the higher standards as well. However, owing to high drop-out rates in the lower part of the system this has not materialised in Malawi or Uganda so far.

Information on textbook availability in primary schools is often difficult to obtain. However, Appendix Table A.6 reports the available information for Malawi and Uganda.

[47] Unfortunately no information is available, at the national level, on the pervasiveness of double-shifting in the primary education systems of Malawi and Uganda.

Unsurprisingly, trends in the pupil per textbook ratio follow a similar pattern to the other education inputs outlined in this section.

### *3.2.5 Wider impacts of UPE*

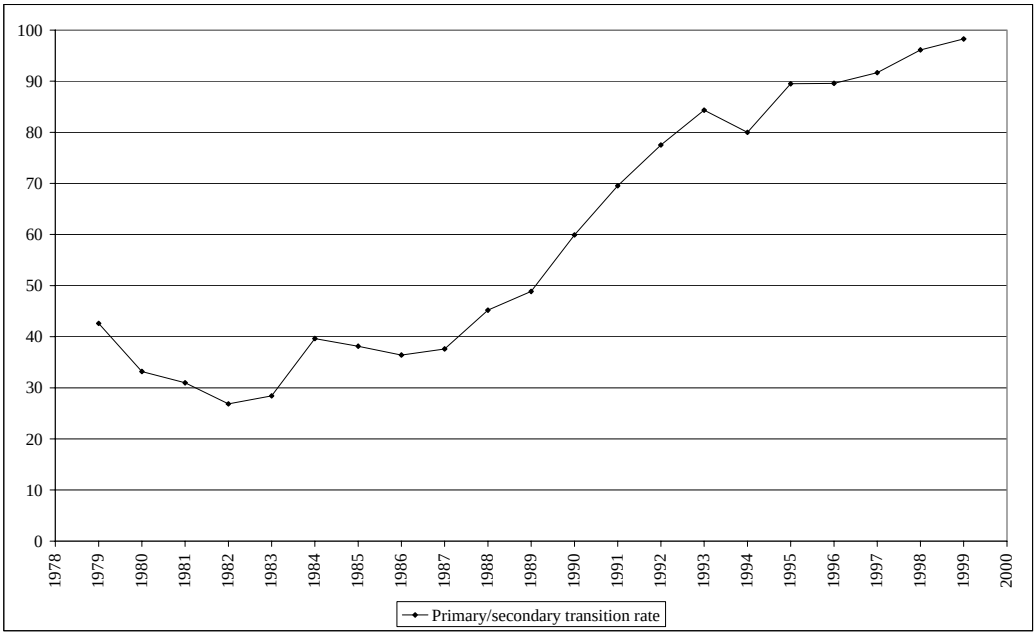
It is clear that there is a close correlation between rapid enrolment expansion and the deterioration of a number of education indicators outlined in previous sections. Have reductions in the quality of education led some households to enrol their children in private primary schools? It is very difficult to get good statistics on private primary school enrolment in many countries, mainly because EMISs tend to concentrate on schools where government has some control and also because many non-government schools are unregistered. Botswana has seen a steady increase in the non-government percentage of total primary school enrolments throughout the last 20 years. However, private primary schooling in Botswana in 1999 represented only approximately 5 per cent of total primary school enrolment. In Uganda, information on private school enrolment reported by government is very unreliable because relatively few private schools responded to school questionnaires sent by the MoES and also partly because private primary schools have not been registered.[48] Pre-UPE private school enrolment represented less than 10 per cent of total primary school enrolment and this does not seem to have changed post-UPE.[49] The Uganda DHS EdData Survey in 2001 reported that 8 per cent of primary school students attended non-government primary schools (Uganda Bureau of Statistics and ORC Macro 2002). It should be noted, however, that if the share of private school enrolment has remained the same this represents a very large growth in private primary schools given the massive enrolment expansion over the 1990s. Anecdotal evidence from Malawi suggests that private primary school enrolment has also increased in Malawi. However, information on private school enrolments is not collected by the MoESC. The Malawi DHS EdData Survey in 2002 reported that 5 per cent of total primary school enrolment was private with a much higher proportion in urban areas (Malawi Central Statistical Office and ORC Macro 2003).

Primary enrolment expansion has meant that a greater number of students, in absolute terms, have reached or are beginning to reach the end of the primary school cycle. It is interesting to look therefore at the impact primary school expansion has had on the transition rate between primary and secondary school.[50] In Botswana, the transition rate declined in the late 1970s and early 1980s as the initial increase in primary school enrolment in 1973 reached

[48] Consolidation of information on private primary schools was highlighted as being an important objective for the EMIS system in 2000 (Republic of Uganda 2000b).
[49] The Education Statistical Abstracts produced by the MoES have improved their reporting of private primary schools recently although current figures for private primary school enrolment far exceed those reported by household surveys.

the end of the primary cycle. As a direct result of policy to maintain and improve the transition rate after 1982 the transition rate began to increase steadily and by 1999 the transition rate was approaching 100 per cent. Therefore, in Botswana primary school enrolment expansion was surpassed by secondary enrolment expansion over this period and by the late 1990s almost all primary school leavers were going onto junior secondary school.

Figure 3.11 Primary to secondary school transition rate in Botswana



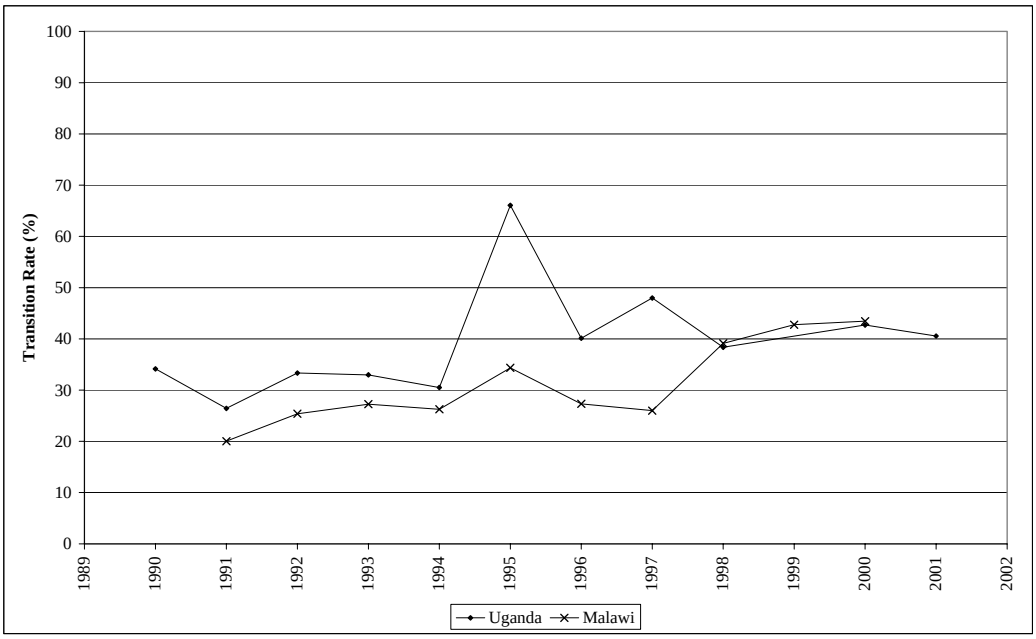

Source: MoE statistics reports (various years)

This remarkable achievement in Botswana has not been completely matched in Malawi and Uganda although there have been some steady increases over the 1990s (see Figure 3.12). In Uganda the initial UPE cohort only reached the final grade of primary in 2003. Therefore, the transition rate has not been affected yet by the large increase in Standard 1 enrolments in 1997. However, given the large re-entry into higher grades outlined previously in this chapter Standard 7 enrolment grew by 7 per cent on average over the 1990s and the transition rate has shown an increase during the late 1990s. This is predominantly owing to the large-scale expansion in private secondary schools seen in Uganda during this time (see Bennell and Sayed 2002). However, it remains to be seen whether the transition rate will be maintained in the years to come. Standard 1 enrolments in Malawi reached Standard 8 in 2002 and it is unclear whether the transition rate will maintain its upward trend. However,

[50] The transition rate is defined as new enrolment in the first grade of secondary divided by total enrolment in the final grade of primary in the year before.

in a similar way to Uganda, high drop-out and some re-entry suggests that no pressure will be put on secondary enrolment until progress through the primary school system improves.

Figure 3.12 Primary to secondary school transition rate in Malawi and Uganda[51]




Note: Before 1997 the Malawian primary school year began in October and ended in July. To ensure comparability with Uganda the dates before 1997 for Malawi refer to the year in which the bulk of the primary school year fell. For example, the 1994/5 school year in Malawi is marked on the figure as 1995.
Source: Malawi – MoESC education statistics (various years); Uganda – MoES statistical abstracts (various years)

The chapter has shown that there are some similarities and differences in the evolution of the education system across the three countries. Botswana appears to be different in terms of the introduction of UPE and the impact UPE had on the education system. Primary school expansion in Botswana was continuous and the growth in primary enrolments was relatively steady. Enrolments at the beginning of the UPE drive were relatively high and future expansion was planned and thought through before policy announcements were made. Malawi was similar to Botswana in the sense that it had begun to adopt a gradual approach to the expansion of primary schooling but after the first multi-party elections this process was discontinued in favour of a much accelerated programme that resulted in very large and unplanned increases in primary school enrolment. Uganda did not really have any strong policies in place on primary school expansion before the abolition of fees in 1997. However, as in Malawi, fulfilment of election promises led to a very large and unplanned increase in primary enrolment. In both these countries a direct result of UPE policies was a fundamental

review of education sector priorities in the form of PIF and ESIP in Malawi and Uganda respectively. Before exploring the relationship between outcomes and public expenditure the next chapter briefly describes how UPE was financed in the three countries.

## 4 Financing UPE in Botswana, Malawi and Uganda

The previous chapter has shown what happened to the education system over the period of primary school expansion in the three country case studies. This chapter describes how public expenditure changed in response to this expansion and seeks to address the following questions:

• Was primary school expansion associated with major reallocations of public spending across sectors?
• Was primary school expansion associated with major reallocations of public spending within the education sector?
• Did the composition of public primary education expenditure change during primary school expansion?
• How sustainable are the current levels of public education expenditure and to what extent is the education sector dependent on donor support?

The data presented in this chapter are drawn mostly from the country reports and provide a brief summary of the detailed information contained in these studies.[52]

### 4.1 Intersectoral allocations of public expenditure

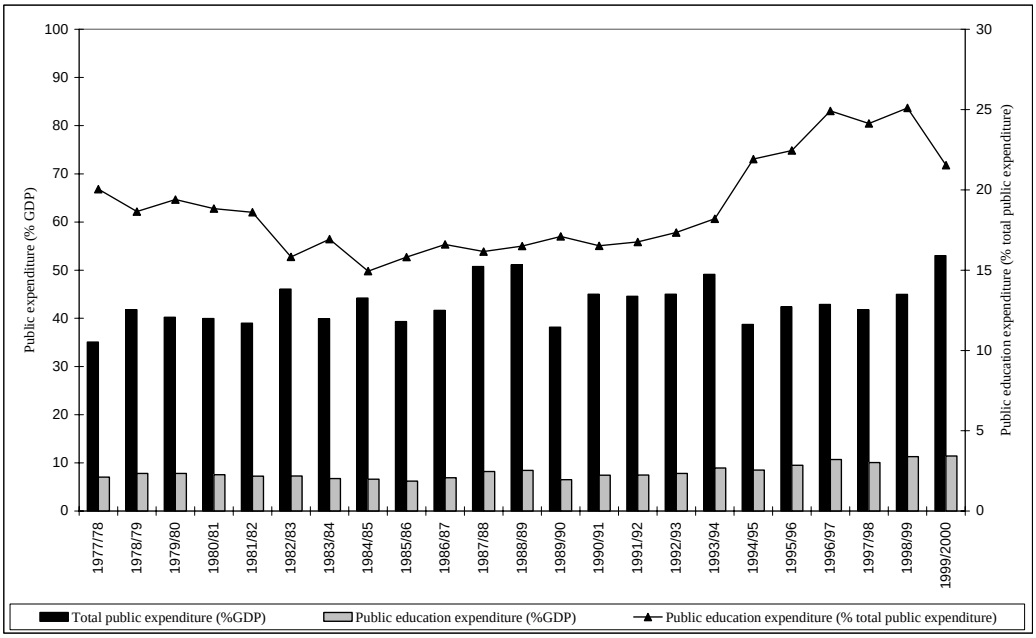
How does education spending compare to other sectors and how did this change with primary school expansion? In order to answer this question three indicators are used: public total and education expenditure as a proportion of GDP, public education expenditure as a proportion of total public expenditure and real growth rates over time in sectoral expenditure.

Public expenditure as a proportion of GDP has been consistently high in Botswana compared to other SSA countries. Figure 4.1 shows that total public expenditure has varied between 40 and 50 per cent of GDP over the last 20 years. Public education expenditure has also been high with the Botswana government investing between 6 and 11 per cent of GDP on

[51] Note the Malawi data do not include Distant Education Centre secondary school enrolments.
[52] The difficulties in obtaining data on public expenditure varied across the three countries although collating and checking the consistency of expenditure data was extremely time consuming in all countries.

education. Interestingly, at the time that primary school expansion education spending as a proportion of GDP was declining; in 1978/79 approximately 8 per cent of GDP was being spent on education compared to only 6.2 per cent in 1985/86. This declining trend was not associated with an overall decline in public expenditure and hence public education expenditure as a proportion of total government expenditure declined during this period. This decline was largely associated with declines in development expenditure rather than recurrent expenditure. Since the mid- to late 1980s, however, education spending as a proportion of GDP has been increasing. This trend is particularly marked after 1993/94 when the share of education expenditure in the government budget increased dramatically. By 1999/2000 11.4 per cent of GDP was being spent by the government on education compared to 9 per cent in 1993/94.

Figure 4.1 Public expenditure in Botswana (recurrent and development)[53]




Source: see Botswana case study report

The decline in education spending as a proportion of GDP in the 1980s did not translate into a decline in real resources being allocated to education (see Appendix Table A.8). In the late 1970s and early 1980s public education expenditure grew at a similar rate to overall public expenditure. In fact, defence, social welfare and community and social services grew more rapidly during this period. In Botswana primary school expansion was not achieved at the expense of other public sectors.

[53] These are actual expenditure figures and not estimates or budgeted figures.

Over the 23-year period covered in Figure 4.1, public education expenditure grew by 11 per cent annually in real terms. This is slightly above the growth in total public expenditure across the whole period although this is heavily influenced by the early 1990s. Between 1992/93 and 1996/97 real annual growth in public expenditure was approximately 1 per cent. This period in Botswana is associated with low growth rates (see Figure 3.1) and substantial fluctuations in government revenues. It is interesting to note that, despite this slow growth in overall public expenditure, during this time education expenditure continued to grow by 10 per cent annually. Defence, social welfare and housing expenditure appeared to shoulder relatively large real cutbacks in expenditure to allow for social expenditure (both education and health) growth.

The overall level of public expenditure is much lower in Malawi than in Botswana (see Figure 4.2). Furthermore, there are much greater fluctuations in public spending especially in the mid-1990s. This is due to the large fluctuations in GDP discussed in the previous chapter (see Figure 3.2). Education spending as a proportion of GDP increased dramatically during and directly after the abolition of fees in 1994. In 1993/94, education spending as a percentage of GDP was 3.4 per cent but increased to over 5.5 per cent in 1994/95 and 1995/96. The increase in spending was in both recurrent and development expenditure. However, school and classroom construction to accommodate the massive increases in enrolment saw education development spending increase from under 1 per cent of GDP to between 1.5 and 2 per cent of GDP in 1994/95 and 1995/96. It should be noted that these increases in public spending on education were not budgeted and represented major overspending by the MoESC.

Figure 4.2: Public expenditure in Malawi (recurrent and development)

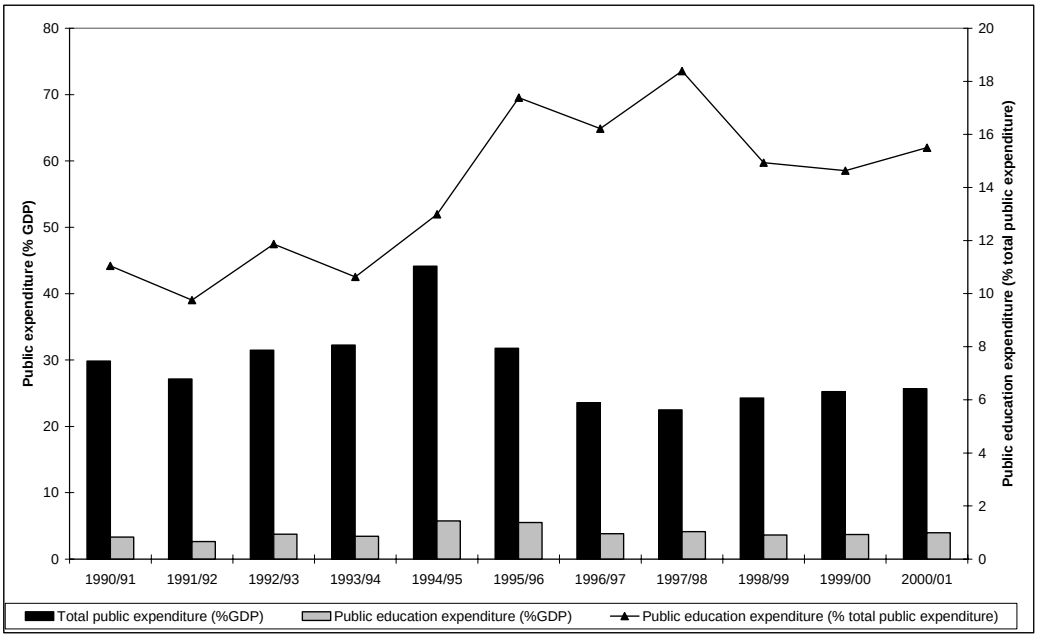



Figure 4.2 shows that up to the year after fees were abolished the priority afforded to education in the government budget was increasing. Between 1995/96 and 1997/98 education spending reached its highest levels at approximately 18 per cent of government expenditure.[54] In 1994/95 and 1995/96 education development expenditure increased considerably as school and classroom construction accelerated owing to the large increase in enrolment seen in these years. In 1994/95 education development spending was over 2 per cent of GDP and accounted for over a quarter of all government development expenditure (see Appendix Table A.7). Since then education spending as a proportion of total public expenditure has fallen slightly to approximately 15–16 per cent. It appears, therefore, that the abolition of fees in 1994 led to an increase in public spending on education. However, this increase was short lived and education spending by the end of the 1990s was only slightly higher, in terms of GDP and its share of government expenditure, than it was before the abolition of fees.

Given the volatility of public spending and GDP in Malawi during the 1990s Figure 4.2 does not give a clear picture of the trends in real public education expenditure. Table 4.1 shows real average annual growth rates in public expenditure by sector in Malawi. Before 1995/96 total public expenditure was growing annually by 3–4 per cent in real terms. This annual growth in expenditure is similar to population growth rates and implies that per capita public expenditure in the early 1990s was stagnant. However, this masks major differences in public expenditure across sectors. Economic services (including agriculture and transport)

[54] While the trends are the same there is quite a large difference in the share of the development and recurrent budget going to education. In 1994/95 41 per cent of the government development budget was allocated to education.

recorded major declines in expenditure over this period. This is the same for general public affairs where real levels of expenditure by 1995/96 in defence and general administration were lower than in 1990/91. Social sector spending was the major beneficiary of the reductions in spending in these other sectors. Between 1993/94 and 1995/96 real expenditure on the social sectors increased dramatically. Even though this is the period of major primary school expansion growth in education spending was similar to growth in health spending and well below spending on other social services.[55] Between 1996/97 and 1998/99 social sector spending still increased at a faster rate than total public spending but in the late 1990s declined in real terms. Over the 1990s, therefore, education has grown at a slightly faster rate than total recurrent expenditure while general public affairs and unallocatable expenditures (debt service, pensions, etc.) have either declined in real terms or remained relatively stable.

Table 4.1 Real average annual growth rates in public expenditure by sector in Malawi (%)

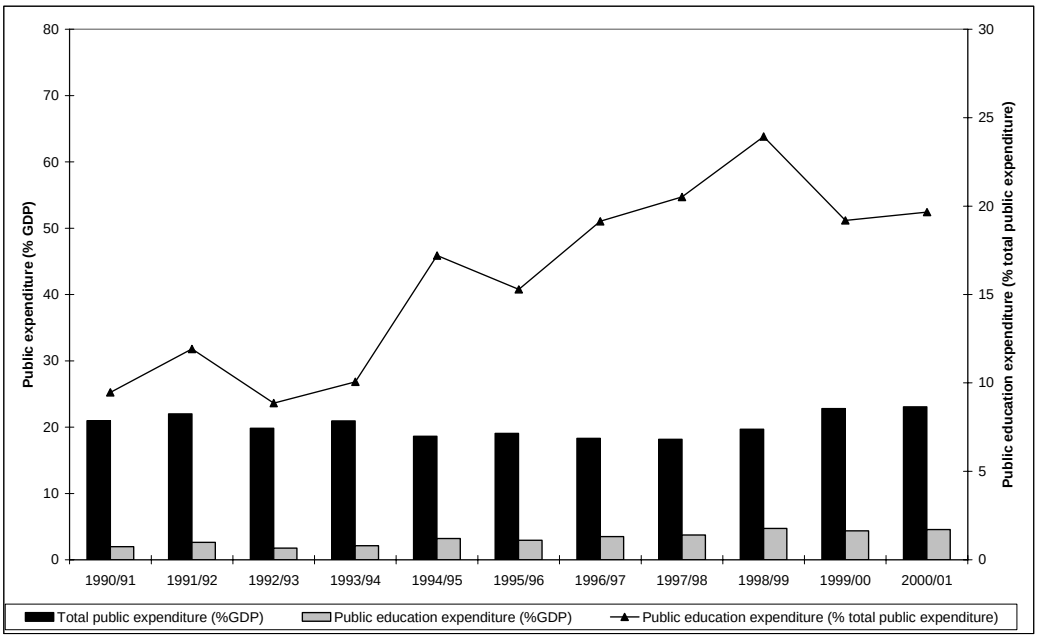
| | 1990/91–1992/93 | 1993/94–1995/6 | 1996/97–1998/99 | 1999/00–2000/1 | 1990/91–2000/01 |
|---|---|---|---|---|---|
| **General public affairs** | **6.1** | **-7.2** | **7.8** | **-3.5** | **1.0** |
| General administration | 9.1 | -13.4 | 13.7 | -9.7 | 1.2 |
| Defence affairs | 11.8 | -13.6 | -6.4 | 17.4 | 1.7 |
| Public order and safety affairs | -9.5 | 23.5 | -7.6 | 9.4 | -0.4 |
| **Social and community services** | **12.3** | **48.0** | **25.6** | **-8.3** | **9.5** |
| Education affairs and services | 11.9 | 32.9 | 9.6 | 5.7 | 6.7 |
| Health affairs and services | 17.3 | 30.7 | 32.4 | -4.7 | 5.1 |
| Other social services | -1.8 | 163.1 | 45.6 | -22.7 | 22.4 |
| **Economic services** | 2.4 | -16.8 | 36.7 | 15.9 | 3.9 |
| **Unallocatable expenditures** | 11.3 | -3.2 | -1.5 | 4.7 | -2.9 |
| **Total recurrent expenditure** | 8.0 | 3.9 | 14.2 | -0.1 | 3.2 |

Out of the three countries Uganda has the lowest government spending as a proportion of GDP (see Figure 4.3). Partly as a result of this, public education spending as a proportion of GDP is very low compared to the other countries. Figure 4.3 also shows that while education spending as a proportion of GDP, and of government expenditure, was increasing before fees were abolished it grew more rapidly after the 1995/6 budget year. By 1998/9 education spending as a proportion of GDP was 4.7 per cent compared to 2.9 per cent

[55] Other social service spending includes social security and welfare services and community and social

in 1995/6. Unlike Malawi's situation, the increase was primarily due to increases in recurrent rather than development expenditure (see Appendix Table A.7). Since 1998/9 public education expenditure as a proportion of GDP has declined marginally. In a similar way to Malawi some of the increase in public education spending was not budgeted for but was unplanned spending by the MoES in response to the large increases in primary school enrolment.

Figure 4.3 Public expenditure in Uganda (recurrent and development)[56]




Over the 1990s education spending in Uganda has grown faster, in real terms, than total public expenditure (see Appendix Table A.9). However, similar growth rates were found in health, roads, justice and public administration. While most of the other sectors have increased in real terms agriculture expenditure fell during the 1990s. Real expenditure on education grew most quickly before the introduction of UPE with real education expenditure doubling between 1993/94 and 1995/96. Again, similar increases in health expenditure went along with the growth in public education expenditure.

Table 4.2 Characteristics of public education expenditure in Botswana, Malawi and Uganda

| | Botswana | | | Malawi | | Uganda | |
|---|---|---|---|---|---|---|---|
| Education spending | 1977 | 1990 | 1999 | 1990/1 | 1999/00 | 1990/1 | 1999/00 |

development.

[56] Before 1999/2000 actual donor development expenditure in education was not included in government recorded data. External development expenditure in education for previous years is taken from the published estimates of recurrent and development estimates.

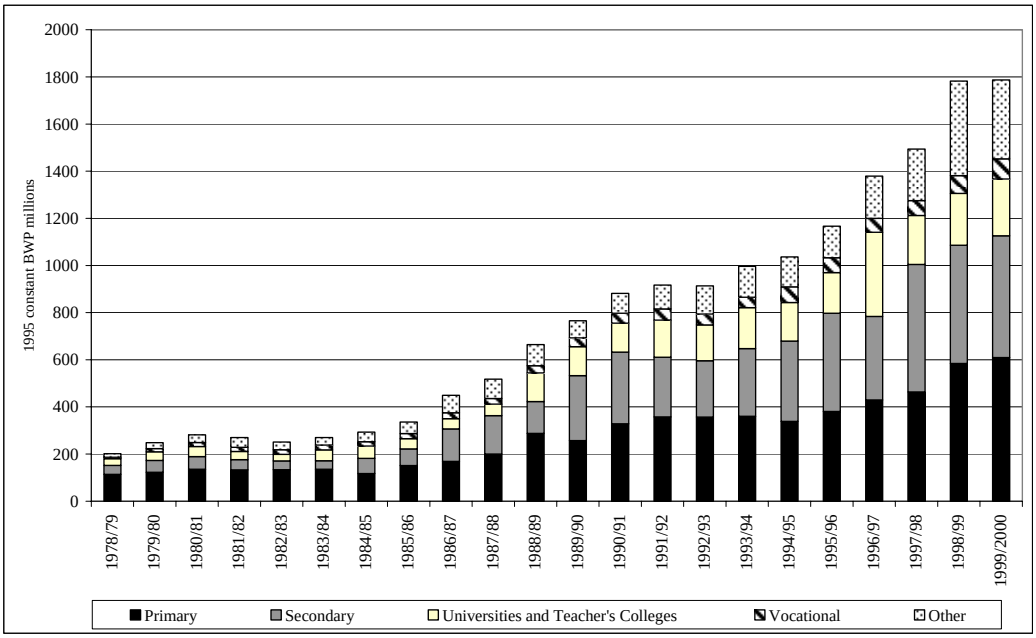
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| % GDP | 7.0 | 7.4 | 11.4 | 3.3 | 3.7 | 2.0 | 5.2 |
| % total public expenditure | 20.0 | 16.5 | 21.5 | 11 | 14.6 | 9.5 | 19.2 |
| 1995 US$ per capita | 86 | 245 | 400 | 5 | 7 | 5 | 18 |

The discussion above has provided detailed information on public expenditure in the three countries. Table 4.2 compares levels of public expenditure across countries and gives an idea of the real resources available to the education sector. Botswana devotes a greater share of GDP and public expenditure to education than Malawi or Uganda. With much higher GDP per capita this translates to much greater education spending per capita. In 1999/2000, public per capita education spending in Botswana was greater than GDP per capita in Malawi and Uganda. Lower proportions of GDP and public expenditure are allocated to education in Malawi and Uganda but these allocations increased over the 1990s. This was particularly so in Uganda where, combined with GDP growth, this led to a trebling of per capita education spending. In Malawi, although the share of public education spending was increasing, declines in GDP have resulted in only very modest increases in real per capita spending on education. Therefore while public education spending per capita was similar at the beginning of the 1990s in Malawi and Uganda a large gap had appeared by the end.

**4.2 Intrasectoral allocation of public education expenditure**

How did primary school expansion affect spending on higher levels of the education system? Figure 4.4 breaks down total education expenditure into education sub-sectors for Botswana. It is clear that while primary education expenditure makes up a large proportion of education spending its share has declined substantially over the last 20 years. During primary school expansion primary education expenditure was approximately half of all public education expenditure. Although after 1984/85 total expenditure on primary education was increasing in real terms its share in overall government education expenditure was declining. The main reason for primary education's declining share was the growth in secondary education expenditure. As Chapter 3 showed, secondary education expanded dramatically from the mid-1980s and this expansion is reflected in the large increase in secondary education public expenditure. In Botswana, therefore, primary school expansion was not achieved at the expense of other sub-sectors. Over the last 20 years all education sub-sectors have seen their allocations increase in real terms. As the primary school system began to supply enough school places for the school-age population increases in government expenditure on education began to be disproportionately allocated to post-primary education.

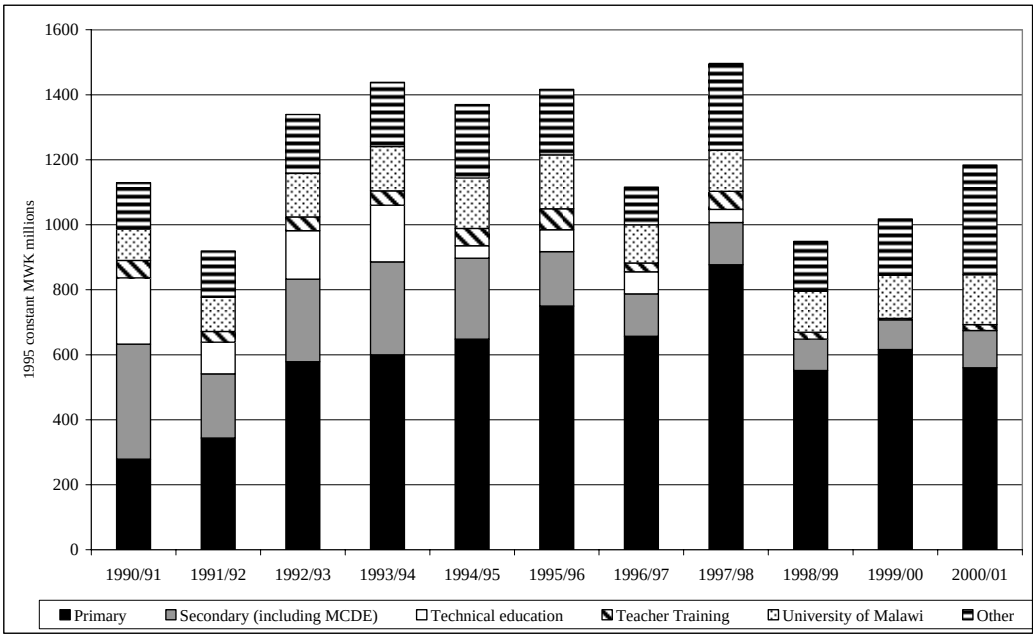
Figure 4.4 Intrasectoral total public education expenditure in Botswana (constant 1995 prices)




The share of primary education in total public education expenditure increased dramatically over the 1990s in Malawi (see Figure 4.5). In 1990/91 one quarter of total education expenditure was spent on primary education but by 2000/01 this share had increased to 59 per cent. As Figure 4.5 shows, primary education expenditure increased prior to the abolition of fees in the 1994/5 school year. In 1993/94 42 per cent of the education budget was being spent on primary. After the abolition of fees this jumped slightly to 48 per cent but it was in 1996/97 that primary education's share increased the most. Between 1996/97 and 1999/2000 primary education spending was maintained at about 60 per cent of total education expenditure. As a result of the increased share of education expenditure going to primary almost all other sectors experienced a decline in their share of spending. This was most dramatic in secondary education and teacher training where real expenditure declined by 68 and 66 per cent between 1990/91 and 2000/01 respectively. In 2000/01 primary education's share of total spending fell back to half of total education spending. While there was some increased spending on teacher training in this year the decline in primary education's share of the budget was primarily due to increases in other expenditure and in particular general administration spending.[57]

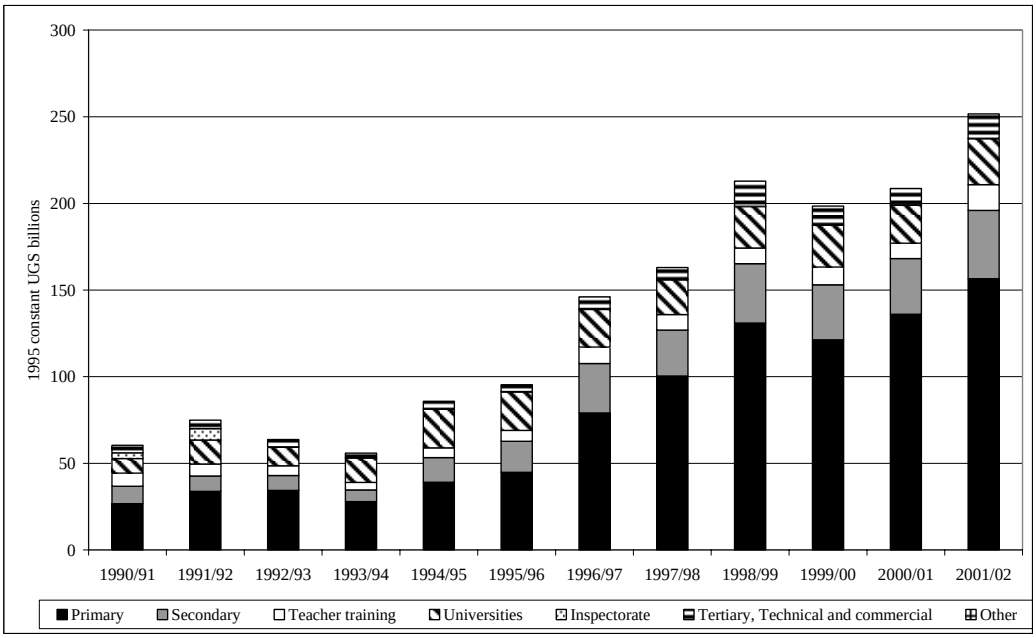
Figure 4.5 Intrasectoral total public education expenditure in Malawi (constant 1995 prices)

[57] It is unclear what this increased spending on administration was for. It could be that some sub-sector spending has been included under this heading for this year.




Similar patterns in sub-sector spending can be detected in Uganda although the declines in non-primary expenditure were less extreme (see Figure 4.6). It should be noted that Figure 4.6 reports only recurrent expenditure because total (domestic and external) sub-sector development expenditure was unavailable for all of the years reported. Primary education expenditure as a share of total recurrent education expenditure averaged 48 per cent before the 1996/97 budget year (the budget year in which primary enrolments rose initially). In this year the share of the recurrent budget going to primary education increased to 55 per cent and quickly rose to above 60 per cent in the following years. In 2000/01 primary education accounted for just under two-thirds of all education recurrent spending. Secondary education expenditure declined as a share of the total in the early 1990s but began to rise again immediately before the abolition of fees at primary level. Since 1997/98, however, secondary education's share of education expenditure has declined slightly. University spending appears to have reduced the most with primary school expansion. Between 1993/94 and 1995/96 university spending accounted for approximately one-quarter of all education spending. By 2000/01 this had fallen to under 11 per cent of recurrent education expenditure. However, unlike reductions in Malawi, these reductions in the share of expenditure going to secondary and university education did not represent real declines in the resources available to these sub-sectors.

Figure 4.6 Intrasectoral public recurrent education expenditure in Uganda (constant 1995 prices)[58]




### 4.3 Donor finance

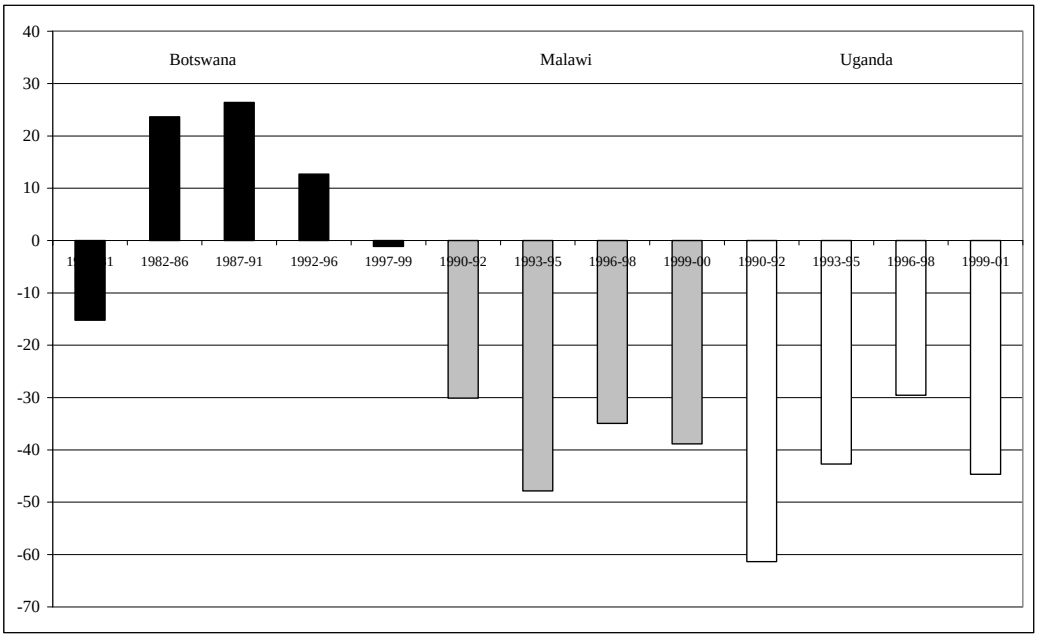
Donor financing of the education sector comes from three main sources; general budgetary support through programme aid, sector programme support and donor education projects. Although a number of conditions are usually attached to this kind of support, which may include conditions relating to the education sector, it is usually not possible to disaggregate sector public expenditure by source (donor or government).[59] It is also not generally possible to obtain this information from donor sources as programme aid is multi-sectoral. Information on donor education projects is more easily obtained. From the government side, donor project support in the education sector is generally reported as development expenditure and a clear distinction is made between government and donor development expenditure. However, it is common that this information does not cover all expenditure on projects (e.g. technical assistance) and does not always cover all donor projects. It is sometimes possible to obtain more detailed information from individual donors on project support. Education sector programme support aims to provide general support to the education sector based on a set of

[58] Before 1994/95 salary expenditure was not broken down by sub-sector and sub-sector figures for these years have been estimated based on breakdowns reported in World Bank 1993. After 1993/94 sub-sector spending in primary, secondary and for some tertiary institutions is recorded as district spending. However, some sub-sector spending is still recorded under the MoES and data on actual expenditures by sub-sector is not broken down for the MoES. MoES expenditure is broken down for each year based on estimates presented in the annual Estimates of Recurrent and Development Expenditure.

conditions. How this support is recorded varies by country and donor but it is usually possible to get relatively reliable information on this support from donor sources.

Before exploring donor financing in the education sector Figure 4.7 provides a proxy measure of the importance of external finance in the three countries. The primary deficit/surplus shows the extent to which pubic expenditure can be financed through annual domestic revenues. A deficit shows the level of financing the government needs to secure in the form of grants, domestic and external borrowing. Figure 4.7 shows clearly that in the late 1970s and early 1980s Botswana ran primary deficits which were predominantly financed through grants and external borrowing. Since then Botswana has run considerable surpluses although this changed briefly in the late 1990s. While Botswana currently receives some grants and borrows externally it is clear that Botswana is not dependent on external finance to fund public sector spending.

Figure 4.7: Primary deficit/surplus as a percentage of total public expenditure in Botswana, Malawi and Uganda




Note: The primary surplus/deficit is defined as total revenues (excluding grants) minus total expenditure (excluding interest payments). Because of lack of data expenditure in Malawi is inclusive of interest payments.

Botswana again stands in contrast with Malawi and Uganda where substantial deficits have been experienced throughout the 1990s. In general these deficits have been financed predominantly through grants and external finance. For example, in 1999/2000 Uganda had a

[59] The Poverty Action Fund (PAF) in Uganda is an example where programme aid (including HIPC funds) has been restricted to specific programmes in the government budget.

primary deficit representing 48 per cent of total public expenditure. Of this deficit 68 per cent was financed by grants and 25 per cent by external finance. Therefore it is clear that overall government finances in Malawi and Uganda are heavily dependent on grants and external finance and donors are a very important source of finance for public spending.

Education project expenditure by donors, recorded as part of the development budget, shows a similar trend to the primary deficit for Botswana. In 1978/79 almost all education development expenditure was funded externally. This declined to around 5 per cent by 1998/99.[60] However, during the time of primary school expansion development expenditure was largely financed by donors and it was only in 1985/86 that government development expenditure exceeded donor expenditure in the education sector. Table 4.3 reports donor support to the development budget for Malawi and Uganda and shows that donors fund the majority of education development expenditure. In Malawi, donors have supported primarily primary, secondary and teacher education. However, since the abolition of fees a substantial amount of donor support has gone into improving the management and administration of the education system. Unsurprisingly the majority of development expenditure in primary is spent on school construction and rehabilitation. However, between 1994/95 and 1997/98 the purchase of primary school textbooks was supported almost entirely with donor resources.

Table 4.3 Donor-financed education development expenditure[61]

| | Malawi | | Uganda |
|---|---|---|---|
| | % Total | % Primary | % Total |
| 1990/91 | 82.7 | 90.1 | 77.1 |
| 1992/93 | 86.8 | 86.2 | 82.4 |
| 1994/95 | 75.2 | 75.2 | 85.1 |
| 1995/96 | 84.6 | 92.0 | 88.9 |
| 1996/97 | 73.5 | 64.6 | 84.9 |
| 1997/98 | 91.1 | 80.4 | 85.9 |
| 1998/99 | 94.6 | 97.6 | 57.9 |
| 2000/01 | 94.2 | 87.9 | 32.4 |

In 1996/97 approximately three quarters of the education development budget was financed by donors in Malawi. This represents 22 per cent of overall government expenditure on education in that year. Similarly in Uganda in the years that UPE was being introduced approximately 85 per cent of the development budget was being financed by donors representing 17 per cent of total government expenditure in 1996/97 and 1997/98. The

[60] For full details see Botswana case study report.
[61] Before 1999/00 actual donor development expenditure in education was not included in government recorded data. External development expenditure in education for previous years is taken from the published estimates of recurrent and development estimates.

reduction in donor-financed education expenditure in Uganda is partly due to the introduction in 1998 of the Poverty Action Fund (PAF). The PAF is used by the Ugandan government to channel funds towards priority areas identified in the Poverty Eradication Action Plan (PEAP). The fund was set up with Highly Indebted Poor Countries (HIPC) funds but government and bilateral donors contribute to it. While PAF expenditures are reported separately for each priority area, including education, they are included as government expenditure in both the recurrent and development budgets. Therefore, since 1998/99 donor-financed education development expenditure only includes donor-financed development expenditure that is not included within PAF and will underestimate the contribution of donors to education development spending.

Information on donor education spending in the three countries can also be obtained from the donor side. The Organisation for Economic Co-operation and Development (OECD) Creditor Reporting System (CRS) provides detailed information on members' aid disbursements on education. Table 4.4 gives an indication of the amount of total public education expenditure in each country that is provided by this group of donor agencies. It should be noted that the figures in Table 4.4 should be treated as indicative because the CRS does not completely cover all aid disbursements and there is a slight mismatch between the year of aid disbursements and the year of the government budgets used to calculate the data presented.[62]

Table 4.4 Donor disbursements to education in 2001 (% of total government education expenditure)

| | Total aid to education | | Aid to basic education | |
|---|---|---|---|---|
| | (US$ million) | % of government education budget | (US$ million) | % of government primary education budget |
| Botswana | 2.6 | 0.5 | - | |
| Malawi | 38.6 | 76.4 | 11.1 | 13.9 |
| Uganda | 62.8 | 27.7 | 25.0 | 19.5 |

Note: Government expenditure data is for the latest available year: Botswana 1999; Malawi 2000/1 for total government budget, 1997/8 for primary government budget; Uganda 2000/1. Government expenditure figures exclude external development spending.
Source: Aid data from OECD CRS On-line Database

It is clear that donor assistance in the education systems of Malawi and Uganda is very important. Aid disbursements to education amount to three-quarters of all government

[62] It should be noted that the CRS does not consistently include aid to education going through general budget support. This depends primarily on how the donor agency itself defines its programmes. For a more detailed discussion of the gaps in the CRS see Al-Samarrai *et al.* 2002 and Bentall *et al* 2000.

expenditure in Malawi whereas in Uganda aid to education is approximately 30 per cent. This implies that Malawi is heavily reliant on donor resources in the education sector. Table 4.4 also shows similar figures for basic education. These show that slightly less of the primary education budget is funded from external sources. However, the CRS is quite poor at distinguishing education assistance across the levels and hence these figures should be interpreted cautiously.

### 4.4 Composition of public primary education expenditure

Up to this point the chapter has focused on aggregate expenditure figures and has not discussed what primary education expenditure is actually being spent on. This section explores the composition of recurrent primary education expenditure. In Botswana, teachers' wages have made up 80–90 per cent of primary education recurrent expenditure between 1978/79 and 1999/00. Of the remaining recurrent expenditure approximately half was spent on teaching and learning materials. In the 1980s and 1990s this represented approximately 15 per cent of total primary recurrent expenditure compared to only 7 per cent in 1978/79. This suggests the government of Botswana increased its expenditure on teaching and learning materials to fill the gap left by the abolition of fees.

Figure 4.8: Non-wage primary recurrent expenditure as a percentage of total in Malawi and Uganda[63]

[63] Before 1993/94 non-wage recurrent expenditure is estimated for Uganda using recurrent expenditure estimates rather than actuals. After 1993/94 although most non-wage expenditure is reported under district spending separately there is still some non-wage recurrent spending on primary at the centre. This is broken out for each year based on estimates presented in the annual Estimates of Recurrent and Development Expenditure.

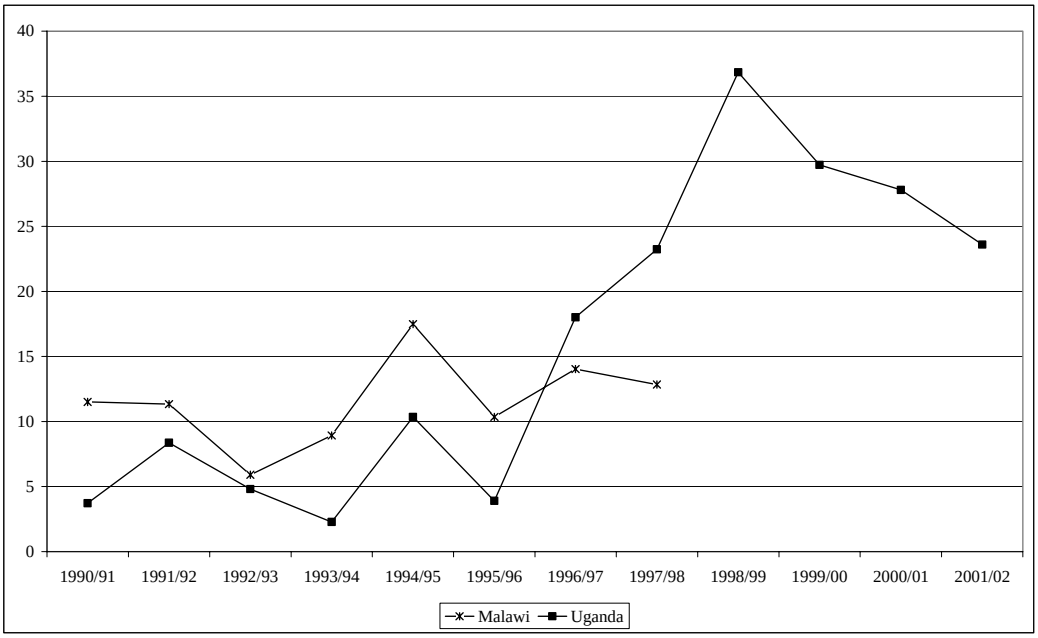
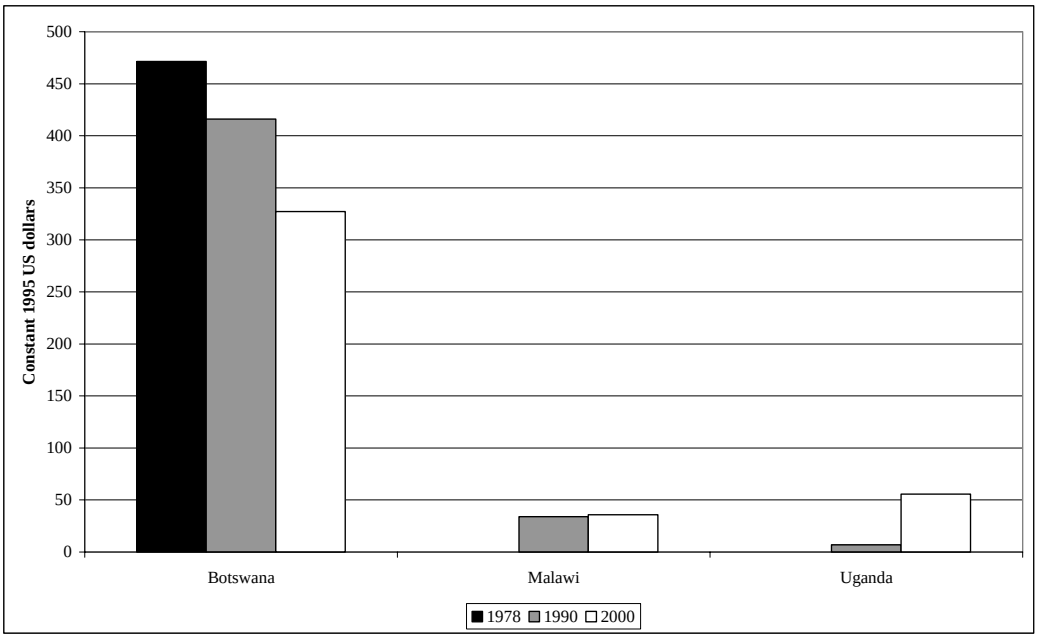



Figure 4.8 shows the percentage of total recurrent expenditure spent on non-salary items in Malawi and Uganda. Non-salary items include operating and maintenance expenses and expenditure on textbooks and other teaching and learning materials. It is clear from Figure 4.8 that in both Malawi and Uganda the majority of primary school expenditure has been spent on salaries and in particular teachers salaries. When fees were abolished in Malawi a slight increase in the proportion of primary expenditure was spent on non-wage items. This was primarily owing to the introduction of spending by the government on teaching and learning materials and expenditure for the rehabilitation of schools. While non-wage expenditure continued to increase in real terms in Malawi it was outstripped by increases in wage expenditure owing primarily to the recruitment of teachers to teach the influx of new students. The pattern in Uganda is very similar for non-wage expenditure. After the abolition of fees non-wage expenditure began to increase owing primarily to increases in government recurrent expenditure on teaching and learning materials and increases in the capitation grants given to districts for primary schooling. In 1998/99 non-wage recurrent expenditure reached 37 per cent of total recurrent expenditure but has declined slightly since. However, non-wage recurrent expenditure in Uganda is far higher than in Malawi.

Given the importance of teachers' wages in overall expenditure at the primary level it is important to see how teachers' wages have changed during the period of primary school expansion. Unsurprisingly, given the much higher levels of real spending, teachers' salaries are much higher in Botswana than in Malawi and Uganda (see Figure 4.9). However, real wages for lowest grade teachers have been declining in the last 20 years. While real wages are much lower for Malawi and Uganda teachers have experienced rising real wages over the

1990s. This is particularly true in Uganda where wages of teachers were increased substantially in 1996/97.

Figure 4.9 Monthly starting salary for lowest qualified teachers in constant 1995 US$[64]




As Chapter 3 showed, primary school expansion led to an increase in the percentage of lower grade (untrained) teachers at the primary level. This implies that a large proportion of newly employed teachers would have started at the lower levels of the teacher salary pay scale. It would be expected therefore that as these teachers move up the pay scale the wage bill at the primary school level would increase. The extent of this increase will be dependent on how dispersed the teacher pay scale is in each country. Comparing lowest to highest grade salaries for primary school teachers shows that the gap has stayed relatively constant in Botswana and Malawi. Highest grade teachers had a salary 2.5 times and 3.3 times the salary of the lowest grade teachers in Malawi and Botswana respectively. In Uganda, however, the primary school teacher salary scale was more compressed than this in the early 1990s. However, after 1996/97 the salary range widened considerably and by 2000 head teachers were being paid 12 times the wage of untrained (lowest grade) teachers.

Chapters 3 and 4 have described in much detail the evolution of the primary education system and how government spending has changed to cope with primary school

[64] It should be noted that Figure 4.9 only provides a rough comparison of teachers' wages across the three countries. Although the figures are for the lowest grade teachers, qualification and training requirements across the countries differ.

expansion. It is now possible to explore the link between public spending and primary education outcomes in the case study countries.

## 5 Public education spending and education outcomes: country case-study trends

The purpose of this chapter is to draw together briefly the information in the previous two chapters to analyse the link between public education spending and education outcomes in the case-study countries. A key question this chapter seeks to address is how this relationship differs from the cross-country relationships outlined in Chapter 2.

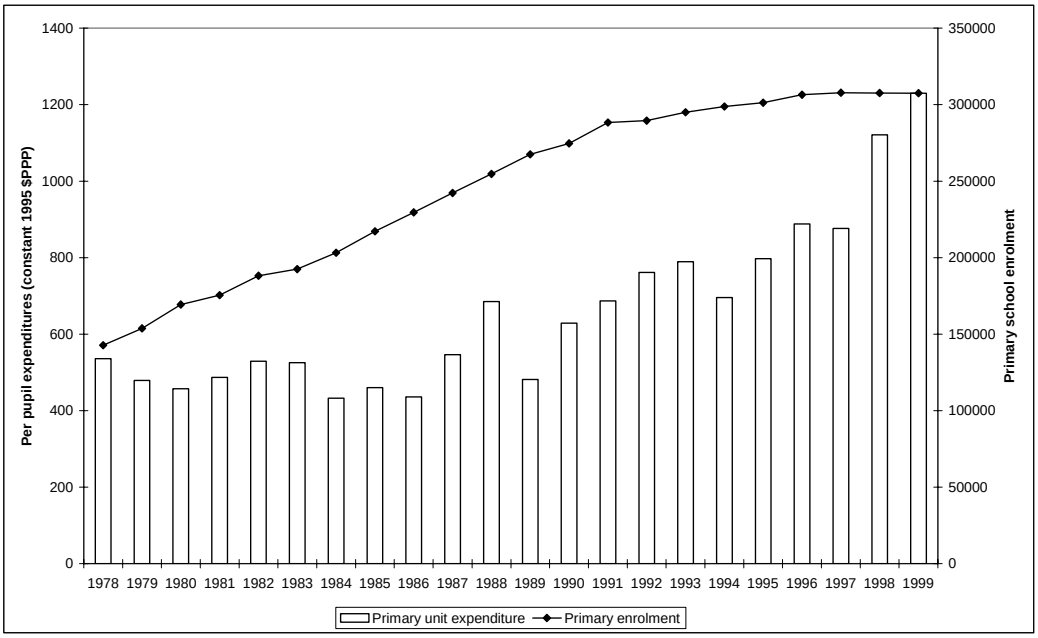
### 5.1 Primary enrolment and levels of per pupil expenditure[65]

During the late 1970s and throughout the 1980s government primary per pupil expenditure in Botswana remained relatively constant in real terms at around US$PPP500 (see Figure 5.1). As primary enrolment was rising rapidly during this period this implies that overall public expenditure on primary education was also rising in real terms at approximately the same rate. However, it is clear that there was no specific emphasis on increasing funding per pupil during this period. Given the importance of teacher salaries in the overall costs of primary education, the fact that the pupil–teacher ratio remained relatively constant and real wages for teachers declined over this period explains the relative stability of per pupil expenditure in Botswana (see Figure 3.8).

Figure 5.1 Government per pupil expenditure and primary school expansion in Botswana [66]

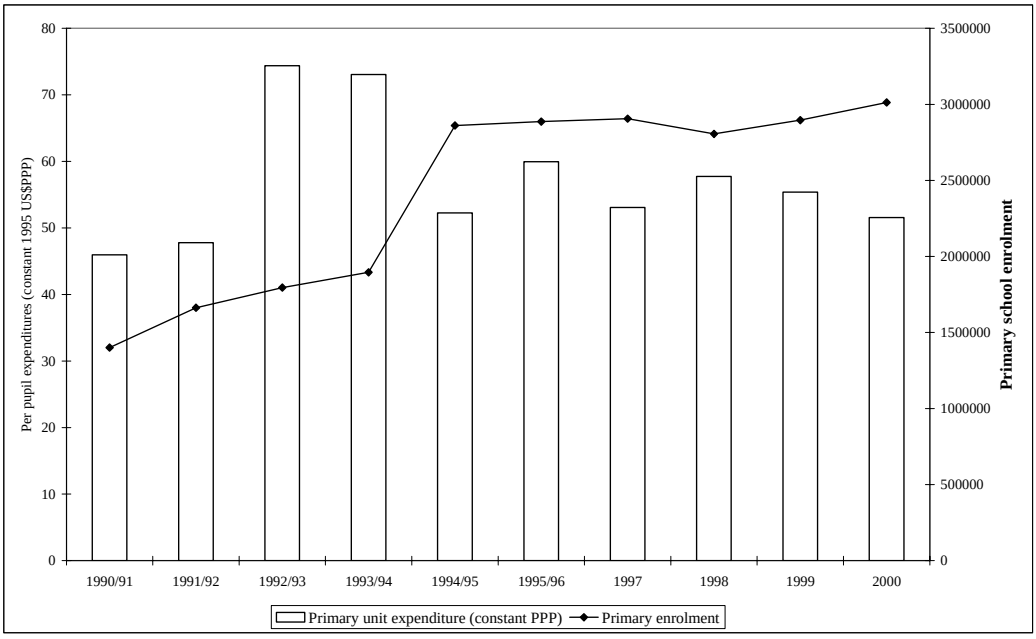
[65] In all of the countries there are mismatches between the financial year and the school year which complicate calculations of per pupil expenditures. To obtain the best match in Uganda the school year (January–December) is matched with the previous financial year (July–June). For example, the 1995 school year is matched with the 1994/95 financial year. In Botswana the school year (January–December) is matched with the same financial year (April–March). In Malawi, before 1997 the school year (October–September) is matched with the same financial year (April–March). After 1997 the school year changed (January–December) and in 1998 the financial year also changed (July–June). For these years the school year is matched with the previous financial year.

[66] Per pupil expenditure refers to both recurrent and development expenditure




Levels of per pupil spending in the early 1990s in Malawi and Uganda were similar but only around a tenth of spending in Botswana (see Figure 5.2 and Appendix Figure A.3). The pattern of per pupil expenditure during primary school expansion is also very different in Malawi and Uganda compared to Botswana. Before the abolition of fees, public education expenditure had been on an upward trend in Malawi. However, in 1994/95 primary spending per pupil declined by approximately one-quarter. This implies that although the government was committed to covering the fees households were paying this did not initially happen. In Malawi, per pupil spending stagnated at this level for the rest of the 1990s. Trends in per pupil expenditure in Uganda have been different; levels of per pupil expenditure before the introduction of UPE were maintained immediately after the abolition of fees. Since 1997/98, per-pupil expenditure at the primary level in Uganda has increased by approximately a third (see Appendix Figure A.3). While Malawi and Uganda spent approximately the same on each primary school student in the early 1990s Uganda has managed to increase its spending after the abolition of fees to US$PPP 83 per-pupil compared to Malawi where per-pupil spending is still at its early 1990s levels of approximately US$PPP 50. The recovery in per pupil spending in Uganda mirrors the evidence shown in Chapter 3 on education inputs. For example, in Uganda pupil–teacher ratios and other input indicators deteriorated dramatically after UPE was introduced in 1997 but began to improve, or at least stabilise, towards the end of the 1990s.

Figure 5.2 Government per pupil expenditure and primary school expansion in Malawi [67]

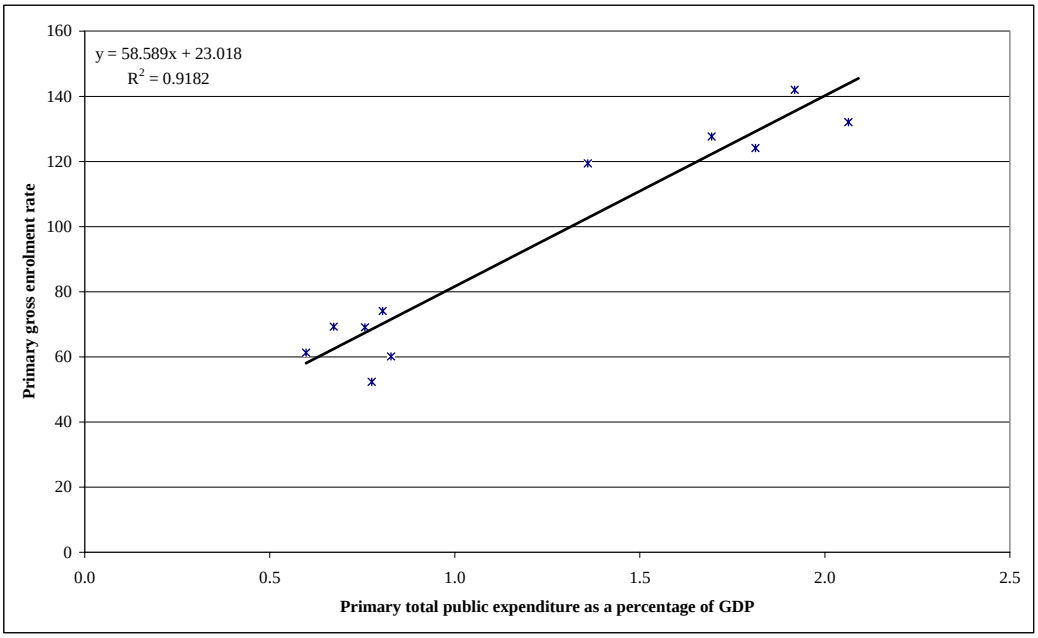



## 5.2 Primary school access and public education spending

How has public education expenditure impacted on access in the three case-study countries? Figure 5.3 shows a simple bivariate scatter plot of public primary education expenditure as a proportion of GDP and the primary GER in Uganda. The scatter plot shows a very strong positive relationship between total expenditure and enrolment rates. Higher enrolment rates have been associated with greater public expenditure. This is perhaps unsurprising given that it is necessary to provide some additional educational inputs to increase access. However, Chapter 2 showed that primary education expenditure as a proportion of GDP did not help to explain much of the variation in enrolment rates across countries. It could be argued that the result in Chapter 2 controlled for GDP per capita and this may cause the differences in results. However, the time-series relationship in Uganda is still evident having controlled for GDP per capita changes.[68]

Figure 5.3 Scatter plot of the primary GER and government primary education recurrent expenditure as a percentage of GDP in Uganda

[67] The 1997/98 financial year ran for 15 months in Malawi to allow for changes in the budget year. Therefore per pupil expenditures for 1997 and 1998 school years are estimated. The 1997 per pupil expenditure is calculated by using a weighted average of government expenditure in 1996/97 (9 months) and 1997/98 (3 months). The 1998 per pupil expenditure is estimated as 60 per cent of total reported government expenditure in 1997/98 divided by 1998 school year enrolment.
[68] These results are available on request.

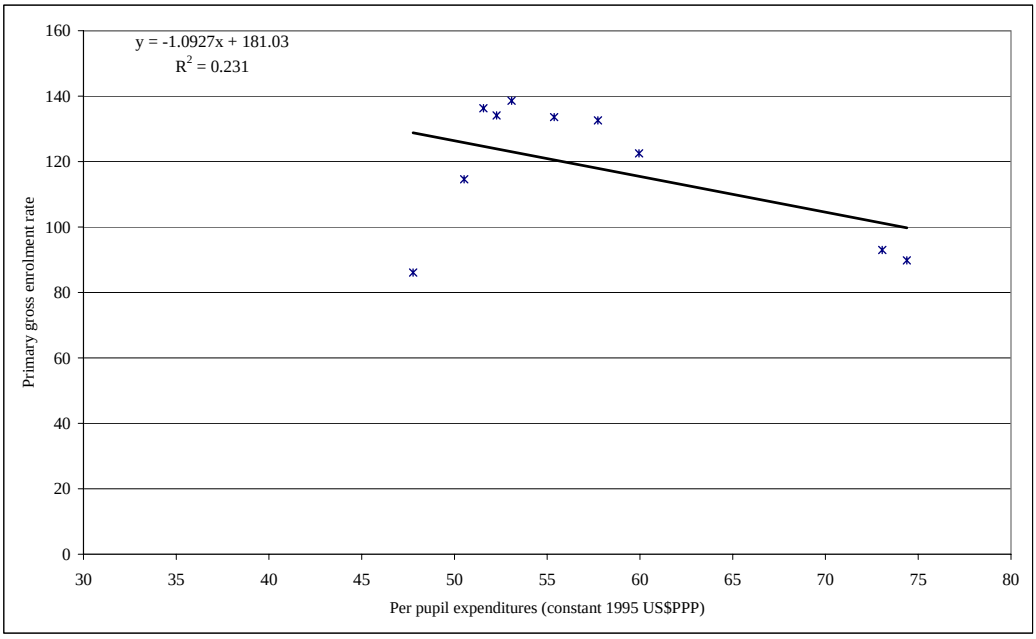



The relationship in Malawi is similar to that in Uganda but this relationship is much weaker in Botswana (see Appendix Table A.10).[69] This is perhaps unsurprising given that Chapter 4 showed that during the time of primary school expansion the share of GDP devoted to primary education was declining in Botswana even though real resources were increasing considerably. Therefore the evidence from the case study countries suggests that the weak relationship found between public education expenditure and primary enrolment across countries may not hold in countries over time.

In Chapter 2 it was also shown that there was a relatively weak link between education access and public education expenditure at the primary level. The one exception to this finding was the significant link between lower levels of per pupil spending and higher primary gross and net enrolment rates (for example, see Figure 2.2). What does this relationship look like over time in the three countries? Has primary school expansion been achieved through a reduction in per pupil spending as suggested by the cross-country evidence? The country case-study evidence tends to suggest something similar. Figure 5.4 illustrates this relationship for Malawi in the form of a simple bivariate scatter. What is clear from this scatter plot is that the primary GER is negatively related to government per pupil expenditure. This is also the case if the primary NER is used as the measure of access. In other words, greater access has been achieved by declines in government spending per primary pupil in Malawi.

[69] Having controlled for GDP per capita this relationship is still relatively strong in Malawi although not significant whereas in Botswana the relationship is very small in absolute terms, negative and insignificant.

Figure 5.4 Scatter plot of the primary GER and primary education expenditure per pupil for Malawi




The relationship, shown in Figure 5.4, for Malawi is different from the relationship in Botswana and Uganda where simple bivariate correlations appear to show a positive relationship (see Appendix Table A.10). However, when GDP per capita is controlled for the relationship between per pupil expenditure and the primary GER is extremely weak.[70] These results appear to confirm the trends discussed in the previous section. When primary school enrolment jumped in Malawi per pupil expenditure declined while in Uganda per pupil expenditure increased slightly. In Uganda, after the initial jump enrolments stabilised while per pupil expenditure began to rise significantly suggesting that increases in per pupil expenditure did not have an impact on access. Likewise in Botswana, per pupil expenditure tended to stagnate during the period of primary school expansion suggesting that the relationship between public spending per pupil and access was weak. Only once enrolment began to stabilise did per pupil expenditures rise (see Figure 5.1).[71]

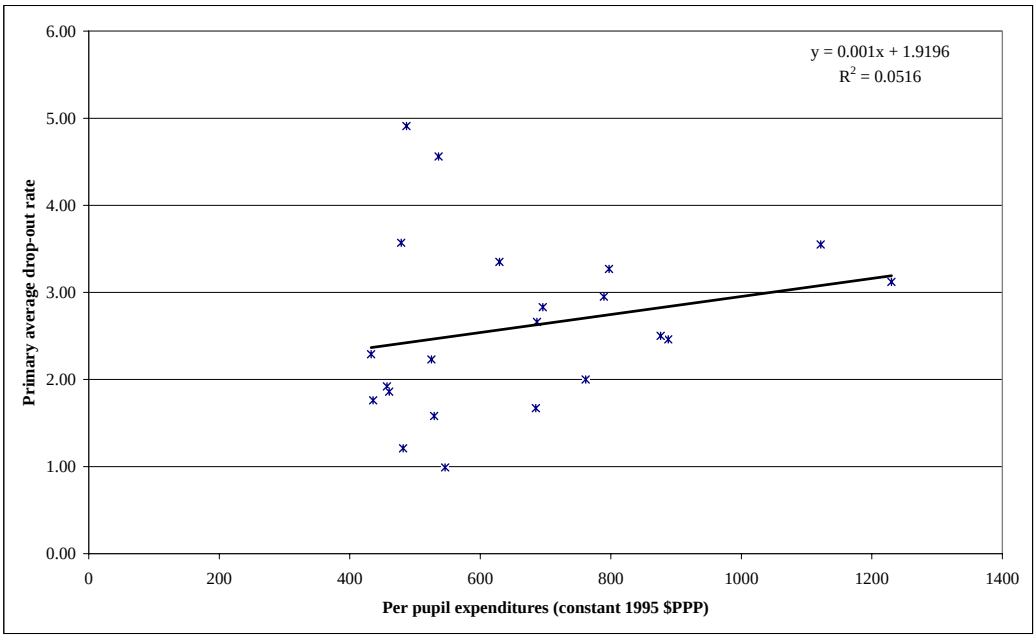
### 5.3 Primary school quality and public education spending

[70] These results are available on request.

[71] The relationship between the pupil–teacher ratio and primary enrolment rates also varies across the three countries. As Chapters 3 and 4 have shown Malawi was successful at reducing the overall pupil–teacher ratio (although the pupil per qualified teacher ratio increased drastically) as enrolments rose. This implies that higher levels of enrolment are associated with lower pupil–teacher ratios. In Uganda pupil–teacher ratios rose as enrolments increased suggesting the reverse relationship. Again, the case study evidence suggests that this relationship is country specific (see Appendix Table A.10).

Proxies similar to those in Chapter 2 were used to assess the impact public spending has had on the quality of primary education in the three countries.[72] Similar to the cross-country evidence the link between public spending and these proxies of primary education quality appears to be weak and often counter-intuitive in the country case studies. For example, Figure 5.5 shows the relationship between drop-out at primary level and per pupil expenditure for Botswana. The regression line suggests that higher levels of per pupil spending in Botswana are associated with higher levels of drop-out.[73] However, it is also clear from Figure 5.5 that there is a great deal of variation around the line; similar levels of per pupil spending are associated with very different drop-out rates. Recall that the cross-country analysis showed a weak but positive relationship between spending per pupil and the proportion of primary school students surviving to Standard 5. The relationship in the case study countries, however, shows a weakly negative relationship (see Appendix Table A.10). Again, these proxies for education quality do not seem to be strongly related to measures of education expenditure.

Figure 5.5 Scatter plot of the average primary school drop-out rate and primary education expenditure per pupil for Botswana




Appendix Table A.10 appears to show that in Uganda higher levels of per pupil spending are associated with lower repetition rates. It could be argued that this shows that higher levels of

[72] The primary school completion rate is not included because population data for individuals of primary final standard age were not collected.
[73] Even after controlling for per capita income this positive relationship remains.

public spending lead to lower levels of repetition. However, it should be recalled that automatic promotion was introduced after the abolition of fees and this period was also associated with higher expenditure per pupil (see Appendix Figure A.3). Therefore, higher per pupil spending did not account for lower repetition in this case.

It is possible that the composition of education spending is important in influencing the quality of education. Unfortunately, it is not possible to explore this at a cross-country level owing to data limitations. However, some limited data on the composition of recurrent education expenditure were available for the case-study countries. Appendix Table A.10 reports correlation coefficients between the quality proxies and non-wage recurrent expenditure per pupil. It is clear from this table, that these relationships are again relatively weak.[74]

The case studies, on the whole, confirm the cross-country findings that the link between public spending and primary school access and internal efficiency is weak. The evidence presented in this chapter throws doubt on the direction of causation between public spending and education system indicators. It has shown that, particularly in Malawi and Uganda, public spending has responded to changes in access rather than the other way around. For example, substantial increases in education access have been achieved without proportional increases in public spending. The results suggest that the impact of education spending decisions on primary school enrolments are likely to be country specific and determined, at least in part, by other education policies (e.g. fee and repetition policy) and the characteristics of the education system. This implies that cross-country comparisons are unlikely to be useful in determining education policy in specific countries.

## 6 The impact of primary school expansion on equity and the education costs facing households

Chapter 3 showed that an important motivation for the introduction of policy to increase access to primary school was increased equity. This chapter briefly discusses the evidence on how expansion affected access to primary school for previously under-represented groups. It also explores whether primary school expansion has led to a more equitable distribution of public resources in the education sector.

[74] The chapter has focused on the relationship between public expenditure and education outcomes over time in the case-study countries. The case studies also explored these relationships at the district level and again found no strong relationship. For a fuller account of these results the interested reader is referred to the case-study reports

So far this report has focused exclusively on public spending and how this impacts on primary education outcomes. As Chapter 2 suggested, a possible reason for the weak link between outcomes and spending may be the fact that private spending on education has not been taken account of. Using the limited available evidence this chapter also assesses how private spending on primary education changed in the case study countries during expansion.

### 6.1 The impact of primary school expansion on equity

It is perhaps unsurprising that primary school expansion in the three countries has improved access disproportionately for the poor. Although time-series information on primary school attendance by socio-economic group is limited Table 6.1 shows the primary school gross and net enrolment ratios by household expenditure before and after the abolition of fees in Malawi. It is clear from this table that primary school expansion between 1990/1 and 1997/8 benefited the poorer groups in Malawi. In 1990/1 the primary NER for the richest quintile was more than double that of the poorest quintile. Therefore, the abolition of fees in Malawi was strongly pro-poor in terms of the increased access it afforded.

Table 6.1 also shows that the gender gap in primary school NERs narrowed after the abolition of fees in Malawi; in 1990/1 the male NER was higher than the female NER but this situation was reversed by 1997/8. In absolute terms the gender gap between male and female GERs appears to have widened over time. Coupled with the changes in the primary NER this suggests that more over-age boys than over-age girls are enrolling in primary school in Malawi. However more recent evidence from Malawi suggests that the absolute gap between male and female GERs has narrowed considerably (Malawi Central Statistical Office and ORC Macro 2003).

Table 6.1 Enrolment rates by income quintile in Malawi

| | Consumption per adult equivalent quintile | | | | | |
|---|---|---|---|---|---|---|
| | Poorest 20% | 2nd | 3rd | 4th | Richest 20% | Total population |
| **Primary GERs** | | | | | | |
| 1997/8 | | | | | | |
| Total | 117 | 121 | 119 | 125 | 120 | 120 |
| Male | 125 | 132 | 121 | 133 | 129 | 128 |
| Female | 109 | 111 | 118 | 118 | 112 | 113 |
| | | | | | | |
| 1990/1 | | | | | | |
| Total | 58 | 76 | 86 | 97 | 110 | 81 |
| Male | 65 | 83 | 88 | 104 | 113 | 86 |
| Female | 51 | 69 | 83 | 89 | 106 | 75 |
| **Primary NERs** | | | | | | |
| 1997/8 | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Total | 76 | 76 | 75 | 79 | 80 | 77 |
| Male | 77 | 76 | 74 | 76 | 80 | 76 |
| Female | 74 | 77 | 77 | 81 | 81 | 78 |
| | | | | | | |
| 1990/1 | | | | | | |
| Total | 33 | 48 | 55 | 62 | 75 | 51 |
| Male | 34 | 50 | 52 | 66 | 76 | 52 |
| Female | 31 | 45 | 57 | 61 | 75 | 50 |

Note: Enrolment rates are calculated from household surveys conducted in 1990/1 and 1997/8
Source: Al-Samarrai and Zaman (2002); 1990/1 data from Castro-Leal (1996)

Very similar trends to those shown for Malawi in Table 6.1 also occurred in Uganda over the 1990s. The primary NER for the poorest 20 per cent of the population was 46 per cent compared to 82 per cent for the richest 20 per cent in 1992. In 1997, primary NERs were 78 and 89 per cent for the poorest and richest quintiles respectively (Deininger 2003). It is also the case that the gender gap in net enrolment declined in Uganda as a consequence of primary school expansion. The gender gap in GERs initially increased owing to the greater number of over-age boys that took the opportunity to begin primary schooling compared to girls. However the gender gap subsequently declined (see Appendix Table A.3).

The effect of these increases in primary school enrolment among the poor and the increases in primary education spending outlined in Chapter 4, for Malawi and Uganda, imply a strong shift in the distribution of government education spending towards poorer socio-economic groups. In Malawi, for example, the poorest 20 per cent of the population received only 15 per cent of total government education spending in 1990/1 compared to 24 per cent in 1997/8 (Al-Samarrai and Zaman 2002). Unfortunately no time-series information is available for Botswana although it is likely that similar trends in terms of equity occurred with primary school expansion.[75]

While there is some evidence on the impact of primary school expansion on equity of access there is very little on how primary school survival and learning achievement differed by gender and socio-economic status and how this may have changed with primary school expansion.[76] To get some idea of how primary school survival may have differed by socio-economic group Table 6.2 shows GERs for upper (Standards 5–8) and lower primary (Standards 1–4) in Malawi. As discussed in Chapter 3, the substantial increase in upper primary enrolment is due primarily to re-entry into these grades after the abolition of fees. It is clear from Table 6.2 that enrolment rates for the lower socio-economic groups are much

[75] For an analysis of primary school attendance by socio-economic group in Botswana in the mid-1990s see the Botswana case-study report.
[76] Micro-level studies of learning achievement and school completion have always pointed to household income as being an important determinant (see for example, Heyneman and Loxley 1983; Harbison and Hanushek 1992; Behrman and Knowles 1999).

lower in upper primary compared with the richer quintiles.[77] This implies that drop-out rates for poorer groups are higher between upper and lower primary school. It is impossible to tell from this information whether a greater proportion of lower income students will complete primary school given their greater access. However, given the low levels of participation before it is likely that this will be the case.

Table 6.2 Gross enrolment rates in lower and upper primary school by income quintile in Malawi

| | Consumption per adult equivalent quintile | | | | | |
|---|---|---|---|---|---|---|
| | Poorest 20% | 2nd | 3rd | 4th | Richest 20% | Total population |
| Standards 1–4 | | | | | | |
| 1997/8 | 166 | 161 | 158 | 151 | 151 | 158 |
| 1990/1 | 82 | 104 | 116 | 123 | 142 | 108 |
| Standards 5–8 | | | | | | |
| 1997/8 | 67 | 77 | 78 | 95 | 84 | 79 |
| 1990/1 | 32 | 45 | 48 | 68 | 77 | 50 |

Note: Enrolment rates are calculated from household surveys conducted in 1990/1 and 1997/8.
Source: Al-Samarrai and Zaman (2002); 1990/91 data from Castro-Leal (1996)

**6.2 The impact of primary school expansion on private education expenditure**

While the abolition of fees appears to have had a massive effect on enrolment there is remarkably little historical evidence on the level of costs faced by households in sending their children to primary school in the three countries.[78] Table 6.3 assembles the information that is available for Malawi. Every effort has been made to include comparable information over the years but it must be noted that different sample methodologies have been used in each year and therefore a cautious interpretation of trends from this table is warranted. It should also be noted that Table 6.3 reports average household expenditure for students in the higher grades of primary. Average per pupil spending on education increases as students move up the education ladder. In 2001, per pupil spending on Standard 6 students in Malawi was nearly five times the amount spent on Standard 1 students (Malawi Central Statistical Office and ORC Macro 2003). Table 6.3 splits average household expenditure on education into non-discretionary and discretionary items. Non-discretionary expenditure on primary education is spending that is absolutely necessary for children to go to school (e.g. fees) whereas

[77] The gap is narrower for the post-UPE cohort (1997/8) although this is likely to be primarily because increases in Standard I enrolment in 1994/5 have not impacted on enrolment rates in upper primary by 1997/8.
[78] Unfortunately, the Botswana case study did not find any information on per pupil household spending in Botswana.

discretionary spending is spending that is partly determined by the relative wealth of the household. For example, the amount spent on food by students while at school will be partly determined by the wealth of their households.

Table 6.3 Average household spending on government primary education in Malawi (constant 1995 MWK)

| | 1983 | 1998 | 2001 |
|---|---|---|---|
| Stationery | 53 | 36 | - |
| Fees | 53 | 0 | - |
| School contributions | 13 | 3 | - |
| **Total non-discretionary spending** | 118 | 39 | - |
| **Total discretionary spending** | 421 | 245 | - |
| **Total (MWK)** | 539 | 284 | 570 |
| **Total (US$PPP)** | 124.4 | 65.6 | 131.6 |

Note: Discretionary expenditure includes clothing, transport, food, etc. Figures reported in table are for higher grades of primary school (1983 Standard 8; 1998 Standards 5–8; 2001 Standard 6), which tend to be more expensive than lower grades. Spending figure for 2001 includes spending on students in private schools although only 5 per cent of total students were in such schools.
Source: 1983 figures taken from Tan *et al.* 1984, reproduced in Rose 2002. 1998 figures taken from Rose 2002. 2001 total household per pupil expenditure taken from Malawi National Statistics Office and ORC Macro 2003.

Non-discretionary spending on primary education appears to have declined substantially in Malawi since the abolition of fees in the 1994/5 school year. In real terms, non-discretionary expenditure declined by two-thirds between 1983 and 1998.[79] The decline in discretionary expenditure was not so marked and therefore total per pupil spending fell by about a half. The decline in non-discretionary expenditure, seen in Table 6.3 between 1983 and 1998, is most likely due to the fact that primary school expansion led to greater access to poorer socio-economic groups (see Table 6.1). However, the most recent information that is available for Malawi suggests that household spending per pupil increased and is now similar to levels before the abolition of fees in 1994/5. It should be noted that the latest figure is an over-estimate of per pupil spending in government schools because it also includes private schools. Furthermore, the 2000 average estimates are heavily influenced by some large

[79] Unfortunately it was not possible to break down the 2001 figure into discretionary and non-discretionary expenditure. However, only a small proportion of households reported and non-discretionary expenditure with the exception of 57 per cent of households who reported paying into the school development fund.

outliers. Median figures are similar and more in line with the 1995 estimates and it is unlikely that household per pupil spending has increased to pre-UPE levels.[80]

Table 6.4 Average household spending on government primary education in Uganda (constant 1995 UGS)

| | 1991 | 1995 | 2000 |
|---|---|---|---|
| Tuition | 1,077 | 1,727 | 1,000 |
| PTA | 13,916 | 18,448 | 317 |
| Development | - | - | 1,331 |
| Exam fees | - | - | 302 |
| Boarding fees | - | - | 33 |
| **Total non-discretionary** | 14,993 | 20,175 | 2,982 |
| **Total discretionary** | n.a. | n.a. | 13,420 |
| **Total** | 14,993 | 20,175 | 16,402 |
| **Total (US$PPP)** | 53.8 | 72.5 | 58.9 |

Source: Information for 1991 and 1995 taken from Ablo and Reinikka (1998); information for 2000 taken from Uganda Bureau of Statistics and ORC Macro (2002).

Table 6.4 presents similar information for Uganda. Pre-expansion data is taken from a school-based survey undertaken in 250 primary schools in 19 districts whereas the 2000 data is based on information from a nationally representative survey of 4,217 households (Uganda Bureau of Statistics and ORC Macro 2002). Similar to Malawi non-discretionary expenditure has declined substantially with the abolition of PTA fees in 1997. Total non-discretionary expenditure between 1995 and 2000 declined by 85 per cent. Unfortunately discretionary expenditure for the pre-expansion period is not available but assuming, as in the case of Malawi, that discretionary expenditure declined owing to increased access by lower socio-economic groups suggests that average household expenditure on education has declined since the abolition of fees.

As the previous section showed, a large share of new enrolment in primary school brought about by the abolition of fees in Malawi and Uganda came from the poorer socio-economic groups. The average per pupil expenditure in Tables 6.3 and 6.4 hides large differences in expenditure by different socio-economic groups. For example, in Malawi

[80] Average household per pupil spending in government schools, across all standards in 2001 was MWK220 (constant 1995 prices) compared to MWK1,040 in private schools. However, per pupil household expenditure on primary schooling for all students (government and private) was much closer to the government average at MWK264.

(Uganda) the latest data on per pupil expenditures suggests that the poorest quintile, measured by asset levels, spent only 57 per cent (12 per cent) of the amount spent by the richest quintile. These differences are largely due to differences in discretionary spending.

While the information contained in Tables 6.3 and 6.4 should be treated with caution, they do suggest that the non-discretionary costs faced by households of sending their children to school declined dramatically in Malawi and Uganda after the abolition of fees. The tables also show that a large part of per pupil expenditure in these countries consisted of discretionary expenditure, which appears to have also declined with the increased access of poorer children into primary school. However, the most recent data from Malawi does suggest that per pupil spending by households has begun to rise again to pre-expansion levels. This may be owing to households taking on more responsibility for providing some of the key educational inputs (e.g. textbooks). Therefore, the costs faced by the households appear to have fallen in Malawi and Uganda although households were still paying significant amounts to send their children to school. For example, in 1998 total per pupil non-discretionary expenditure in 1998 represented 6 per cent of total household spending for the poorest households (Rose 2002). Given that households are likely to have two or more children of primary school age the cost burden of sending all of their children to school represents a significant proportion of household income. Furthermore the loss of child labour from school attendance is also likely to be a significant constraint.

It is possible, with the information on government per pupil spending and the limited information on household spending on primary education, to see the overall impact of the abolition of fees on resourcing. Figure 6.1 shows total (government and household) spending per primary school student. Only non-discretionary household spending is included because this is spending that will have a more direct impact on primary education outcomes than non-discretionary spending.

Figure 6.1 Total (government and household) per pupil expenditure in Malawi and Uganda

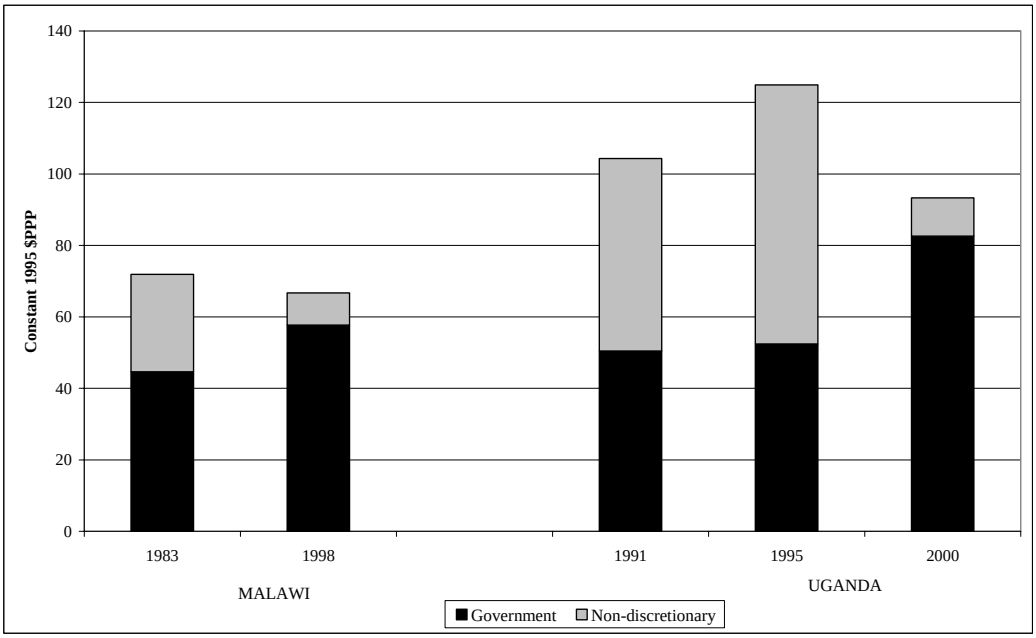



Figure 6.1 shows clearly that after the abolition of fees the proportion of total per pupil expenditure covered by the government increased dramatically, particularly in Uganda. However, these increases in government per pupil spending seen after the abolition of fees do not appear to have fully covered the reduction in private spending on education. Therefore total per pupil expenditure in Malawi and Uganda appears to have declined with the abolition of fees.[81]

## 7 Public expenditure management in the education sector

The report has shown that the link between public expenditure and education outcomes is very weak across countries. In the case-study countries where significant improvements have been made in access to education the report has shown that this was not due to increases in public spending. Furthermore, other outcomes were also not seen to be affected by education spending. These results appear to be unaffected even when private spending is included although data is limited. One interpretation of these results is that public spending on education is inefficient and that public expenditure management systems need to be improved in order to improve the efficiency of resource use in the education sector.

The government budget is a record of the intentions of the government. For education, the ministry of education (and related ministries) budget gives an indication of the

[81] Rose (2002) also makes the point that the reduction in total per pupil expenditure was more severe for spending on teaching and learning materials in Malawi.

plans for the education sector and more specifically reflects the resources allocated to the achievement of those plans. Understanding the budgetary process and the relationship between planning and budgeting is key to understanding the relationship between public expenditure and education outcomes. If resource allocation decisions are not linked to the plans and objectives of the sector it is unlikely that these objectives will be fulfilled. As Penrose states:

> [A] key reason for the whole or partial failure of many initiatives, whether they may be related to financing education, to the introduction of curriculum reforms, to the improvement of teacher quality, or to the introduction of greater participation of communities in schooling, to name four common reform targets, has been the neglect of the budgeting process.
>
> (Penrose 1993: 9)

### 7.1 General budgetary arrangements

In each of the case-study countries, but particularly Malawi and Uganda, colonial systems of budgeting have been adapted or replaced with systems that attempt to link planning, budgeting and outcomes more closely. These budgetary reforms have been introduced largely owing to a general disappointment with the effectiveness of old budgeting systems to link effectively government development priorities and objectives with resource allocations (see Caiden and Wildavsky 1974; Dean and Pugh 1989; Penrose 1993; Lienert and Sarraf 2001).[82] Original budgetary processes were incremental in nature; individual departments of the ministry submitted their bids for next year in isolation from other departments, with little regard to sector priorities and the fiscal stance of the government. The incentives for departments were to maintain or improve their allocations even in times of declining resource availability or re-evaluation of sector priorities (Penrose 1998).

There have been two main areas of budgetary reform that have taken place in response to these problems, centred on the introduction of Medium-Term Expenditure Frameworks (MTEFs). First, MTEFs, introduced in many African countries during the 1990s, attempt to match the resources available to government over the medium term (3–5 years) with government spending priorities. Second, MTEFs are also designed to introduce different types of programme budgeting into the budgetary process. Programme budgeting essentially reorganises the budget and budget formulation around objectives and activities instead of allocating resources to items that do not immediately reflect objectives of government policy. Planning and budgeting are therefore more integrated and the budget is formulated and

presented to reflect resource allocations for specific objectives. For example, ministry of education budgets may originally have had a line item for personal emoluments. This line item would represent allocations by the government for salaries of all personnel within a particular unit of the ministry whether they were teachers, administrators or local security guards. With this type of budgeting it is very difficult to integrate plans for more primary school teachers as increases in allocations for primary school teachers could be confused with other personnel. Furthermore, programme budgeting is argued to lead to more efficient resource allocation information on what the government is expecting to achieve with a specific budget allocation is made more transparent.

MTEFs are not a set of completely new ideas in budget making. After achieving independence, most African countries set their budgets using NDPs that prioritised government objectives and set these against medium-term fiscal forecasts. However, in most countries these systems were scrapped. One exception has been Botswana where national development plans combined with workforce and fiscal forecasting have been maintained as the tools used to match priorities with available resources. Therefore, Botswana's public expenditure management system has remained relatively unchanged since independence. NDPs in Botswana initially covered a period of five years but have since been increased to cover six years. The plans set out the overall government workforce, recurrent and development budget forecasts over the plan period and through a process of extended negotiation with line ministries allocates resources to each sector. The Ministry of Finance and Development Planning (MFDP) is tasked with the production of the NDP and both the recurrent and development side of the budget are covered by the one ministry. The NDP is reviewed during the annual budget process where expenditure ceilings and activities over the course of the following year are revised. The NDP is fully integrated into the budget process and is approved by Cabinet before being taken to the National Assembly where it is extensively debated and revised.

MTEFs were introduced in Uganda in 1992 and in Malawi in 1996. Table 7.1 details the main characteristics of MTEFs in Malawi and Uganda. It is clear from this table that the characteristics of MTEFs in the two countries are very different. The MTEF in Uganda encompasses a great deal more of the specific components of an MTEF than Malawi's MTEF. Houerou and Taliercio (2002) attempt to classify all MTEFs in Africa and categorise Malawi's MTEF in the basic/preliminary group whereas Uganda's MTEF is recognised as comprehensive.

Table 7.1 Characteristics of MTEFs in Malawi and Uganda

[82] They have also been introduced as a direct response to largely unsuccessful changes in the USA and

| | General | Technical | Organisational |
|---|---|---|---|
| **Malawi** | • Central government only<br>• All sectors are supposed to be included<br>• Recurrent and capital budgets included<br>• MTEF is based on 3-year cycle | • Macro/fiscal framework provides projections and indicative aggregate and sectoral ceilings but not in a timely manner | • Not fully integrated in the budget process and not approved by Cabinet<br>• Budget office manages MTEF<br>• Sectoral participation minimal<br>• No civil society input<br>• Little sectoral autonomy<br>• No performance agreements<br>• No training provided |
| **Uganda** | • Central and local (2000) levels<br>• All sectors included<br>• Recurrent and capital budgets included<br>• MTEF is based on 3-year cycle | • Macro/fiscal framework provides projections and indicative ceilings | • Integral part of budget process and approved by Cabinet and Parliament<br>• Finance ministry manages process<br>• Sector working groups develop sectoral expenditure frameworks<br>• Formal civil society input no performance agreements<br>• No sectoral autonomy<br>• Some training provided |

Source: Adapted from Houerou and Taliercio 2002

In Uganda a broad set of stakeholders are included in the MTEF with civil society and parliamentarians represented at the consultative budget workshop that starts the annual budget process. The MTEF in Uganda also includes the PAF, which has been successful in channelling greater resources to priority areas identified in the Uganda PEAP.

MTEFs are expected to lead to much greater macroeconomic stability and improved efficiency (both allocative and technical) of public spending. Improved macroeconomic stability comes about through increased government fiscal discipline because MTEFs match government expenditure plans with resources available to fund these plans. It is argued that fiscal deficits, common in many African countries, are more easily controlled when an MTEF is in place. MTEFs are also expected to lead to improvements in allocative efficiency both across and within government spending sectors. It was often the case that line ministries' budgets would be determined annually on an incremental basis and without regard for other ministries. Over time this was seen to lead to major allocative inefficiencies with areas that were no longer a priority receiving large public expenditure allocations. The MTEF process sets expenditure ceilings for all sectors and because this is done in a more integrated way it can be used to allocate resources to priority areas improving allocative efficiency.

the UK (see Wildavsky 1974; Dean and Pugh 1989).

The MTEF process is also expected to derive efficiency gains through a similar process at the intrasectoral level. For example, it is often argued that ministry of education budgets are heavily skewed towards tertiary education. MTEFs, by highlighting intrasectoral allocations, are expected to lead to fundamental reviews of sectoral priorities and current expenditure allocations. A further expected outcome of the introduction of MTEFs is the improved predictability of resources available to sectoral/line ministries. This outcome is expected because of improvements in macroeconomic stability and the firm expenditure ceilings given to line ministries over the medium term. This means that line ministries are able to plan more effectively. Improvements in technical efficiency are predicted with MTEFs because line ministries are expected to have greater flexibility in managing their budgets having already agreed upon priorities and programmes. MTEFs are also intended to focus on sectoral outcomes rather than just on expenditure outcomes and hence a greater focus on outcomes is assumed to lead to greater technical efficiency.

Exploring to what extent these outcomes have been achieved in the case-study countries allows not only an assessment of how well MTEFs have been operating but also a comparison of the functioning of the public expenditure management systems across the three countries more generally.

### *7.1.1 Macroeconomic stability*

Government fiscal deficits are one measure of macroeconomic stability. Figure 4.7 has already shown the primary fiscal deficits in the case-study countries. There is some evidence to suggest that the primary fiscal deficit/surplus has been declining over the 1990s in Uganda but has increased in Malawi. In Uganda budget deficits of 60 per cent of total government expenditure were common but this steadily declined during the 1990s to around 30 per cent although this has begun to increase again. It is widely argued that the MTEF in Uganda has led to marked improvements in macroeconomic stability (Bevan and Palomba 2000). In Malawi, deficits were not as large as in Uganda in the early 1990s but have fluctuated between 35 and 50 per cent since. It is clear however, that budget deficits are large in both of these countries and, while there are some indications of reductions in Uganda, fiscal imbalance remains a crucial issue in both countries.

Botswana, on the other hand, has had extended periods where large fiscal surpluses were achieved leading to the build-up of substantial reserves. While this has been predominantly owing to the much more favourable revenue situation (see Chapter 4), due to diamond revenues, it is clear that the government has been cautious in its spending decisions and has maintained a strong degree of macroeconomic stability.

### *7.1.2 Improvements in allocative efficiency*

MTEFs are expected to lead to increases in government allocations to priority areas; in most cases these have included education, health and physical infrastructure. Chapter 4 has already discussed in detail changes in intersectoral spending allocations in the case study countries. In all case study countries real resources allocated to education have grown at a faster rate, over the time periods covered, implying that education's share of total government expenditure has been increasing over time (see Table 4.1 and Appendix Tables A.8 and A.9). This has also generally been the case for the other social sectors most notably health. In Uganda, public recurrent expenditure on education, health, roads and works have all grown in real terms at 16–18 per cent annually over the 1990s compared to an average of 12 per cent for government expenditure as whole. Therefore, in all of the case-study countries it appears that improvements in allocative efficiency have occurred most notably with increases in education spending during the 1990s. However, large differences in the share of the government spending allocated to education remain across the three countries (see Chapter 4).

It is not clear that these shifts have necessarily been associated with the introduction of MTEFs. As Chapter 4 showed, a major factor in these changes in Malawi and Uganda has been the abolition of primary school fees. The resource reallocations that this brought on did not coincide with the introduction of MTEFs. As a recent review of the MTEF in Malawi states:

> It is unlikely that the reallocations of resources has been the result of improved information on the costs or benefits of different expenditure programmes. Indeed, it would appear that it has been executive decisions at Cabinet level – influenced by broader strategic and political considerations – that have driven the process of resource allocation. The most influential of these was clearly the decision to introduce free primary education in 1994.
>
> (Government of Malawi 2000b)

A further aspect in improving allocative efficiency is attempting to incorporate all spending in setting government priorities including, and most notably, donor assistance. Off-budget development assistance skews government priorities and weakens the government budget's ability to plan effectively. As Chapter 4 showed, given the very high levels of donor assistance to Malawi this is very important. A recent public expenditure review in Malawi estimated that the five main bilateral donors to education in Malawi (Canadian International Development Agency (CIDA), Danish International Development Agency (DANIDA), UK Department for International Development (DFID), Kreditanstalt für Wiederaufbau (KfW) and USAID) accounted for 50–60 per cent of the total education development budget in recent years and this is all off-budget (World Bank 2001). In Malawi attempts have been

made to co-ordinate development assistance in the Ministry of Finance (MoF). However, this is not done particularly well and much donor spending remains off-budget. In Uganda, government encourages donors to provide all support through budget support in order to ensure that all expenditure is prioritised according to the PEAP. In the education sector the government and donors have successfully co-ordinated their efforts in the ESIP and the majority of development assistance to the education sector is provided as budget support as opposed to project aid. The sector-wide approach in Uganda continues to inform other countries attempts to co-ordinate donor and government activities in the education sector.[83]

### *7.1.3 Budget predictability*

Looking at variations in budget allocations and resulting outturns gives some indication of the effectiveness of the budget system in allocating resources to priority areas. If there are large variations in budgeted and actual expenditure this would suggest that the budget is not operating as an efficient mechanism to allocate government resources. Furthermore, with the introduction of MTEFs budget predictability is expected to improve.

Table 7.2 shows budgetary performance in Uganda for various years in the late 1990s. The table shows, by sector, the percentage of budgeted expenditures that were actually spent. For example, in 1997/8 public administration spent 111 per cent of its budgeted expenditure indicating that this sector overspent its budget. Overall the table shows that in the late 1990s budgetary performance was very good in Uganda with over 95 per cent of total budgeted expenditure being spent and importantly no aggregate overspending. This implies that budget predictability in Uganda, during the late 1990s, was particularly good. However, the totals mask some disparities across sectors and economic classifications. Public administration consistently overspends its budget. In 2001/2 the main overspends within public administration occurred in the Parliamentary and Electoral Commissions and the Ministry of Finance, Planning and Economic Development (MFPED) which exceeded their budgets by approximately 75 and 58 per cent respectively (Republic of Uganda 2002). Agriculture, on the other hand, often records significant underspends on its budget. These do not appear to be due to sector specific circumstances but primarily due to overspends in other sectors. As the annual budget performance document for 2001/2 points out:

> The 20 per cent underperformance of non-wage releases, mainly in the Ministry of Agriculture and the National Agriculture Research Organisation (NARO), were the result of cuts in the cash releases necessary to offset the revenue shortfalls and raise resources for supplementary expenditures.

[83] It is not the intention of this report to review sector wide approaches in education. For a

(Republic of Uganda 2002)

Budgetary performance in the education sector has been mixed as Table 7.2 shows. Directly after the abolition of fees education slightly overspent its budget. This was primarily owing to overspending on wages as additional teachers were recruited to accommodate the increases in primary school enrolment. However, education consistently underspent in 1999/0 and 2000/1 and in absolute terms was the largest underspending sector. As we have seen in Chapter 3 this has been primarily because of the failure of districts to recruit the planned number of additional primary school teachers. Budgetary performance in 2001/2 was very good in terms of the aggregate but there were significant underspends on non-wage expenditure due to underperformance at the centre and some savings due to changes in capitation grant calculations. The budget for wages in this year were overspent owing to the recruitment of teachers at higher salary grades than had first been envisaged in the budget (Republic of Uganda 2002). It is also interesting to note that after 1997/8 development expenditure was also below budget levels. However, similar to the underspend on wages in 1999/2000, this was not because of cuts in resources but an inability of districts to absorb the large increases in funding available for primary school and classroom construction.

The data shown in Table 7.2 is insufficient to assess whether budgetary performance has improved since the introduction of the MTEF in Uganda in 1992. There is some disagreement about the impact of MTEF on budget predictability among studies that have explored this issue, with some suggesting it has improved considerably (Bevan and Palomba 2000) and others concluding that there is no discernable trend in budget performance since the introduction of MTEF (Houerou and Taliercio 2002).

Table 7.2 Budget performance: variation in budgeted and actual expenditure by sector in Uganda (%)

| | 1997/8 | 1999/00 | 2001/02 |
|---|---|---|---|
| Public administration | 111 | 101 | 112 |
| Justice/law and order | 102 | 104 | 99 |
| Security | 103 | 99 | 104 |
| Roads and works | 82 | 95 | 92 |
| Agriculture | 81 | 97 | 86 |
| Education | 104 | 94 | 100 |
| *Wage* | *108* | *92* | *108* |
| *Non-wage* | *96* | *100* | *94* |
| *Development* | *106* | *90* | *90* |
| Health | 94 | 94 | 96 |
| Economic functions and services | 96 | 75 | 88 |
| **Total** | **99.1** | **95.5** | **98.8** |

comprehensive review see (Ratcliffe and Macrae 1999).

| | | | |
|---|---|---|---|
| *Wage* | 102 | 93 | 101 |
| *Non-wage* | 100 | 104 | 103 |
| *Development* | 99 | 85 | 89 |

Source: 1997/8 data from Bevan and Palomba (2000); all other data from Republic of Uganda 2000a; Republic of Uganda 2002

It is immediately obvious from Table 7.3 that the budget in Malawi is far more unpredictable than in Uganda. Firstly, overspending is extremely common in Malawi with 1996/7 being an unusual year in the sense that actual expenditure almost matched budgeted amounts. Overspending tends to be very large in absolute terms. In 1994 Malawi experienced a severe drought, which is reflected in the 1994/5 budget where actual total government expenditure exceeded budgeted expenditure by nearly 30 per cent, representing approximately 10 per cent of GDP. A large overspend can be seen in Table 7.3 for other social sector spending which includes social security and welfare services, which increased dramatically owing to the drought. However, more generally budget unpredictability combined with large primary fiscal deficits has led to macroeconomic instability including large current account deficits and high inflation and interest rates in Malawi during the 1990s.

Table 7.3 Budget performance: variation in budgeted and actual expenditure by sector in Malawi (%)

| | 1994/5 | 1996/7 | 1998/9 |
|---|---|---|---|
| Defence | 193.2 | 131.1 | 106.3 |
| Public order and safety | 315.8 | 123.3 | 80.7 |
| Education | 193.2 | 98.0 | 98.4 |
| *Recurrent* | 158.5 | 122.0 | 85.1 |
| *Development* | 300.0 | 36.0 | 151.3 |
| Health | 117.4 | 65.3 | 84.2 |
| Other social services | 1,646.2 | 76.3 | 104.2 |
| Economic services | 104.4 | 54.2 | 63.8 |
| Unallocatable expenditures | 118.5 | 146.4 | 155.9 |
| **Total** | **127.9** | **99.9** | **102.0** |
| *Recurrent* | 133.9 | 100.6 | 112.1 |
| *Development* | 104.5 | 97.3 | 84.8 |

Source: Government of Malawi Economic Report (Various issues)

Improvements in aggregate budgetary performance can be seen after 1994/5 although there are still substantial intersectoral differences in budget performance. Defence and unallocatable expenditures consistently overspend their budgets; in 1994/5 defence spent almost twice its budgeted amount. Overspending on debt servicing is the main reason for overspending under unallocatable expenditures, which represents an inability to calculate debt repayment obligations on an annual basis. Since 1994/5 health and economic services have

recorded large underspends. Under economic services agriculture is again the main sector that bore the brunt of the underspending.

The education sector substantially overspent in 1994/5 in response to the abolition of fees in this year. A very large number of untrained teachers (see Chapter 3) were recruited explaining the almost 60 per cent increase in actual over budgeted expenditure. Development expenditure in the education sector exceeded budget by 300 per cent and reflects increases in spending to accommodate the primary school expansion. Since 1994/5 the education sector overall has slightly underspent its budgets. However there are wide differences between budgets and actuals in recurrent and development spending. This suggests that there was a great deal of unpredictability in the resources available to the education sector and the government budget has not been a particularly useful tool in planning and budgeting and in particular for the education sector. Furthermore, while Table 7.3 may suggest an improvement in budget performance since the introduction of the MTEF in 1996/7 this is only because of 1994/5 where fiscal discipline appears to have broken down. Taking a slightly longer term view does not appear to suggest that the introduction of MTEF has had any significant impact on the trends in budget performance.

Budget predictability in Botswana, perhaps unsurprisingly, has been strong over a long period of time. In the education sector 99 per cent of the recurrent budget was spent in 1997/8 although only 95 per cent of the development budget. Underspending on the development budget has been a consistent problem for the education sector. This has been partly because of the lack of absorptive capacity of districts to utilise the resources but has also been owing to private construction companies failing to complete projects on time.

It seems clear that Botswana has a well-functioning economic planning process similar to an MTEF. This system has been in place for a long time and is firmly integrated into the budgetary process in Botswana. It has been responsible for allocating substantial mineral revenues to priority sectors and maintaining macroeconomic stability. Bevan and Palomba neatly summarise the experience of Uganda with the MTEF during the 1990s:

> The MTEF and ancillary policymaking instruments in Uganda have been successful in delivering macroeconomic stability in an environment which has not been excessively turbulent, but has certainly posed some problems for macroeconomic management. It has been very successful in overseeing a substantial shift in expenditure composition, most notably in favour of education. In addition, it has had a good record of protecting priority sectors against cuts, which of course means that these have been concentrated on other sectors, which may also be damaging.
>
> (Bevan and Palomba 2000)

Despite the great progress in Uganda with regards to the MTEF the recent public expenditure review acknowledged that the budget system needed to move away from concentrating on levels of spending and inputs towards a stronger focus on the impacts of this spending and the quality of outcomes associated with it (World Bank 2002b).

The experience in Malawi over the 1990s has been of macroeconomic instability and poor budget performance. The MTEF in Malawi was barely integrated into the budgetary process and lacked political commitment in its implementation. It seems clear that the budgetary process is a very ineffectual tool in allocating government resources to priority sectors.

### 7.2 Budget and planning formulation in the education sector[84]

In the case study countries the broad current priorities of the education sector over time are accounted for in specific sector plans; the education chapter in the NDP in Botswana, the PIF in Malawi and the ESIP in Uganda. As Chapter 3 noted, the PIF and the ESIP and the objectives of the education sector contained in them were formulated as a response to primary school expansion. This section assesses to what extent these education sector plans are integrated into the wider budgetary process.

As we have seen in the previous section the NDP in Botswana is a well-integrated mechanism for matching government priorities in all sectors with available resources. The education sector is fully integrated into the NDP and the process within which it is formulated. The starting point for the formulation of the MoE contribution to the NDP is the guidelines produced by the MFDP including the six-year expenditure forecasts for the MoE budget. Extensive consultations within the MoE and outside with key stakeholders are conducted before the MoE drafts its chapter of the NDP. The chapter reviews the current status of the education sector, progress made under the last NDP and the priorities over the next plan period. The responsibility for primary education infrastructure and school supplies falls under the remit of the Ministry of Local Government (MLG). District Development Plans (DDPs) outline the primary school infrastructure and school supplies needs in each district.[85] These are consolidated by the MLG and submitted as part of their contribution to the NDP. An attempt is made at this stage to reconcile stated priorities with the expenditure ceilings laid out by the MFDP. With all sector plans submitted the MFDP then compiles the NDP and ensures that proposals are within expenditure ceilings and that sectoral priorities are in line with government priorities. Adjustments are made at this stage but any outstanding conflicts between the MFDP and line ministries are resolved at the Cabinet level. Once

[84] This report only briefly describes the budgetary process in each country. For detailed accounts of how the budget process in the education sector is conducted see the case study reports.
[85] District development plans were introduced in 1977.

Cabinet approval has been secured the draft NDP goes to the National Assembly for debate and amendment before being finalised.

A similar process occurs in the preparation of annual budgets. Expenditure and manpower ceilings are recalculated by the MFDP based on more recent information and sent to the MoE and MLG for comment. After changes in the ceilings are made, based on comments from line ministries, they are sent to Cabinet for approval before line ministries begin the task of preparing detailed annual budgets. In preparing the detailed budgets project status and progress towards the priorities laid out in the NDP are reviewed. Again, the MFDP considers the annual budgets and ensures consistency between the NDP and the annual budget submissions. A number of committees, including the Estimates Committee, are involved in assessing each line ministry's budget and ensuring that recurrent, development and manpower implications of each budget are consistent with aggregate government plans. It should be noted that while the development and recurrent side of the budgets are produced separately there is extensive review of recurrent expenditure implications of development plans to ensure consistency, which is greatly enhanced by the setting of workforce ceilings. Based on extensive consultation the Estimates Committee makes recommendations to Cabinet concerning changes to the Cabinet-approved expenditure ceilings.

The system in Botswana has been in place for a very long time and is seen to function well. While reviews of progress in previous plan periods show some failure in achieving all the goals set out, particularly with respect to school infrastructure, there is a tight fit between plans and outcomes although these outcomes have tended to focus on inputs rather than education outcomes as such.

Like the NDP in Botswana, the ESIP provides the main statement of government priorities and strategies in the education sector in Uganda. The ESIP priorities and strategies are linked to the MTEF through the education Sector Working Group (SWG) that prepares annually the education sector Medium-Term Budget Framework (MTBF). The education MTBF translates sector priorities into an annual budget as well as outlining activities over the medium term (three years) given the expenditure ceilings set out in the MTEF. The MTBF is submitted to Cabinet and then sent to MFPED to ensure that the budget does not exceed expenditure ceilings. Any deviations are thoroughly discussed and MoES defends its budget in meetings with MFPED. After MFPED has consolidated budgets from all spending agencies the budget is presented to Cabinet for discussion and approval before being sent to Parliament.

A key input into the SWG and its preparation of the education MTBF are the biannual education sector reviews. These reviews are designed to assess the performance of the education sector against targets set out in the ESIP. The ESIP is a sector-wide approach with substantial donor support financially and technically. In fact, education has the longest

experience with the sector-wide approach in Uganda. Education sector reviews are jointly undertaken by the government of Uganda and its donor partners. The reviews have been instrumental in identifying challenges to achieving targets set out in the ESIP, refining these targets and identifying areas that need strengthening to achieve the goals set out in the ESIP (see Chapter 3). They also make recommendations for inclusion in the annual budget as well as providing a forum for education stakeholders to discuss the education MTBF. It should be noted that while decentralisation is continuing in Uganda local governments currently do not play a substantive role in budget formulation in the education sector. District development plans are formulated by districts and fed into the local government budget framework paper at the centre. However, the MoES has a set of conditional grants for district disbursements, which undermines any district level planning and budgeting for the education sector.

In Uganda there is a focus in the budgetary process on education outcomes given that the ESIP and the education sector reviews are strongly motivated by outcomes rather than inputs. For example, teaching and learning materials have been included in these plans as being a priority area for improvement in quality and budget provision has responded accordingly (see Chapter 4). As the recent World Bank public expenditure review noted:

> Therefore, the budget preparation process in education has enabled substantial progress in improving allocative and operational efficiency compared with most other sectors.
>
> …
>
> While it is commonly agreed that there has been substantial improvements in allocative and operational efficiency in the education sector they still represent major challenges. However, there are some very important areas in which the education sector has improved operational/technical efficiency. For example, textbook procurement reforms have seen a 65 per cent fall in the prices of textbooks bought by the government.
>
> (World Bank 2002b)

Budget formulation in the MoESC in Malawi is not well integrated into broader government budgetary mechanisms as outlined in the previous section. Consequently the budgetary process in the MoESC does not function particularly well in allocating resources to priority areas. In the education sector, activity-based budgeting at the division level is used to formulate budgets for the divisions, which are also cost centres in the central government

budget.[86] These budgets are intended to reflect overall education priorities for Malawi with some district level variation. Once the division budgets have been formulated they are evaluated by the MoESC and adjustments are negotiated if divisional plans do not fit in with government priorities as set out in the PIF. While activity-based budgeting is used in the preparation of division plans the MoESC has to reproduce these budgets in line item form before presenting the estimates to the MoF. Furthermore, budgeting is undertaken separately for the recurrent and development side of the education budget.

As in Uganda, the MTEF provides the MoESC with annual expenditure ceilings. However, these ceilings are generally provided after the divisional budgetary process has been completed. This implies that indicative expenditure ceilings from the previous years MTEF (i.e. projections for two years ahead) are used in budget formulation. Due to the poor functioning of the MTEF in Malawi outlined in the previous section these projections are generally very different from the expenditure ceilings that are provided late by the MoF. Therefore the budgetary process in general produces budgets that are often wildly inconsistent with the resources available to the education sector.

It is invariably the case that the final ceilings given to the MoESC from the finance ministry represent substantial cuts in expected funds. Furthermore the MoESC has very little time to consult with divisions and reformulate budgets. It has therefore been common for the MoESC to distribute these cuts equally across all sub-sectors and activities regardless of education priorities. This has had led to a great deal of frustration and a number of unintended impacts on the budget formulation process. Divisions and districts are aware that their carefully developed budgets are always cut arbitrarily and therefore have an incentive to overestimate budgets initially. Box 7.1 outlines some of the major problems in the budgetary process in education highlighted by a recent public expenditure review.

Box 7.1 Issues in the budgetary process in Malawi

• Initial activity based budget estimates are typically in excess of final ceilings. Budget revisions are carried out using the line item budget rather than activity based budgets. Therefore the link between the activity based budget and the line item budget is broken.

• Revision of budgetary estimates, following the submission of final ceilings, is often done in a very short span of time. As a result a transparent process of consulting with the Ministry, to re-prioritise activities is often not done.

• Another key problem is the relative apathy within Ministry headquarters to produce activity based budgets as cost centre managers believe there is little link with the actual budget they

[86] All education institutions with divisions are organised under districts and these institutions initially provide funding requirements to district offices in support of the formulation of the overall division education budget.

will receive during the year. Resources for headquarters are nominally allocated to cost centres but in practice managed centrally and used for the most urgent perceived need at the time.

• Another serious problem in budget preparation is the separation of the recurrent and development budget compounded by an ineffective Budget Coordination Committee.

• A key problem within education is that budget preparations are conducted separately by the Ministry of Education (primary, secondary and teacher education), the University of Malawi and other recipients of education subventions. In other words, strategic prioritisation within the education sector as a whole does not take place.

World Bank 2001

**7.3 Budget execution**

In both Malawi and Uganda cash budgeting systems are in place to ensure that line ministries do not overspend their budgets and that government, as a whole, only spends what it has available in revenue.[87] Cash budgeting is a common way of controlling expenditure and introducing fiscal discipline on governments.

While cash budgets have been seen to have a positive effect in controlling expenditure they also have a number of negative impacts on the operation of line ministries including ministries of education. The level of resources available to government spending agencies is unpredictable because it is based on the resources that become available in the preceding month in Malawi and the preceding three months in Uganda. This makes it difficult for line ministries to plan effectively given the unpredictable nature of revenue flows and the short time-span involved between determining the level of resources available and spending. This can lead to major inefficiencies in spending decisions. For example, it is often the case that under cash budgeting systems non-wage expenditure is particularly squeezed as wages have a first call on available resources (Lienert and Sarraf 2001). Furthermore, cash budget systems have problems with 'lumpy' items such as teaching and learning materials where large lump sum payments need to be made. In Uganda, the MoES had particular problems with obtaining lump sum payments from MFPED for instructional materials. MFPED was only willing to make these releases of budgeted spending 'provided such releases did not disrupt the achievement of macroeconomic benchmarks and the requirements of other competing sectors' (Republic of Uganda 1999b).

As Tables 7.2 and 7.3 showed, the cash budget system has not completely resolved the issue of overspending by line ministries in Malawi and Uganda. As these tables showed, the MTEF and cash budgeting system appear to have been successful in securing aggregate

government financial discipline in Uganda but not in Malawi. While strict rules are placed on line ministry accounts at the central and commercial banks prohibiting over-expenditure these are sometimes ignored. In addition, line ministries have been very creative in finding ways around the cash budgeting system. It should be noted, however, that circumventing the cash budgeting system is often necessary to ensure the smooth running of service delivery (World Bank 2001; World Bank 2002b).

During budget execution in Malawi there is a tendency for many extra-budgetary requests to be made. This is not only a sign of poor budget formulation and planning but also sets up disincentives to budget accurately in the first place. For example, there is an incentive to exclude necessary expenditure in the budget on utility bills, for example, as these are likely to be acceptable extra-budgetary requests. Part of the problem with the MTEF in Malawi has been the failure of the budget execution system to control line ministry spending. Extra-budgetary requests are also common in Uganda although not generally of the same magnitude. Unlike the situation in Malawi, however, the majority of approved extra-budgetary requests in Uganda have to be financed through cuts in other expenditure areas. Given that the PAF protects certain sectors cuts arising from supplementary spending are concentrated and more severe in non-protected sectors.[88]

In Uganda decentralisation has meant that government resources need to be transferred to districts. Many studies and ESIP reviews have highlighted many delays in these flows which have been slow to correct. In addition, budgetary performance with regards to district releases tends to be poorer than other releases (see for example Republic of Uganda 2000a). Delays of a similar nature also occur in Malawi. During budget execution at the district/divisional level reallocation of funds is only allowed to take place with approval from the centre. However, it is commonplace to find that virement of funds takes place without this approval. This implies that budgeted expenditure for education may not always be spent in the sector or spent on the activities laid out in the education budget, further undermining the transparency and effectiveness of the budgetary process.[89] In Uganda, most district releases are in the form of conditional grants which stipulate in detailed terms how the funds are to be used and for what purposes. However, there have been a number of cases where education funds have been diverted to other district activities. For example, in 2000 the Auditor-General's report found that several schools had misused the capitation grant by diverting funds for scholastic materials to administration.

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[87] It should be noted that the cash budget system in Uganda only covers central non-wage recurrent and development expenditures whereas in Malawi it covers all spending.

[88] A similar arrangement to PAF is being introduced in Malawi where items in the government are being designated as Protected Pro-Poor expenditures (PPEs).

[89] Comparing divisional accounts of spending in education with the central government budget shows wide discrepancies (see Kadzamira and Chibwana 1999).

Botswana does not have a cash budget system and when the budget is passed by the National Assembly the MFDP issues a finance warrant permitting expenditure up to the agreed limits in the education budget. The Accountant-General is responsible for producing government accounts and since all payments are made by the Accountant-General a prepayment audit is conducted and expenditure is effectively controlled in this way. Accounting officers in the line ministries also play a key role in expenditure control as they are held responsible for any overspends in their budgets. As in Malawi and Uganda there are mechanisms by which supplementary spending can be countenanced during budget execution. However, there are strict rules regulating the reallocation of existing funds across expenditure heads and any increases in aggregate sectoral spending need to be passed by the National Assembly. These rules are routinely enforced and while audit reports point to occasions when these rules have been broken this is rare.

Botswana also disburses funds to districts, most notably on the development side of the budget. The execution of the development budget in the education sector has been problematic owing to the late release of funds from the centre, lack of capacity among private construction companies and inadequate capacity at the district level. Underspending on the education development budget is common (see section 7.1) and has resulted in delays in achieving targets on classroom and teacher construction set out in the education chapter of many NDPs. For example, in NDP 7 a target for the construction of 2,560 classrooms was set but only 1,496 were completed.

### 7.4 Budget monitoring

Budget execution in Botswana is strongly supported by an effective budget monitoring system. Auditing of the government accounts are done in a timely manner and the Public Accounts Committee (PAC) of the National Assembly scrutinises these accounts annually. The MFDP also has its own set of monitoring tools including the Cash Flow Unit, which produces financial reports on government spending on a monthly basis providing key information on the use of public resources. On the development side of the budget annual project reviews are held which evaluate project implementation and the use of public funds. The Accountant-General also provides the MoE with monthly accounts of spending and any overspending is also reported. These are reconciled with accounts held by the accounting officer in the MoE.

Similar systems of budget monitoring are in place in Malawi and Uganda although these systems do not appear to function as well as in Botswana. In Uganda, auditing of accounts is not done in a timely manner by local governments (World Bank 2002b). In Malawi there are serious delays (of up to three years) in the auditing of the government accounts. These delays are owing partly to the lack of capacity in the Auditor-General's office

but also to the incomplete and often poor quality information provided by line ministries including education (World Bank 2001).

Education is one of the sectors leading the decentralisation process in Uganda and the majority of primary and secondary government education expenditure has been channelled through local government since the mid-1990s. There are major issues, however, concerning the capacity of local governments to properly control, monitor and account for public funds. This is partly why transfers to district are mostly in the form of conditional grants which have their own separate bank accounts and conditions. In primary education conditional grants are used for salary payments, providing a capitation grant for each primary school child and improving and building new primary school infrastructure (school facilities grant).While the use of conditional grants is designed to promote the monitoring and accountability of the use of these funds there have been many instances where funds have been misused (see Uganda case study). Under the cash budgeting system in Uganda districts are required to submit monthly accounts to the MoES, a condition of the following month's release. These are intended to provide the MoES with information that can be used to monitor the use of the conditional education grants. However, largely manual accounting systems at the district level are unable to fulfil these requirements and monthly accounts are often not returned on time or correctly. It is also a huge task for the MoES to examine these reports given limited capacity at the centre. Furthermore, because of the late release of the grants it is difficult to track the use of funds with their intended use under the ESIP, which further complicates matters.

Audits and public expenditure tracking studies in Uganda have been used effectively in the education sector to highlight and improve financial management. This has been a major reform in Uganda, which has identified many of the problems in the flow of funds in the education sector and informed on appropriate measures to address problems of flow of funds. The first public expenditure tracking survey showed that between 1991 and 1995 only 13 per cent of funds intended for schools actually reached the schools (Ablo and Reinikka 1998). To improve monitoring and accountability, fund releases from the centre were publicised in the media and districts and individual schools were required to display the amounts they received and the uses the grants have been put to in public places. This has improved the flow of funds to primary education for districts and individual schools. For example, in 2000 a repeat of earlier tracking studies was undertaken which showed that 90 per cent of the grant amount going to primary schools reached them (Foster and Mijumbi 2002). While more recent tracking surveys have shown that some of the initiatives that reduced leakages have lapsed the reductions in leakages is a major achievement (Republic of Uganda 2001). While tracking surveys have been invaluable they are not currently integrated into regular monitoring and evaluation activities. In addition, while these studies have improved dramatically the flow of

funds, there is still a need to explore how these funds are utilised once they are received by schools to improve the impact of this expenditure on education outcomes.

A condition of monthly releases under the cash budget system in Malawi is monthly expenditure returns from each line ministry. Failure to comply incurs a reduction in the monthly allocation of funds to the particular spending agency. These have improved the timeliness of reporting in the MoESC although the quality of the returns have been questioned and the financial accounting package used to draw up these returns does not have the proper checks to ensure consistent reporting. Furthermore, the report suggests that further improvement is needed to improve the quality of internal auditing (through the Auditor-General's office) and improved reporting to the PAC of Parliament (World Bank 2001). Leakages in the MoESC budget are prevalent with the Auditor-General and PAC exposing massive illegal and inflated contracts (mostly for primary school construction) in the education sector recently.

This chapter has demonstrated that public expenditure management is crucial in translating aggregate resource allocations into education outcomes. While it is not possible to directly compare systems across countries it does appear that the public expenditure management system does account for some of the differences in education outcomes described in this report. For example, the MTEF in Uganda has been relatively more successful in increasing per pupil expenditures to primary education and altering the composition of this spending than in Malawi (see Chapters 4 and 5). The strong management of these increases appears to have led to more improvement in the education system since the introduction of UPE in Uganda than Malawi.

# 8 Conclusions

## 8.1 Cross-country results

The cross-country analysis presented in this report has shown that the link between public education expenditure and education outcomes, as measured by a range of indicators, is at best weak. While a number of factors may explain why a stronger link between public education expenditure and education outcomes is not found across countries, the cross-country research has an important implication. Many factors that are deemed to be important in determining the overall cost of education systems (e.g. public education expenditure as a proportion of GNP, primary education expenditure per pupil and the pupil–teacher ratio) do not seem to explain cross-country differences in education outcomes.

Using country or regional averages of these indicators for policy purposes is, therefore, unlikely to be meaningful. The World Bank (2002a) study exploring policy options

for achieving EFA by 2015 under the Fast Track Initiative suggests that the characteristics of education systems in countries that are classified as successful should be used as target parameters for countries that have not achieved EFA. For example, the average primary pupil–teacher ratio in high completion countries is 40 and this is suggested as the target for countries that have not achieved EFA (World Bank 2002a). The evidence reviewed and presented in this report suggests that the pupil–teacher ratio does not explain cross-country variation in enrolment or completion rates so setting targets for the pupil–teacher ratio based on cross-country averages is unlikely to be relevant. Only detailed analysis at the country level will be able to provide information on the feasibility and likely costs of achieving primary education for all.

In addition to this, the cross-country work suggests that indicators selected to monitor EFA have no close, consistent relationship to levels of expenditure across countries. While this may in part be owing to data problems, it is also the case that these outcome measures do not measure some important aspects of EFA. In particular, the measurement of the quality of primary education relies on proxy measures. For a better understanding of learning outcomes across countries, it would be invaluable to have the capacity to monitor country progress more effectively. Cross-country initiatives such as SACMEQ and the UNESCO MLA project should be expanded to include more countries, in particular countries that are as yet far from achieving the education targets.

### 8.2 The impact of primary school expansion on education systems

It is important to note that primary school expansion has been associated with improved access for poorer socio-economic groups to a greater extent than for wealthier groups. It is also a common finding that education outcomes are strongly correlated with socio-economic background and therefore primary school expansion is likely to result in indicators of education outcomes falling if everything else remains constant.

The report has shown that the impact of primary school expansion on the education system depends, in part, on the rate of increase of primary school enrolments, which in turn depends on levels of enrolment/capacity before enrolments begin to increase. Before fees were abolished in Botswana primary schools nearly had the capacity to adequately enrol the primary-age population. Therefore, primary school expansion progressed steadily in Botswana and expansion did not go together with deteriorating trends in primary education indicators. In contrast Malawi and Uganda experienced very large one-off increases in enrolment. These increases led to the further deterioration of the primary education system from a relatively low base in comparison with Botswana.

The introduction of UPE led to all three countries recording primary GERs well in excess of 100 per cent and has led to the narrowing of the gender gap in primary school

access. While the capacity of primary education systems proved their ability to accommodate the whole of the school-age population many children of primary school age did not attend school. In fact, it has been only recently that Botswana has achieved primary NERs close to 100 per cent. Malawi and Uganda have some way to go with approximately 20 per cent of the official school-age population still out of school. In terms of the MDGs, primary EFA will be achieved only when primary NERs are 99 per cent. The experience of Botswana suggests that high GERs only translate into these levels of net enrolment after some considerable time (15–20 years). While Botswana may have some particular constraints on enrolling all primary-age children the fact that it is a middle-income country suggests that the challenge facing other SSA countries is substantial.

The very large increases in enrolment seen in Malawi and Uganda have given rise to their own set of problems for the education system. The abolition of fees in these countries has led to a UPE 'bulge' cohort being produced. Owing to overage enrolment at the beginning of UPE a substantially larger cohort of students, compared to the official starting-age population, began primary schooling in the year fees were abolished. These students need to be accommodated in the system although it is clear that the cohort behind this bulge cohort will be much smaller.[90] This implies that if ministries of education maintained pupil–teacher and pupil–classroom ratios at the pre-UPE level they would be left with spare capacity once this bulge cohort passes through. Furthermore, teaching students of very different ages in the same class creates a completely different set of issues for teachers to confront. A common policy reaction to these realities has been to introduce measures that use education resources more efficiently and double-shifting of teachers and classrooms has been introduced to some extent in all countries. These policies have the added advantage of reducing the costs of the primary education system.

However, the massive increases in enrolments in Malawi and Uganda have seen a marked deterioration in the primary education system. Internal efficiency appears to have declined and the supply of educational inputs has not been able to keep pace. This is perhaps not surprising given the large increases in enrolment that have occurred in these countries. Another particular problem in both countries associated with primary school expansion has been the inability to recruit the required numbers of qualified primary school teachers. This has not always been due to financial constraints. New primary school teachers have been needed in rural areas and, as the Uganda case study has shown, it has been particularly difficult to recruit teachers into rural areas.

There is only limited information on how learning outcomes have changed as primary school enrolment expanded. However, the limited information suggests that the quality of

primary education has deteriorated as a consequence. Interestingly, one study suggests that differences in learning outcomes across the three countries are only slight and the large differences in internal efficiency and the supply of educational inputs do not appear to have made a significant impact on learning outcomes. This tends to confirm the results from the cross-country findings and implies that internal efficiency indicators are not particularly useful proxies of learning achievement in primary schools. While this finding needs to be treated with caution, given the lack of evidence on learning outcomes, it does suggest that monitoring internal efficiency in the context of achieving the EFA targets is important but not sufficient.

### 8.3 Financing primary school expansion

The case studies have shown that there were major differences in resource availability in the countries prior to UPE reforms being introduced. Botswana had consistently devoted a greater share of the government budget to education than the other three countries. Therefore, while Botswana has had greater public revenues it was also allocating a greater share of these to education before primary school expansion. After primary school expansion, however, education's share of the government budget increased in Malawi and Uganda in part to accommodate the larger number of students in primary schools. This trend was particularly strong in Uganda where education's share of the budget increased to around 20 per cent of the total government budget in the late 1990s, a figure only slightly below that of Botswana. It should be noted that planning and budgeting did not take into account the massive increases in enrolment that took place in Malawi and Uganda. Therefore, the increases in government spending that took place were unplanned and represented massive overspending by ministries of education in the years immediately after the abolition of fees in these countries. In Malawi, public recurrent and development expenditure in the education sector was 60 and 300 per cent over budget in 1994/5, the year primary school fees were abolished.

Primary school expansion was introduced in all of the countries when social expenditure was being prioritised more broadly. It is clear from the country case studies that substantial shifts in budget allocations to education are possible. There is evidence to suggest that this prioritisation resulted in other sectors actually experiencing real cuts in their budgets. However, there is some evidence to suggest that governments have not been able to sustain their initial commitments to the education sector. In both Malawi and Uganda education spending as a share of government spending has begun to decline marginally although it is too early to say whether this trend will continue.

[90] If UPE succeeds it would be expected that the size of future cohorts would correspond to the official starting-age population.

Primary school expansion in Botswana was not achieved through the reallocation of education resources towards primary. While real public spending on primary schooling increased, its rate of increase did not match that of secondary education and the share of secondary education spending increased. In Malawi and Uganda, however, primary school expansion was achieved through changes in the shares of public education expenditure in favour of primary. This was most extreme in Malawi where secondary education and teacher training experienced massive cuts in real terms during the 1990s. In Uganda, while the share of public spending on universities declined substantially, this did not result in real cuts in spending. Therefore increases in public expenditure on education were disproportionately allocated to primary. Current education budget allocations to primary education are much higher in Malawi and Uganda than in Botswana. With larger numbers of primary school completers pressure for expanded secondary schooling opportunities is already being felt in Malawi and Uganda. These countries will need to supplement their education budgets in order to meet this demand and this raises questions of sustainability for current levels of primary education expenditure given the high levels of spending already devoted to education, particularly in Uganda.

The report has also shown that Malawi and Uganda receive a great deal of support from donors. In fact levels of resourcing to education in Malawi and Uganda represented in 2001 approximately 7 per cent of all bilateral aid to education in SSA (Al-Samarrai 2002b). If Malawi and Uganda are guides to the external resources needed to move countries towards EFA, it is very likely that donors will need to increase significantly their aid to education in SSA if other countries in the region are going to achieve the EFA targets by 2015. Given that Malawi and Uganda are still some way off achieving the EFA goals, it is likely that donor support will still be needed for sometime in these countries.

### 8.4 Policy discussion

The case studies, on the whole, confirm the cross-country findings that the link between public spending and primary school access is weak. In the country case studies this is easily explained. During primary school expansion there was a quantity–quality trade-off, which, put another way, suggests that increases in access to primary school were not driven primarily by increases in the number of places offered by the primary school system. What happened, as we have seen in Chapter 3, is that in Malawi and Uganda the education infrastructure (classrooms, teachers, books, etc.) was used far more intensively as enrolments increased. As a result per pupil expenditure in Malawi declined at the same time that access was increasing. The negative relationship between access and per pupil spending apparent in Malawi is partly due to the fact that the education service offered changed greatly over that period and this is not being taken into account. Therefore the cross-country results do not imply that increasing

access to the same type of schools and intensity of use can be achieved through reductions in per pupil spending. The evidence presented in the report therefore shows that, particularly in Malawi and Uganda, public spending has responded to changes in access rather than the other way around.

The case study countries show very weak correlations between spending and the proxy quality indicators. The case studies also show that these indicators are as likely to be determined by policy decisions on, for example, automatic promotion as they are on increased spending. Chapter 3 showed that although there were major differences in these proxy indicators of quality across the case study countries they did not appear to be strongly related to learning outcomes. For these reasons it is perhaps not surprising that levels of public spending do not appear to have a strong impact on these proxies of quality. It is likely that increasing spending is unlikely to improve the proxy quality indicators much and this in turn implies that EFA targets on primary school completion are unlikely to be achieved. A related issue concerns measures of education outcomes. In most cases the measures of education outcomes that are regularly available from country EMIS do not measure accurately the outcomes that are of most interest. While access is an important issue this is usually measured using enrolment rates which do not measure most importantly whether children attend school on a regular basis. There are many instances where enrolment rates are high but attendance is poor. In these cases education outcomes seem good but really students are not attending school regularly enough to learn effectively. Similarly, quality of education outcomes are generally measured using internal efficiency indicators rather than measures of learning outcomes. While these proxy measures of education outcomes should still be related to education expenditure it is important for monitoring and analysis purposes to obtain information on measures that are of more interest. Current EMIS and examination systems in many SSA countries do not have the capacity to provide this information.

Another area that explains the weak link between spending and outcomes is the level and composition of public spending on education at the school level. It is important to determine the amount of the budget that is actually spent at the school level compared to administration at the centre and lower levels of government administration. Often large parts of education budgets are spent on administration of the overall system. While some administration costs are essential, education outcomes are more likely to be determined by the availability of inputs at the school level.

Variations in the composition of public education expenditure at the school level are also likely to lead to differences in education outcomes across schools and countries. Pritchett and Filmer (1999) argue that current allocations of resources across different input categories (e.g. teachers, textbooks, etc.) are inconsistent with maximising education outcomes. They argue that if the composition of spending is altered by, for example, spending additional

resources in a different way, this spending could lead to improved outcomes. Getting to grips with this issue from the perspective of national budgets and aggregate spending information is very difficult. Micro based studies are much better suited to inform on the best mix of inputs at the school level. However, the micro based literature has not, up to now, shown consistent impacts of different inputs on education outcomes. This is partly due to the very different characteristics of national education systems and the environments in which they work in. Understanding why some schools in a particular country have better education outcomes than others is crucial if aggregate education outcomes are to be improved. To improve education outcomes effectively further research is needed not only in exploring input differences across schools but also on how schools and administrators manage these resources. It is surprising how few recent micro based studies of the determinants of education outcomes are available in the countries selected for this report and for developing countries more generally. This is even more surprising given the priority and resources devoted to education by country governments and the donor community.

Combining information on household and government expenditure on primary education shows that total per pupil expenditure declined slightly after fee abolition in Malawi and Uganda. Unfortunately it was not possible to collect similar information in Botswana. The analysis on total per pupil expenditure implies that in Malawi and Uganda governments were unable to cover the reduction in fees through increases in their own per pupil spending. It also suggests that the increased access came about primarily through a demand-side response to the abolition of fees and a reassertion by government of the importance of primary education rather than through an increase in the available primary school places. In fact, Chapters 3 and 4 of the report showed that in Malawi and Uganda the supply side was slow to respond with more teachers and classrooms. A large body of evidence shows that household characteristics and particularly levels of poverty are strongly associated with primary education participation, both in terms of attendance and performance (Colclough *et al*. 2003). These conclusions suggest that demand-side factors, as opposed to public expenditure and supply-side factors, are a major determinant of education outcomes. Information on the costs facing households in sending their children to school should be routinely collected to analyse cost constraints. In addition, policies to improve the education participation of the poor that move away from improving access need to have equal weight with supply-side policies if the EFA targets are to be achieved.

Public expenditure management obviously does not fall completely within the remit of government agencies responsible for primary education. However, the report has shown briefly the importance of well-functioning public expenditure management systems to the effectiveness of public spending to lead to better outcomes. The report has shown that in Malawi and Uganda differences in budgeted and actual expenditure on education over the

1990s have been large. Where there are large variations in budget outturns the budget system is not allocating resources effectively. This is in some cases due to the lack of adequate resources to finance the budget. In education, when available resources fall short of planned expenditure it is easier to cut-back on non-salary provision of items such as textbooks than on teachers' salaries. Furthermore, cash budgeting systems while improving overall expenditure control may have a number of negative impacts on budget execution in education. As the previous chapter showed when budgets are released irregularly over the year it makes some spending very difficult and is particularly true for non-salary items such as textbooks. Improving budget predictability is important in strengthening the link between plans and actual spending and is a necessary part of improving the effectiveness of public spending on education.

The report has also highlighted differences between what is reported as being spent on education at the national level and what is actually being spent in schools. This may occur for two reasons. Firstly, budgeted resources intended for education may be diverted to other sectors of the government budget or leakage from the system may occur. Secondly, budgeted resources intended for specific items may be spent in other areas of the education budget. For example, the budget for instructional materials may be diverted to pay transport allowances for local education officers. These discrepancies are important in explaining the weak link between resources and outcomes. Obviously, if resources are being reported as being spent on education but are actually being spent elsewhere then these resources cannot impact on education outcomes. In addition to this the same information is being used by education policy makers and planners to budget for education provision. If this information is wrong then resource allocation decisions will be made with incorrect information and will lead to inefficiency. Identifying the magnitude of leakage and misspending are important aspects of the public expenditure management system that can be adequately addressed through the audit institutions of government. However, where these institutions are weak public expenditure tracking surveys are a useful way of obtaining indications of where the weaknesses in the system are greatest and developing policies to reduce them.

Sector prioritisation has improved in all three countries particularly with respect to education. In terms of intrasectoral allocations the MTEF approach has been seen to be effective in Uganda and Botswana in doing this but perhaps less so in Malawi. Budget execution and auditing/monitoring remain relatively weak in Malawi but Uganda has made impressive gains in the education sector, most notably through ESIP and successful biannual reviews of the education sector. Within this context, public expenditure tracking systems have been extremely useful in highlighting challenges to the effective flow of funds and have led to some innovative solutions. The strength of the Ugandan public expenditure management system, particularly in the context of the education sector, helps explain why, after the

abolition of fees, real levels of per pupil spending on primary education increased dramatically and education indicators have shown improvement. This stands in contrast to Malawi where per pupil allocations to primary education and education indicators have stagnated (see Chapters 3 and 4). While budget execution in Botswana is good by all accounts there is a persistent problem on the development side of the budget in providing primary school infrastructure. This is in part due to the lack of capacity at the district level but also to the interaction between the public and private sectors

The analysis in this report suggests that the link between resources and education indicators are weak and that the achievement of the MDGs and EFA targets will require more than just increases in expenditure on primary education. This does not imply resources are unnecessary, merely that they are unlikely to be sufficient for achieving the education goals. The composition of resources and institutions that govern the use of these resources plays a central role in translating resources into better schooling outcomes. The report has demonstrated that improving the public expenditure management system is important in strengthening the link between public spending and education outcomes. Furthermore, the report has shown that recent successes in improving access to primary education have predominantly been a demand-side phenomenon and improvements in education outcomes will only be sustainable if demand-side constraints to primary schooling are tackled. A stronger focus on these aspects of education systems will be required if the Millennium Development Goals in education are to be achieved.

## Appendix

Table A.1 OLS results for the primary gross and net enrolment ratios

| | Primary GER | | | Primary NER | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Public primary education expenditure (%GNP) | -0.021 | | | -0.014 | | |
| | *0.037* | | | *0.035* | | |
| Primary expenditure per pupil ($PPP) | | -0.120 *** | | | -0.112 ** | |
| | | *0.045* | | | *0.049* | |
| Primary pupil teacher ratio | | | 0.019 | | | -0.057 |
| | | | *0.077* | | | *0.075* |
| Gini coefficient | 0.003 | 0.002 | 0.002 | 0.001 | 0.001 | 0.001 |
| | *0.002* | *0.002* | *0.002* | *0.002* | *0.002* | *0.002* |
| Francophone Africa | -0.261 *** | -0.253 *** | -0.256 ** | -0.342 *** | -0.318 *** | -0.326 *** |
| | *0.093* | *0.081* | *0.104* | *0.108* | *0.097* | *0.112* |
| SSA | -0.040 | -0.060 | -0.053 | -0.112 | -0.115 | -0.095 |
| | *0.065* | *0.060* | *0.064* | *0.085* | *0.080* | *0.081* |
| GNP per capita ($PPP) | 0.803 *** | 0.795 *** | 0.808 *** | 1.182 *** | 1.104 *** | 1.202 *** |
| | *0.269* | *0.228* | *0.267* | *0.276* | *0.244* | *0.265* |
| GNP per capita ($PPP) squared | -0.045 *** | -0.036 ** | -0.045 *** | -0.066 *** | -0.053 *** | -0.068 *** |
| | *0.016* | *0.014* | *0.015* | *0.016* | *0.015* | *0.015* |
| Urban population (% total pop.) | 0.072 | 0.046 | 0.077 | 0.100 | 0.071 | 0.101 |
| | *0.062* | *0.049* | *0.065* | *0.071* | *0.061* | *0.072* |
| East Asia | 0.092 | 0.053 | 0.089 | 0.041 | 0.025 | 0.057 |
| | *0.068* | *0.064* | *0.072* | *0.056* | *0.055* | *0.055* |
| South Asia | 0.090 | 0.029 | 0.084 | 0.002 | -0.043 | 0.031 |
| | *0.104* | *0.097* | *0.109* | *0.081* | *0.076* | *0.087* |
| Arab States | 0.131 | 0.132 | 0.120 | 0.032 | 0.039 | 0.032 |
| | *0.110* | *0.098* | *0.109* | *0.116* | *0.105* | *0.111* |
| Latin America and the Caribbean | -0.018 | -0.053 | -0.023 | -0.134 ** | -0.140 ** | -0.123 ** |
| | *0.059* | *0.063* | *0.058* | *0.056* | *0.062* | *0.056* |
| Muslim proportion of the population | -0.205 * | -0.172 * | -0.217 * | -0.079 | -0.019 | -0.083 |
| | *0.120* | *0.098* | *0.124* | *0.127* | *0.107* | *0.129* |
| Constant | -3.687 *** | -3.432 *** | -3.654 *** | -5.323 *** | -4.895 *** | -5.130 *** |
| | *1.126* | *0.991* | *1.227* | *1.133* | *1.064* | *1.175* |
| Number of observations | 90 | 90 | 90 | 79 | 79 | 79 |
| R-Squared | 0.64 | 0.69 | 0.64 | 0.78 | 0.80 | 0.78 |
| Ramsey RESET Test | 10.34 *** | 14.57 *** | 10.09 *** | 9.50 *** | 12.35 *** | 9.58 *** |
| Normality Test | 7.80 ** | 6.00 ** | 7.49 ** | 3.82 | 0.46 | 4.55 |

Notes
1. Robust standard errors, adjusted for heteroscedasticity, are used in all cases.
2. Standard errors reported in italics
3. All continuous variables, apart from the gini coefficient, are logged.
4. Test of normality based on tests of skewness and kurtosis.
5. *** denotes statistical significance at the 1% level, ** at the 5% level, * at the 10% level using two-tailed tests.

Table A.2 OLS results for primary survival and completion rates

| | Primary Survival Rate | | | Primary Completion Rate | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Public primary education expenditure (%GNP) | -0.003 | | | -0.033 | | |
| | *0.042* | | | *0.068* | | |
| Primary expenditure per pupil ($PPP) | | 0.075 * | | | -0.069 | |
| | | *0.044* | | | *0.072* | |
| Primary pupil teacher ratio | | | -0.094 | | | -0.013 |
| | | | *0.098* | | | *0.208* |
| Gini coefficient | -0.002 | -0.002 | -0.002 | -0.016 ** | -0.017 ** | -0.016 * |
| | *0.002* | *0.003* | *0.002* | *0.007* | *0.007* | *0.009* |
| Francophone Africa | -0.068 | -0.071 | -0.051 | -0.765 *** | -0.749 *** | -0.740 *** |
| | *0.092* | *0.090* | *0.097* | *0.142* | *0.132* | *0.147* |
| SSA | 0.033 | 0.045 | 0.067 | -0.149 | -0.156 | -0.155 |
| | *0.065* | *0.063* | *0.069* | *0.124* | *0.107* | *0.165* |
| GNP per capita ($PPP) | 0.475 | 0.538 | 0.501 | -1.816 | -2.295 | -1.805 |
| | *0.457* | *0.460* | *0.459* | *1.863* | *1.947* | *1.911* |
| GNP per capita ($PPP) squared | -0.022 | -0.031 | -0.024 | 0.144 | 0.183 | 0.143 |
| | *0.026* | *0.027* | *0.026* | *0.131* | *0.136* | *0.136* |
| Urban population (% total pop.) | 0.166 ** | 0.181 *** | 0.150 ** | -0.023 | -0.024 | -0.019 |
| | *0.069* | *0.058* | *0.067* | *0.094* | *0.090* | *0.098* |
| East Asia | -0.002 | 0.025 | 0.020 | -0.364 ** | -0.375 *** | -0.356 * |
| | *0.054* | *0.050* | *0.056* | *0.138* | *0.124* | *0.206* |
| South Asia | -0.244 ** | -0.204 | -0.205 | -0.489 *** | -0.495 *** | -0.474 * |
| | *0.121* | *0.128* | *0.132* | *0.144* | *0.133* | *0.256* |
| Arab States | -0.162 * | -0.160 * | -0.151 * | -0.410 *** | -0.419 *** | -0.414 *** |
| | *0.089* | *0.081* | *0.084* | *0.123* | *0.111* | *0.118* |
| Latin America and the Caribbean | -0.177 ** | -0.149 * | -0.143 * | -0.022 | -0.078 | -0.045 |
| | *0.075* | *0.080* | *0.074* | *0.170* | *0.187* | *0.190* |
| Muslim proportion of the population | 0.273 ** | 0.234 ** | 0.290 ** | -0.013 | 0.012 | -0.033 |
| | *0.130* | *0.112* | *0.128* | *0.162* | *0.146* | *0.174* |
| Constant | -2.447 | -2.743 | -2.219 | 5.939 | 7.870 | 6.068 |
| | *2.016* | *2.011* | *1.999* | *6.721* | *7.054* | *6.622* |
| Number of observations | 69 | 69 | 69 | 33 | 33 | 33 |
| R-Squared | 0.65 | 0.67 | 0.65 | 0.87 | 0.89 | 0.87 |
| Ramsey RESET Test | 3.31 ** | 3.04 ** | 3.55 ** | 1.71 | 2.02 | 1.90 |
| Normality Test | 1.45 | 1.69 | 2.16 | 1.15 | 1.63 | 0.76 |

Notes
1. Robust standard errors, adjusted for heteroscedasticity, are used in all cases.
2. Standard errors reported in italics
3. All continuous variables, apart from the gini coefficient, are logged.
4. Test of normality based on tests of skewness and kurtosis.
5. *** denotes statistical significance at the 1% level, ** at the 5% level, * at the 10% level using two-tailed tests.

Table A.3 Primary gross and net enrolment rates in Malawi and Uganda from Ministry of Education statistics

| | Malawi | | | | | | Uganda | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gross enrolment rate | | | Net enromlent rate | | | Gross enrolment rate | | | Net enromlent rate | | |
| | | | | male | female | total | | | | male | female | total |
| 1990 | - | - | - | - | - | - | 68 | 76 | 61 | 58 | 48 | 53 |
| 1991 | 81 | 86 | 75 | 50 | 52 | 51 | 77 | 85 | 69 | 57 | 51 | 54 |
| 1992 | 86 | 94 | 79 | | | 60 | 69 | 77 | 60 | 56 | 48 | 52 |
| 1993 | 90 | 95 | 85 | 57 | 60 | 56 | 58 | 64 | 52 | 49 | 42 | 45 |
| 1994 | 93 | 95 | 91 | 68 | 74 | 71 | 67 | 72 | 61 | 55 | 51 | 53 |
| 1995 | 134 | 141 | 127 | 96 | 96 | 96 | 76 | 82 | 69 | 57 | 51 | 54 |
| 1996 | 123 | 130 | 115 | - | - | - | 80 | 86 | 74 | - | - | - |
| 1997 | 139 | 146 | 132 | - | - | - | 128 | 136 | 119 | 92 | 83 | 87 |
| 1998 | 133 | 137 | 128 | - | - | - | 135 | 142 | 128 | 100 | 91 | 95 |
| 1999 | 134 | 139 | 128 | 113 | 108 | 111 | 138 | 144 | 132 | - | - | - |
| 2000 | 136 | 142 | 131 | 120 | 114 | 117 | 128 | 132 | 124 | 113 | 109 | 111 |
| 2001 | 115 | 118 | 111 | - | - | - | 145 | 148 | 142 | 133 | 129 | 131 |

Note: Before 1997 the Malawian primary school year began in October and ended in July. To ensure comparability with the Uganda the dates before 1997 for Malawi refer to the year in which the bulk of the primary school year fell. For example, the 1994/95 school year in Malawi is marked on the figure as 1995.
Source: Malawi – MoESC education statistics (various years), Uganda – MoES statistical abstracts (various years)

Table A.4 Primary school completion rates and Standard 5 survival rates using the reconstructed cohort method (%)

| | Botswana | | | | | | Malawi | | | | | | Uganda | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Standard V survival rate | | | Standard VII survival rate | | | Standard V survival rate | | | Standard VIII survival rate | | | Standard V survival rate | | | Standard VII survival rate | | |
| | male | female | total | male | female | total | male | female | total | male | female | total | male | female | total | male | female | total |
| 1978 | 80 | 88 | 85 | 67 | 82 | 74 | | | | | | | | | | | | |
| 1979 | 84 | 93 | 89 | 70 | 86 | 78 | | | | | | | | | | | | |
| 1980 | 92 | 100 | 96 | 80 | 95 | 87 | | | | | | | | | | | | |
| 1981 | 80 | 84 | 82 | 69 | 76 | 71 | | | | | | | | | | | | |
| 1982 | 87 | 97 | 92 | 84 | 97 | 88 | | | | | | | | | | | | |
| 1983 | 91 | 99 | 95 | 78 | 91 | 82 | | | | | | | | | | | | |
| 1984 | 84 | 92 | 88 | 81 | 92 | 84 | | | | | | | | | | | | |
| 1985 | 89 | 93 | 91 | 85 | 92 | 87 | | | | | | | | | | | | |
| 1986 | 88 | 91 | 90 | 88 | 93 | 89 | | | | | | | | | | | | |
| 1987 | 91 | 97 | 94 | 88 | 101 | 92 | | | | | | | | | | | | |
| 1988 | 86 | 93 | 90 | 83 | 99 | 90 | | | | | | | | | | | | |
| 1989 | 94 | 96 | 95 | 88 | 98 | 91 | | | | | | | | | | | | |
| 1990 | 80 | 92 | 86 | 71 | 91 | 80 | | | | | | | | | | | | |
| 1991 | 86 | 94 | 90 | 78 | 91 | 83 | 44 | 41 | 43 | 39 | 34 | 37 | 58 | 52 | 55 | 42 | 32 | 36 |
| 1992 | 89 | 95 | 92 | 82 | 94 | 88 | 63 | 59 | 61 | 34 | 32 | 33 | - | - | - | - | - | - |
| 1993 | 87 | 91 | 89 | 80 | 86 | 83 | 34 | 43 | 38 | 29 | 24 | 27 | 28 | 34 | 30 | 13 | 16 | 14 |
| 1994 | 86 | 92 | 89 | 79 | 88 | 84 | 36 | 33 | 34 | 19 | 14 | 16 | - | - | - | - | - | - |
| 1995 | 85 | 88 | 87 | 78 | 85 | 81 | 165 | 106 | 133 | 358 | 184 | 264 | 61 | 50 | 56 | 42 | 28 | 34 |
| 1996 | 87 | 93 | 90 | 80 | 91 | 86 | 34 | 31 | 32 | 25 | 18 | 21 | 88 | 90 | 89 | 66 | 62 | 62 |
| 1997 | 87 | 88 | 88 | 85 | 86 | 86 | 33 | 33 | 33 | 21 | 18 | 20 | 302 | 158 | 228 | 281 | 114 | 185 |
| 1998 | 83 | 89 | 86 | 77 | 84 | 80 | 27 | 29 | 28 | 15 | 13 | 14 | 52 | 83 | 63 | 48 | 72 | 57 |
| 1999 | 84 | 91 | 87 | 78 | 87 | 82 | 48 | 36 | 42 | 35 | 24 | 29 | - | - | - | - | - | - |
| 2000 | - | - | - | - | - | - | 52 | 40 | 46 | 27 | 20 | 24 | 29 | 28 | 28 | 14 | 13 | 14 |
| 2001 | - | - | - | - | - | - | - | - | - | - | - | - | 71 | 72 | 72 | 53 | 51 | 51 |

Note: Before 1997 the Malawian primary school year began in October and ended in July. To ensure comparability with the Uganda the dates before 1997 for Malawi refer to the year in which the bulk of the primary school year fell. For example, the 1994/5 school year in Malawi is marked on the table as 1995.
Source: Author's calculations from government statistics: Botswana – MoE Education Statistics reports (various years); Malawi – MoESC education statistics (various years); Uganda – MoES statistical abstracts (various years)

Table A.5 Primary school total repetition and drop-out rates (%)

| | Botswana | | | | | | Malawi | | | | | | Uganda | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Repetition rate | | | Drop-out rate | | | Repetition rate | | | Drop-out rate | | | Repetition rate | | | Drop-out rate | | |
| | male | female | total | male | female | total | male | female | total | male | female | total | male | female | total | male | female | total |
| 1977 | 2.1 | 2.39 | 2.26 | 4.29 | 1.24 | 2.62 | | | | | | | | | | | | |
| 1978 | 1.87 | 2.10 | 2.00 | 6.12 | 3.27 | 4.56 | | | | | | | | | | | | |
| 1979 | 2.55 | 2.70 | 2.63 | 5.17 | 2.25 | 3.57 | | | | | | | | | | | | |
| 1980 | 2.72 | 3.11 | 2.93 | 3.25 | 0.80 | 1.92 | | | | | | | | | | | | |
| 1981 | 4.54 | 4.70 | 4.63 | 5.47 | 4.43 | 4.91 | | | | | | | | | | | | |
| 1982 | 5.51 | 5.68 | 5.60 | 2.71 | 0.59 | 1.58 | | | | | | | | | | | | |
| 1983 | 6.37 | 6.57 | 6.47 | 3.30 | 1.28 | 2.23 | | | | | | | | | | | | |
| 1984 | 5.83 | 5.93 | 5.88 | 3.20 | 1.47 | 2.29 | | | | | | | | | | | | |
| 1985 | 5.71 | 5.66 | 5.69 | 2.44 | 1.32 | 1.86 | | | | | | | | | | | | |
| 1986 | 4.62 | 4.83 | 4.73 | 2.25 | 1.31 | 1.76 | | | | | | | | | | | | |
| 1987 | 5.27 | 5.35 | 5.31 | 2.04 | -0.01 | 0.99 | | | | | | | | | | | | |
| 1988 | 4.99 | 4.91 | 4.95 | 3.07 | 0.32 | 1.67 | | | | | | | | | | | | |
| 1989 | 4.94 | 4.93 | 4.94 | 1.99 | 0.47 | 1.21 | | | | | | | | | | | | |
| 1990 | 5.09 | 4.68 | 4.88 | 5.16 | 1.60 | 3.35 | | | | | | | | | | | | |
| 1991 | 4.77 | 4.35 | 4.55 | 3.80 | 1.56 | 2.66 | 20.0 | 20.4 | 20.2 | 11.8 | 13.9 | 12.8 | 16.9 | 17.3 | 17.1 | 9.5 | 11.7 | 10.5 |
| 1992 | 3.65 | 3.00 | 3.32 | 2.98 | 1.06 | 2.00 | 19.5 | 18.2 | 18.9 | 8.3 | 10.8 | 9.4 | - | - | - | - | - | - |
| 1993 | 3.01 | 2.23 | 2.61 | 3.44 | 2.47 | 2.95 | 19.4 | 20.3 | 19.8 | 16.2 | 15.6 | 15.9 | 16.9 | 17.1 | 17.0 | 23.3 | 20.2 | 21.9 |
| 1994 | 3.15 | 2.26 | 2.70 | 3.67 | 2.00 | 2.83 | 17.4 | 17.5 | 17.5 | 17.5 | 19.9 | 18.7 | - | - | - | - | - | - |
| 1995 | 4.11 | 2.85 | 3.48 | 3.89 | 2.65 | 3.27 | 26.9 | 27.3 | 27.1 | -15.7 | -5.5 | -10.8 | 18.1 | 17.7 | 17.9 | 8.5 | 13.0 | 10.6 |
| 1996 | 3.90 | 2.68 | 3.29 | 3.40 | 1.51 | 2.46 | 14.9 | 15.5 | 15.2 | 19.0 | 21.9 | 20.3 | 14.8 | 14.8 | 14.8 | 3.3 | 3.0 | 3.2 |
| 1997 | 3.64 | 2.36 | 3.00 | 2.54 | 2.46 | 2.50 | 15.0 | 16.0 | 15.5 | 19.1 | 19.7 | 19.4 | 9.5 | 10.1 | 9.8 | -26.1 | -7.7 | -17.5 |
| 1998 | 3.69 | 2.50 | 3.10 | 4.19 | 2.89 | 3.55 | 13.2 | 13.8 | 13.5 | 22.3 | 22.2 | 22.3 | 7.5 | 6.3 | 7.0 | 16.1 | 9.9 | 13.3 |
| 1999 | 3.88 | 2.73 | 3.31 | 3.93 | 2.29 | 3.12 | 14.6 | 14.3 | 14.4 | 13.4 | 17.6 | 15.4 | - | - | - | - | - | - |
| 2000 | - | - | - | - | - | - | 15.1 | 14.8 | 15.0 | 13.8 | 16.4 | 15.1 | 12.0 | 11.7 | 11.9 | 24.4 | 25.3 | 24.9 |
| 2001 | - | - | - | - | - | - | - | - | - | - | - | - | 11.3 | 10.9 | 11.1 | 7.9 | 7.8 | 7.9 |

Note: Repetition rates are calculated by dividing the total number of repeaters in primary school by total enrolment. The drop-out rate is defined as the number of drop-outs in the current year as a percentage of total enrolment in the previous year. Unfortunately, it is not possible to calculate drop-out rates for the last standard of primary in this way as the data is not generally available. Therefore the average primary school drop-out rates reported in the table exclude drop-out in the last standard of primary.

Source: Author's calculations from government statistics: Botswana – MoE Education Statistics reports (various years); Malawi – MoESC education statistics (various years); Uganda – MoES statistical abstracts (various years)

Table A.6 Education inputs

| | Botswana | | | Malawi | | | | | Uganda | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Teachers | | Pupil classroom ratio | Teachers | | Pupil classroom ratio | Pupil textbook ratio | | Teachers | | Pupil classroom ratio | Pupil textbook ratio | | |
| | Pupil teacher ratio | Qualified/trained | | Pupil teacher ratio | Qualified/trained | | English | Maths | Pupil teacher ratio | Qualified/trained | | English | Maths | Science |
| 1977 | 30.6 | 58.6 | 53.5 | | | | | | | | | | | |
| 1978 | 31.3 | 61.3 | 53.9 | | | | | | | | | | | |
| 1979 | 32.2 | 63.6 | 51.3 | | | | | | | | | | | |
| 1980 | 33.0 | 63.6 | 50.0 | | | | | | | | | | | |
| 1981 | 31.6 | 64.1 | 49.1 | | | | | | | | | | | |
| 1982 | 32.6 | | 46.5 | | | | | | | | | | | |
| 1983 | 31.2 | 70.1 | 44.3 | | | | | | | | | | | |
| 1984 | 30.9 | 71.0 | 45.7 | | | | | | | | | | | |
| 1985 | 32.0 | 74.3 | 46.3 | | | | | | | | | | | |
| 1986 | 32.2 | 75.8 | 47.8 | | | | | | | | | | | |
| 1987 | 32.3 | 72.1 | 47.6 | | | | | | | | | | | |
| 1988 | 32.3 | 81.8 | 48.1 | | | | | | | | | | | |
| 1989 | 32.3 | 84.6 | 47.7 | | | | | | | | | | | |
| 1990 | 31.7 | 84.3 | 47.6 | | | | | | 27.9 | 88.5 | | | | |
| 1991 | 30.4 | 86.8 | 48.4 | 78.1 | 68.1 | 83.3 | 2.0 | 2.8 | 32.9 | 88.9 | | | | |
| 1992 | 29.0 | 84.9 | 47.5 | 71.4 | 86.0 | 100.3 | 4.4 | 3.7 | 27.7 | 88.4 | | | | |
| 1993 | 27.3 | 83.2 | 46.5 | 68.2 | 87.0 | 102.8 | 2.9 | 2.9 | 23.7 | 65.4 | 37.0 | | | |
| 1994 | 26.4 | 82.7 | 45.8 | 67.8 | 83.9 | 95.2 | 2.6 | 2.4 | 27.4 | | 45.4 | | | |
| 1995 | 29.1 | 85.4 | 43.7 | 62.5 | 58.0 | 134.5 | 4.7 | 4.2 | 34.6 | 72.6 | 35.2 | 2.7 | 3.0 | 2.9 |
| 1996 | 24.9 | 85.4 | 42.7 | 58.8 | 66.9 | 134.2 | 3.0 | 2.9 | 37.6 | 73.3 | 44.3 | 4.7 | 5.4 | 9.1 |
| 1997 | 28.1 | 85.2 | 40.9 | 61.3 | 51.4 | 120.8 | 2.0 | 2.1 | 59.4 | 70.1 | 71.2 | 3.8 | 4.5 | 7.0 |
| 1998 | 27.7 | 84.1 | 39.8 | 67.4 | 50.4 | 153.9 | 4.7 | 1.3 | 53.2 | 81.6 | 75.2 | 3.1 | 3.9 | 3.8 |
| 1999 | 27.1 | 90.2 | 33.6 | 63.2 | 53.5 | 75.9 | 1.4 | 1.4 | 61.4 | | 77.0 | - | - | - |
| 2000 | | | | 63.0 | 51.3 | 95.0 | 1.8 | 1.8 | 65.1 | 78.6 | 67.7 | 2.6 | 3.2 | 3.1 |
| 2001 | | | | | | | | | 58.1 | 82.3 | 78.2 | 2.6 | 3.1 | 3.1 |

Source: Botswana – MoE Education Statistics reports (various years); Malawi – MoESC education statistics (various years); Uganda – MoES statistical abstracts (various years)

# Table A.7 Public expenditure indicators in Botswana, Malawi and Uganda

| | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **BOTSWANA** | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Total** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Public expenditure (% GDP) | 35.1 | 41.8 | 40.2 | 40.0 | 39.0 | 46.1 | 39.9 | 44.2 | 39.3 | 41.7 | 50.7 | 51.1 | 38.2 | 45.0 | 44.6 | 45.0 | 49.1 | 38.7 | 42.4 | 42.9 | 41.7 | 45.0 | 53.0 | - | - |
| Public education expenditure (% GDP) | 7.0 | 7.8 | 7.8 | 7.5 | 7.3 | 7.3 | 6.8 | 6.6 | 6.2 | 6.9 | 8.2 | 8.4 | 6.5 | 7.4 | 7.5 | 7.8 | 8.9 | 8.5 | 9.5 | 10.7 | 10.1 | 11.3 | 11.4 | - | - |
| Public education expenditure (% total public expenditure) | 20.0 | 18.6 | 19.4 | 18.8 | 18.6 | 15.8 | 16.9 | 14.9 | 15.8 | 16.6 | 16.2 | 16.5 | 17.1 | 16.5 | 16.8 | 17.3 | 18.2 | 21.9 | 22.5 | 24.9 | 24.1 | 25.1 | 21.5 | - | - |
| Public primary education expenditure (% total education expenditure) | - | 56.3 | 49.3 | 48.1 | 49.3 | 53.2 | 50.2 | 40.0 | 45.0 | 37.7 | 38.7 | 43.3 | 33.6 | 37.2 | 39.0 | 39.1 | 36.2 | 32.7 | 32.6 | 31.2 | 31.0 | 32.8 | 34.1 | - | - |
| **Recurrent** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Public expenditure (% GDP) | 22.4 | 22.6 | 22.9 | 24.2 | 25.1 | 28.3 | 27.7 | 29.1 | 25.8 | 24.9 | 29.2 | 28.3 | 23.9 | 28.3 | 30.1 | 30.6 | 32.1 | 26.3 | 28.7 | 27.1 | 26.6 | 30.4 | 35.0 | - | - |
| Public education expenditure (% GDP) | 4.6 | 5.7 | 5.0 | 4.9 | 5.0 | 5.4 | 5.1 | 5.2 | 4.9 | 4.7 | 5.5 | 5.4 | 4.1 | 4.9 | 5.3 | 6.0 | 6.8 | 6.2 | 6.8 | 7.2 | 6.9 | 8.0 | 8.3 | - | - |
| Public education expenditure (% total public expenditure) | 21.8 | 23.6 | 23.1 | 22.6 | 21.8 | 21.4 | 21.7 | 20.9 | 20.9 | 19.8 | 20.5 | 21.1 | 20.8 | 22.7 | 22.5 | 23.1 | 22.9 | 23.2 | 24.3 | 25.6 | 25.4 | 26.1 | 24.3 | - | - |
| Public primary education expenditure (% total education expenditure) | - | 65.7 | 60.3 | 57.3 | 56.5 | 56.7 | 54.8 | 46.0 | 50.3 | 50.8 | 52.3 | 60.6 | 50.4 | 50.4 | 46.6 | 46.6 | 46.1 | 43.6 | 42.8 | 41.2 | 40.6 | 40.8 | 41.2 | - | - |
| **Development** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Public expenditure (% GDP) | 12.7 | 19.2 | 17.3 | 15.7 | 13.8 | 17.8 | 12.2 | 15.1 | 13.5 | 16.7 | 21.6 | 22.8 | 14.3 | 16.7 | 14.5 | 14.4 | 17.1 | 12.5 | 13.6 | 15.8 | 15.2 | 14.6 | 18.0 | - | - |
| Public education expenditure (% GDP) | 2.4 | 2.1 | 2.8 | 2.6 | 2.3 | 1.9 | 1.7 | 1.5 | 1.3 | 2.2 | 2.7 | 3.0 | 2.4 | 2.5 | 2.1 | 1.8 | 2.2 | 2.2 | 2.7 | 3.5 | 3.2 | 3.3 | 3.1 | - | - |
| Public education expenditure (% total public expenditure) | 19.3 | 11.0 | 16.4 | 16.8 | 16.4 | 10.7 | 13.6 | 9.6 | 9.9 | 13.4 | 12.7 | 13.2 | 17.1 | 15.1 | 14.7 | 12.4 | 12.7 | 18.0 | 19.7 | 22.3 | 20.8 | 22.7 | 17.1 | - | - |
| Public primary education expenditure (% total education expenditure) | - | 31.1 | 30.2 | 30.0 | 33.5 | 43.2 | 36.1 | 18.9 | 25.7 | 10.2 | 11.5 | 12.0 | 5.4 | 11.4 | 19.9 | 14.0 | 5.0 | 2.2 | 6.8 | 10.7 | 10.1 | 13.5 | 15.0 | - | - |
| **MALAWI** | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Total** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Public expenditure (% GDP) | - | - | - | - | - | - | - | - | - | - | - | - | - | 29.9 | 27.2 | 31.5 | 32.3 | 44.2 | 31.8 | 23.6 | 22.5 | 24.3 | 25.2 | 25.7 | - |
| Public education expenditure (% GDP) | - | - | - | - | - | - | - | - | - | - | - | - | - | 3.3 | 2.7 | 3.7 | 3.4 | 5.7 | 5.5 | 3.8 | 4.1 | 3.6 | 3.7 | 4.0 | - |
| Public education expenditure (% total public expenditure) | - | - | - | - | - | - | - | - | - | - | - | - | - | 11.0 | 9.8 | 11.9 | 10.6 | 13.0 | 17.4 | 16.2 | 18.4 | 14.9 | 14.6 | 15.5 | - |
| Public primary education expenditure (% total education expenditure) | - | - | - | - | - | - | - | - | - | - | - | - | - | 24.6 | 37.2 | 43.2 | 41.5 | 47.7 | 53.2 | 58.9 | 58.5 | 0.0 | - | - | - |
| **Recurrent** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Public expenditure (% GDP) | - | - | - | - | - | - | - | - | - | - | - | - | - | 23.7 | 22.0 | 25.0 | 21.2 | 36.5 | 25.2 | 18.9 | 19.3 | 16.4 | 15.2 | 15.4 | - |
| Public education expenditure (% GDP) | - | - | - | - | - | - | - | - | - | - | - | - | - | 2.5 | 1.7 | 2.6 | 2.7 | 3.6 | 4.0 | 3.4 | 3.5 | 2.5 | 2.8 | 2.8 | - |
| Public education expenditure (% total public expenditure) | - | - | - | - | - | - | - | - | - | - | - | - | - | 10.6 | 7.7 | 10.4 | 12.8 | 9.8 | 16.0 | 18.2 | 18.3 | 15.1 | 18.3 | 17.9 | - |
| Public primary education expenditure (% total education expenditure) | - | - | - | - | - | - | - | - | - | - | - | - | - | 42.4 | 43.7 | 51.8 | 48.5 | 50.7 | 56.8 | 59.9 | 65.3 | - | - | - | - |
| **Development** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Public expenditure (% GDP) | - | - | - | - | - | - | - | - | - | - | - | - | - | 6.1 | 5.1 | 6.5 | 11.1 | 7.7 | 6.6 | 4.7 | 3.2 | 7.9 | 10.1 | 10.3 | - |
| Public education expenditure (% GDP) | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.8 | 1.0 | 1.1 | 0.7 | 2.1 | 1.5 | 0.4 | 0.6 | 1.1 | 0.9 | 1.2 | - |
| Public education expenditure (% total public expenditure) | - | - | - | - | - | - | - | - | - | - | - | - | - | 12.9 | 18.6 | 17.5 | 6.6 | 27.9 | 22.6 | 8.4 | 18.6 | 14.5 | 9.1 | 11.9 | - |
| Public primary education expenditure (% total education expenditure) | - | - | - | - | - | - | - | - | - | - | - | - | - | 10.3 | 29.8 | 32.7 | 32.8 | 42.3 | 44.5 | 56.5 | 26.9 | 68.7 | - | - | - |
| **UGANDA** | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Total** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Public expenditure (% GDP) | - | - | - | - | - | - | - | - | - | - | - | - | - | 20.9 | 22.0 | 19.8 | 20.9 | 18.6 | 19.1 | 18.3 | 18.1 | 19.7 | 22.8 | 23.1 | 25.4 |
| Public education expenditure (% GDP) | - | - | - | - | - | - | - | - | - | - | - | - | - | 2.0 | 2.6 | 1.8 | 2.1 | 3.2 | 2.9 | 3.5 | 3.7 | 4.7 | 4.4 | 4.5 | 5.2 |
| Public education expenditure (% total public expenditure) | - | - | - | - | - | - | - | - | - | - | - | - | - | 9.5 | 11.9 | 8.9 | 10.1 | 17.2 | 15.3 | 19.1 | 20.5 | 23.9 | 19.2 | 19.7 | 20.6 |
| Public primary education expenditure (% total education expenditure) | - | - | - | - | - | - | - | - | - | - | - | - | - | | | | | | | | | | | | |
| **Recurrent** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Public expenditure (% GDP) | - | - | - | - | - | - | - | - | - | - | - | - | - | 8.4 | 12.0 | 9.0 | 10.3 | 10.4 | 10.3 | 11.0 | 10.8 | 12.1 | 13.3 | 12.2 | 14.7 |
| Public education expenditure (% GDP) | - | - | - | - | - | - | - | - | - | - | - | - | - | 1.3 | 1.7 | 1.3 | 1.2 | 2.3 | 2.1 | 2.8 | 3.0 | 3.5 | 3.2 | 3.1 | 3.6 |
| Public education expenditure (% total public expenditure) | - | - | - | - | - | - | - | - | - | - | - | - | - | 15.8 | 14.3 | 14.3 | 11.7 | 22.2 | 20.1 | 25.5 | 27.7 | 29.3 | 26.2 | 25.1 | 24.4 |
| Public primary education expenditure (% total education expenditure) | - | - | - | - | - | - | - | - | - | - | - | - | - | 44.2 | 45.1 | 53.9 | 49.9 | 45.6 | 47.0 | 54.2 | 61.6 | 61.5 | 61.1 | 65.2 | 62.2 |
| **Development** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Public expenditure (% GDP) | - | - | - | - | - | - | - | - | - | - | - | - | - | 12.5 | 10.0 | 10.9 | 10.6 | 8.2 | 8.8 | 7.3 | 7.3 | 7.6 | 9.5 | 10.9 | 10.7 |
| Public education expenditure (% GDP) | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.7 | 0.9 | 0.5 | 0.9 | 0.9 | 0.9 | 0.7 | 0.7 | 1.2 | 1.2 | 1.4 | 1.6 |
| Public education expenditure (% total public expenditure) | - | - | - | - | - | - | - | - | - | - | - | - | - | 5.6 | 9.5 | 4.4 | 8.5 | 11.5 | 9.8 | 9.8 | 10.0 | 15.6 | 12.7 | 12.9 | 15.2 |
| Public primary education expenditure (% total education expenditure) | - | - | - | - | - | - | - | - | - | - | - | - | - | | | | | | | | | | | | |

Source: Author's calculations from government statistics: Botswana – Government Estimates of Expenditure from the Consolidated and Development Funds; Malawi – Economic reports and budget documents from MoF (various years); Uganda – Background to the Budget (various years) and Draft estimates of revenue and expenditure (recurrent and development)

Table A.8 Real average annual growth rates in public expenditure by sector in Botswana (%)

| | 1977–81 | 1982–6 | 1987–91 | 1992–6 | 1997–9 | 1977–99 |
|---|---|---|---|---|---|---|
| General public service | 10.6 | 15.5 | 11.6 | 4.7 | 15.4 | 10.1 |
| Defence | 26.7 | 21.0 | 14.0 | -5.4 | 3.8 | 12.4 |
| Education | 12.4 | 15.6 | 15.4 | 10.8 | 9.4 | 11.3 |
| Health | 9.7 | 19.7 | -0.7 | 5.3 | 7.1 | 9.6 |
| Food and social welfare programmes | 16.1 | 33.6 | -23.3 | -15.9 | 42.2 | 25.2 |
| Housing, urban and regional development | 19.3 | -2.2 | 37.9 | -17.9 | 12.5 | 8.8 |
| Other community and social services | 19.6 | 31.8 | 19.8 | -0.7 | 63.0 | 16.2 |
| Economic services | 13.4 | 11.8 | 10.8 | 1.5 | 1.8 | 8.1 |
| Unallocated expenditure | 25.5 | 21.0 | 15.8 | 3.4 | 19.9 | 14.2 |
| **Total** | **14.5** | **14.3** | **14.1** | **1.1** | **11.5** | **10.5** |

Source: Author's calculations from Government Estimates of Expenditure from the Consolidated and Development Funds (various years)

Table A.9 Real average annual growth rates in public recurrent expenditure by sector in Uganda (%)

| | 1990–2 | 1993–5 | 1996–8 | 1999–00 | 1990–2000 |
|---|---|---|---|---|---|
| Public administration | 120.0 | 0.0 | 10.4 | 10.1 | 15.0 |
| Justice/law and order | 19.5 | 28.4 | 5.6 | -1.1 | 15.7 |
| Security | -12.4 | 15.6 | 21.0 | 1.9 | 5.3 |
| Roads and works | 26.6 | -19.3 | 35.5 | 12.3 | 17.9 |
| Agriculture | 6.4 | -12.3 | -4.7 | -22.8 | -1.7 |
| Education | 5.3 | 42.8 | 17.7 | 4.7 | 15.8 |
| Health | 11.1 | 57.8 | 7.2 | 28.0 | 15.7 |
| Economic functions and services | -6.2 | -8.4 | -8.6 | 19.1 | 1.0 |
| **Total** | **26.8** | **22.5** | **13.6** | **8.9** | **12.1** |

Sources: Author's calculations from Background to the budget (various years)

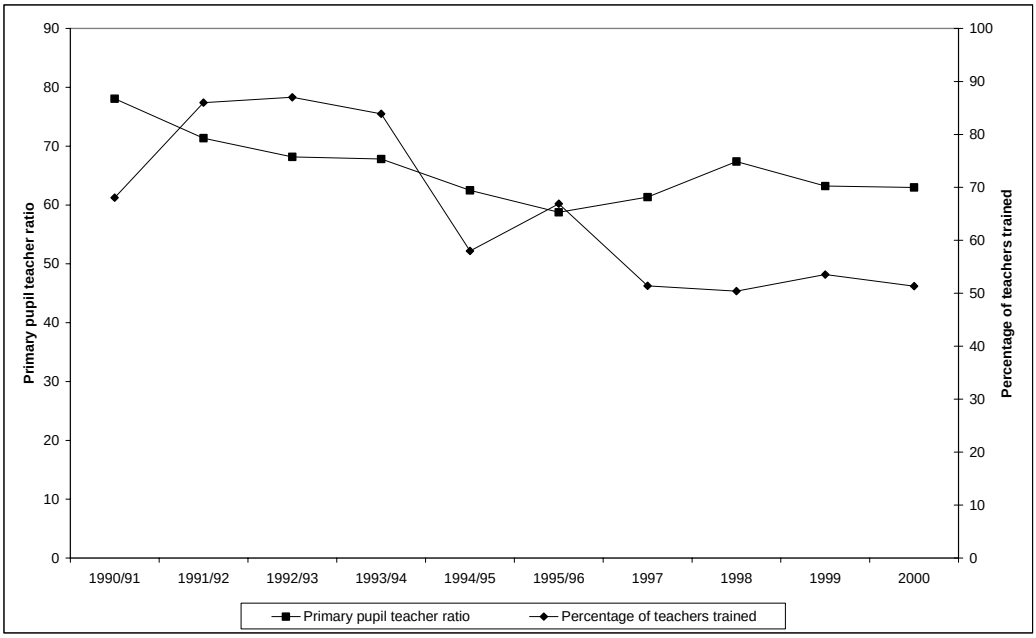
Table A.10 Correlation coefficients for countries

| | GER | NER | Standard 5 survival rate | Repetition rate | Drop-out rate |
|---|---|---|---|---|---|
| **Botswana** | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Public primary education expenditure (% GDP) | -0.24 | -0.11 | -0.36 | -0.29 | 0.46 |
| Public primary expenditure per pupil (US$PPP) | 0.76 | 0.82 | -0.33 | -0.46 | 0.23 |
| Primary pupil–teacher ratio | -0.71 | -0.71 | 0.26 | 0.50 | -0.22 |
| Public primary non-wage expenditure per pupil (U$PPP) | -0.29 | -0.41 | 0.40 | 0.24 | -0.33 |
| **Malawi** | | | | | |
| Public primary education expenditure (% GDP) | 0.38 | 0.21 | -0.12 | -0.13 | 0.22 |
| Public primary expenditure per pupil (US$PPP) | -0.26 | -0.27 | -0.30 | -0.04 | 0.32 |
| Primary pupil– teacher ratio | -0.81 | -0.86 | -0.09 | 0.26 | -0.02 |
| Public primary non-wage expenditure per pupil (US$PPP) | 0.87 | 0.99 | -0.21 | -0.54 | 0.32 |
| **Uganda** | | | | | |
| Public primary education expenditure (% GDP) | 0.96 | 0.97 | 0.08 | -0.84 | 0.04 |
| Public primary expenditure per pupil (US$PPP) | 0.81 | 0.86 | -0.18 | -0.51 | 0.30 |
| Primary pupil– teacher ratio | 0.96 | 0.92 | 0.35 | -0.81 | -0.23 |
| Public primary non-wage expenditure per pupil (US$PPP) | 0.90 | 0.96 | -0.10 | -0.64 | 0.21 |

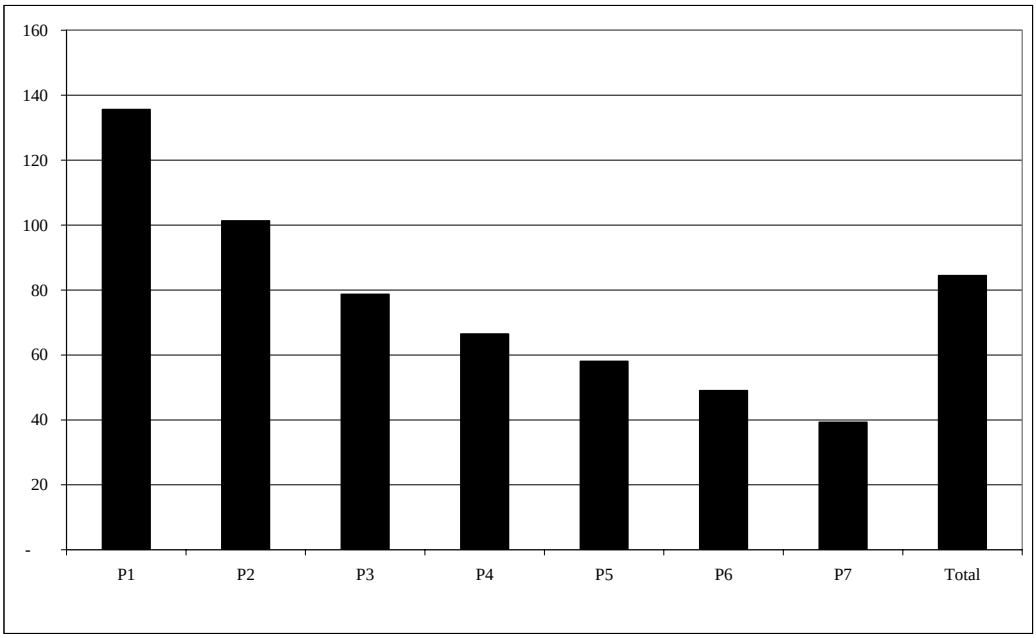
Note: These correlation coefficients are calculated from available data in Chapters 3 and 4 between 1977 and 1999 for Botswana, 1990–2000 for Malawi and 1990–2001 Uganda.

Figure A.1 Primary pupil–teacher ratio and percentage of teachers trained in Malawi



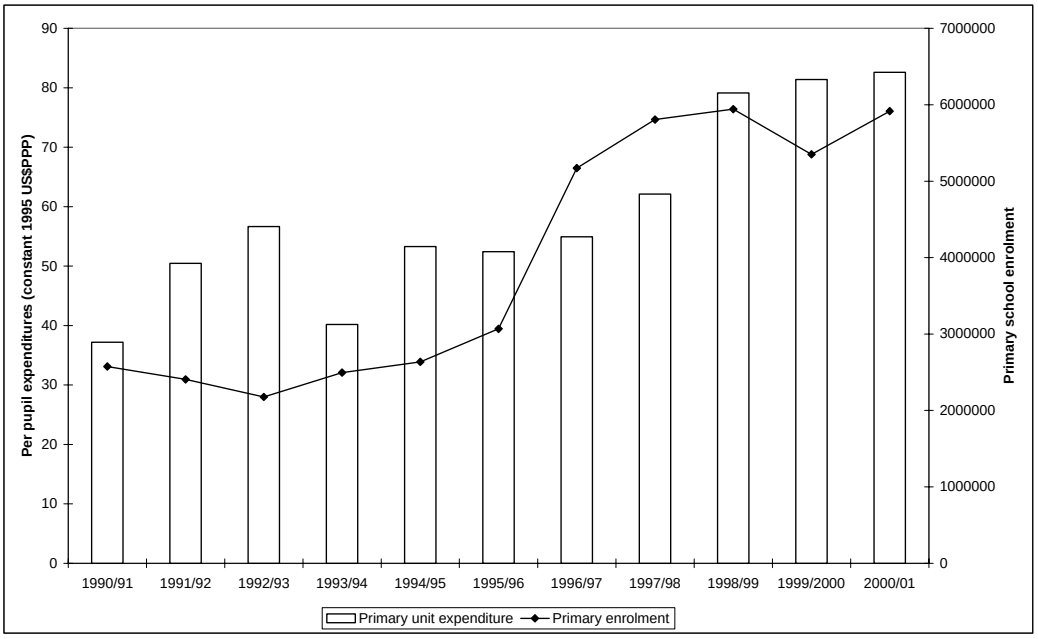

Source: Malawi MoESC education statistics (various years)

Figure A.2 Pupil–classroom ratio by primary school grade in government-aided schools in Uganda, 1997




Source: Republic of Uganda 1999a

Figure A.3 Government per pupil recurrent expenditure and primary school expansion in Uganda




Source: Chapter 4 and MoES statistical abstracts (various years)

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