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Economic Reforms in East African Countries: The Impact on Government Revenue and Public Investment

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ECONOMIC REFORMS IN EAST AFRICAN COUNTRIES:
THE IMPACT ON GOVERNMENT REVENUE AND PUBLIC INVESTMENT

A Dissertation Presented

by

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DEDICATION

To my family,

My lovely parents Swebe (dad), and Elinala (mom);

My wife (Sara),

My sons (Roderick, Ronald, and Brian);

My brothers David and Luke, and

the late Benny (brother) and Harrison (son) who could not be here to share this joy.

thanks also go to the Administration of the Sokoine University of Agriculture for granting me a study leave.

Finally, I want to extend special thanks to my family, in particular, my parents who laid a good foundation for my education to this achievement. They have supported me all the way. I am also in debt to my brothers, David and Luke, for their support to my family during my absence. Nothing would have been possible without my wife's unconditional support, care and love. She gave me the strength and courage to do things I would have never imagined I could. I thank God for her and for our sons Rodrick, Ronald and Brian who have been able to tolerate my absence. I hope that completing my degree will make them proud.

ABSTRACT

ECONOMIC REFORMS IN EAST AFRICAN COUNTRIES: THE IMPACT ON GOVERNMENT REVENUE AND PUBLIC INVESTMENT

MAY 2009

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In the empirical literature on the revenue consequences of trade liberalization, most studies have focused on cross-country analysis. Because these studies are static in nature, they have not addressed the short-run and long-run dynamic public revenue and public investment consequences of economic reforms in developing countries. This dissertation contributes to the literature employing a dynamic time series analysis of the three East African countries-Tanzania, Kenya and Uganda. The dissertation uses a co-integration and error-correction framework to distinguish between short-run and long-run relationships.

The results indicate that trade reforms in Tanzania, Kenya and Uganda had varying impacts on government revenue, tax performance and public investment spending in these three countries. It is demonstrated that trade reforms had adverse impact on government revenue in Uganda, but not in Tanzania and Kenya. The results also show that Tanzania has had the weakest overall tax revenue and public investment. Poor tax performance and erratic revenue generation have been problems in all three countries, contributing to adverse impacts on public investment spending.

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CHAPTER 1

INTRODUCTION

This dissertation is an empirical investigation on the fiscal impact of trade liberalization. Notwithstanding the proliferation of theoretical and empirical literature analyzing the consequences of trade liberalization on government revenue, existing evidence has yielded mixed conclusions. Some studies indicate that trade liberalization has not contributed to a fiscal squeeze in developing countries (Ebrill et al. 1999; DeRosa et al. 2002; Castrol et al. 2004; Hatzipanayotou et al. 1994; Falvey, 1994; Lyakurwa, 1993; Basu and Morrissey, 1997; Ayoki et al., 2005; Agbeyegbe et al., 2006; Muriithi and Moyi, 2003), whereas other studies point to negative fiscal effects of trade liberalization (Rao, 1999; Khattry and Rao, 2002; Grunberg, 1998; Baunsgaard and Keen, 2005; Emran and Stiglitz, 2003; Emran, 2005; UNECA, 2004b).

The discrepancies in the findings on fiscal impact of trade liberalization could partly be attributable to the fact that countries differ in many respects, including their economic structure, trade regime, macroeconomic environment, political economy, and the mix of protective policies and revenue mobilization (Teera and Hudson, 2004; Randolph et al., 1996; Sturm, 2001; Clement et al., 2003; Dreher et al., 2006; Kumar et al., 2007; Gupta et al., 2003; Gupta et al., 2002; 2005; Mackenzie and Orsmond, 1996; Roy et al., 2006).

Therefore, in order to understand the fiscal impact of trade liberalization and its implications for public investment in different countries and regions, each country or trade bloc must be studied separately. This study is an attempt to contribute to this debate, by analyzing the fiscal impact of trade liberalization and its implications for public investment (in physical and social infrastructure) in Tanzania, Kenya and Uganda.

Despite on-going unresolved debates about the fiscal impact of trade liberalization, many African countries and other parts of the developing world are liberalizing their trade and streamlining tariff regimes. The wave of economic integration is premised on the belief that trade

liberalization promotes economic growth. It is argued that removing trade barriers and harmonizing trade policies will enlarge export markets, increase competition, allow countries to exploit economies of scale and permit them to specialize in production of goods and services best suited to their resources and factor endowments (UNECA, 2004a; Choudhri et al. 2006).

While the potential benefits of trade liberalization have proven elusive in Africa, relatively little research has been carried out on its potential costs arising from the fiscal impacts of reduced revenues from trade taxes. In the theoretical literature, trade taxes are generally considered highly distortionary, with a high economic or efficiency cost per unit of tax revenue. Higher tariffs also create incentives for importers to evade tariffs legally by seeking exemptions, or illegally by smuggling, both of which impair revenue mobilization. In theory, lower tariffs may even lead to an increase in the tax base by lowering the marginal benefit to avoiding taxation, hence bringing a rise in revenue after liberalizing trade (Schade, 2005; Zafar, 2005; Elborgh-Woytek et al. 2006). Furthermore, there has long been a widespread view that less developed countries can offset tariff revenue losses by expanding their domestic tax base (Mitra, 1990; Falvey, 1994; Hatzpanayotou et al. 1994; Lyakurwa, 1993; Grunberg, 1998; Keen and Ligthart, 2002; Jenkins and Khadka, 2000; Pelzman and Shoham, 2006; Basu and Morrissey, 1997; Muriithi and Moyi, 2003; Ayoki et al. 2005; Elborgh-Woytek et al. 2006).

In practice, however, alternative sources of tax revenue are not easily forthcoming in these countries. Structural characteristics in less developed countries (LDCs), combined with weak tax administration, arguably limit the ability of these countries to raise taxes from alternative domestic sources (Khattry, 2003; Khattry and Rao, 2002; Rao, 1999; Emran and Stiglitz, 2004; 2005). The most popular alternative "domestic" tax source is the value-added-tax (VAT). Yet it has been reported that more than half of the tax revenue in developing countries from VAT is collected at the border on tradables (Baunsgaard and Keen, 2005).

If alternative revenue sources are not readily available, cuts in trade taxes may be less efficient than is widely supposed. Reduced government revenues can translate into lower public

investment, and can jeopardize macroeconomic stability. Baunsgaard and Keen (2005) point out that tax shifts that are easy in principle may not always be easy in practice. Thus, the availability of alternative domestic tax sources and their potential effectiveness in compensating for trade tax revenue loss from trade liberalization merits careful assessment.

The dependence of developing countries on trade taxes and the difficulty of raising alternative domestic tax revenues necessitate an assessment of fiscal impact of trade liberalization on the level and composition of tax-financed expenditures. Empirical studies show that the most frequent response by government to revenue loss is budget cuts on capital expenditure or social expenditures (Schade, 2005; Khattry, 2003; Khattry and Rao, 2002; Ndikumana, 2004; Rao, 1999; Kumar et al. 2007; Gupta et al. 2002; 2005; Dabla-Norris and Matovu, 2002; Zaghini, 2001; Annett, 2002; Baldacci et al. 2004, Gupta et al. 2003; Basu and Morrissey, 1997; Tanzi, 1993). Government revenue loss thus creates a big challenge for developing countries in addressing economic and social development problems. Indeed, rather than cutting expenditures, many least developed countries, in particular sub-Saharan African countries, need to finance increased public spending on poverty reduction, physical infrastructure, health and education in line with their Poverty Reduction Strategy Papers (PRSPs) and achieving Millennium Development Goals (MDGs).

Using case studies of the three East African countries-Tanzania, Kenya and Uganda-this dissertation investigates the impact of trade reforms not only on total revenues, but also on public investment. Although several studies have analyzed the fiscal impact of trade liberalization in East Africa, none of these have attempted to assess the dynamic short-run and long-run fiscal impacts of trade liberalization (DeRosa et al. 2002; Castro, et al. 2004; Lyakurwa, 1993; Ayoki et al. 2005; Muriithi and Moyi, 2003; Basu and Morrissey, 1997). In addition, there are no any empirical analyses in East Africa that have investigated the implications for public investment of dynamic short-run and long-run domestic fiscal response and adjustment. Most of the studies are static in nature, ignoring plausible short-run and long-run dynamic adjustment resulting from

policy changes and other macroeconomic variables. An exception is the study by Baunsgaard and Keen (2005). However, this study is based on cross-county regression analysis from which it is problematic to disentangle specific policy suggestions to reflect any specific country's economic structure and macroeconomic conditions (Gupta et al. 2002; Banerjee and Duflo, 2003). The proposed study is an attempt to contribute to this literature.

Tanzania, Kenya and Uganda offer an excellent case study since they have all launched economic reforms. These countries share some common features as well as differences in terms of their economic structure, macroeconomic environments and tax structures which need to be taken on board during policy making in order to improve revenue mobilization and public investment.

Using cross-section time-series data of each country over the period 1970-2005, the dissertation examines plausible dynamic effects of trade liberalization on government revenue, responsiveness of the tax system and public investment in Tanzania, Kenya and Uganda. The dissertation employs the error-correction estimation approach to explain short-run and long-run dynamic effects of trade liberalization on government revenue, and the responsiveness of the tax system and public investment in the three countries. The advantage of using the error-correction models is that it combines short-run adjustment mechanisms with long-run information to explain dynamic effects in the equation (Wooldridge, 2002; 2005; Green 2003, Mukherjee et al., 1998).

The data used in this dissertation are drawn from various official government reports from the bureaus of statistics, central banks, and ministries of finance and revenue authorities of the respective countries. These data were complemented with data from other various sources such as the Government Finance Statistics (GFS) and International Finance Statistics produced by the IMF; and World Development Indicators reports and African Development Indicators produced by the World Bank.

In the fiscal impact of trade liberalization literature several different measures of openness have been used to capture the degree of trade liberalization. The most popular method

in the literature is the traditional measure of openness, the trade volume, defined as the ratio of import plus export to GDP, in which case, the higher ratio indicate greater openness to international trade (Ebrill et al., 1999; Adam et al., 2001; Tosun, 2003; Teera and Hudson, 2004; Baunsgaard and Keen, 2005; Agbeyegbe et al., 2006; Davoodi and Grigorian, 2007). Despite being popular, this approach is said to an imperfect measure of trade liberalization because there are other factors that affect trade inflows such as size of the country, foreign capital inflows. For example large countries generally tend to have small trade shares (Harrison, 1996). Despite this caveat, the approach remains the popular method used in the literature especially in developing countries where comprehensive data on other measures are limited. Other measures are collected tariff rate, measured as a ratio of import duties to the value of imports (a declining index indicate greater openness); the ratio of international trade taxes to international trade; average applied tariff rate, episodes of trade liberalization and use of dummy variables (Khattry and Rao, 2002; Ebrill et al. 1999; Agbeyegbe et al., 2006). In this study only the first measure (trade volume) is used because of easy availability of the data and order of integration that was compatible with the methodological approach employed in this dissertation. Other measures were excluded because of unavailability of data and non-statitionary of the first differencing of the data.

The dissertation is organized as follows. Chapter Two provides a brief description of macroeconomic conditions and economic structure of the three countries. It describes the main economic reforms and their subsequent policy components undertaken in Tanzania, Kenya and Uganda over the period between 1970 and 2005. Chapter Three examines the fiscal consequences of trade liberalization for the East African countries. It presents the theoretical prediction of the effects of various trade policy reform measures on government revenue. It reviews various theoretical and empirical studies that have examined the impact of trade liberalization on government revenues. It also discusses the determinants of revenue collection. The trends and performance of revenue in the different policy episodes is also described.

Chapter Four presents an analysis of tax performance in the three countries. It reviews the theoretical and conceptual measurements of tax performance and empirical studies and determinants of tax performance. This is followed by an examination of the trends and patterns of tax buoyancy coefficients of all tax categories.

An empirical exposition on the consequences of changes in revenue generation on public investment spending in Tanzania, Kenya and Uganda is presented in Chapter Five. It reviews the theoretical issues and empirical evidence on the impact of trade reforms as well as other determinants on public investment spending. This is followed by an assessment of the trends in the composition of public spending. Chapter Six concludes by summarizing the major findings of the three empirical studies presented in this dissertation. It also offers some policy suggestions emanating from the major findings.

CHAPTER 2

ECONOMIC REFORM: CONTEXT AND PRACTICES

2.1 Introduction

Since the 1960s, after independence many LDCs pursued interventionist policies in support of the import-substitution industrialization (ISI) development strategy. This was achieved by the erection of barriers to the importation of foreign manufactured goods and efforts instead to produce them domestically. The aim was to create a political, social and economic environment conducive to growth, while at the same time ensuring that the benefits would trickle down to the poor (Corbo and Fischer, 1995; Ray, 1998; Balassa, 1989; Bruton, 1989). As a result, by the late 1970s many African economies were highly distorted due to interventionist policies (Mensah, 2006; Mensah et al., 2006; Aman, et al., 2006; Kiiza, et al., Were, et al., 2006; Ray, 1998; Bagachwa, 1992; FAO, 1994).

In the wake of the 1970s and early 1980s, many LDCs were afflicted by severe economic crises. Many of them faced crises of macroeconomic imbalances, manifested in high rates of inflation; accelerating foreign exchange constraints; unmanageable balance of payments and fiscal deficits, and high external debt ratios. Additionally, GDP growth rates were negative or failing to match the rate of population increase. Weak national policies, weak institutional frameworks and drastic and unfavorable changes in external conditions also aggravated the crisis. External conditions that contributed to the crisis include terms of trade shocks, interest rate shocks, a worldwide recession, oil price shocks and severe reduction in commercial bank lending (Tanzi, 1992; Ray, 1998; Corbo and Fischer, 1995; Lipumba, 1992; Bagachwa, 1992; Amani et al., 2006; Were et al., 2006; Kiiza et al., 2006; Toye, 2000; Weiss, 1994; Balassa, 1989; Faini and De Mello, 1993; Patel, et al., 1997; Coady, 1997).

In the early 1980s, following these economic crises, practical problems, new policy ideas and institutional pressures saw a reappraisal of the direction of economic policy in many LDCs.

As part of stabilization and structural adjustment programs under the auspices of the International Financial Institutions (IFIs)-the World Bank and International Monetary Fund (IMF)-economic reforms became *de rigeur* in LDCs.

2.2 Context and Practices

Economic reforms have been the cornerstone of the IFIs policy-based lending in LDCs since the 1980s. Following the crises of the 1970s and early 1980s, IFIs developed specific lending initiatives under which the balance of payments and budgetary support was provided conditional on and in support of economic reforms. In principle, the justification for these economic reforms rests on the widely perceived microeconomic grounds *vis-à-vis* the functioning of markets and superiority of market-based against non-market-based forms of resource allocation (Weiss, 1994; Bagachwa, 1992; Greenaway and Morrissey, 1993; Toye, 2000; Gilpin, 2001; Choundhri et al. 2006). These reforms are generally known as stabilization and structural adjustment programs (Faini and de Melo, 1993; Weiss, 1995; Patel et al., 1997; Corbo and Fischer, 1995).

Characteristically, these involved the use of a set of policy packages based on principles derived from the theoretical propositions first formulated by classical economists (Adam Smith and David Ricardo) and later strengthened by neo-classical economists (such as Heckscher and Ohlin, James Meade). They applied conventional economic theory to problems of developing countries based on the premises that markets are the most effective mechanism for transmitting information and allocating resources (Bliss, 1988; Weiss, 1995; Gilpin, 2001; Stiglitz, 2006).

Notwithstanding the differences on particular details between countries, economic reform programs have had a common framework. More specifically, structural adjustment program (SAP) comprised of trade and exchange rate liberalization (trade reforms), designed to address external imbalances, whereas stabilization programs entailed tax and expenditure policy reforms (fiscal reforms) meant to address internal imbalances (i.e. cuts in the public sector deficit), in

order to enhance resource mobilization and allocation (Patel et al., 1997; Weiss, 1995; Faini and de Melo, 1993; Corbo and Fischer, 1995; Toye, 2000; Agenor and Montiel, 1999; Ray, 1998; Coady, 1997; FAO, 1994; Linn and Wetzel, 1990).

In practice, stabilization and structural adjustment programs are complementary. Typically, stabilization programs precede structural adjustment programs. This is based on the fact that a rapid response to macroeconomic imbalance is to create conducive environment to structural reforms that will promote economic growth and trade in the long run. That is, the first response to an economic crisis is a well-formulated stabilization program to ensure that macroeconomic imbalances are sufficiently reduced prior to trade liberalization (Toye, 2000; Patel et al., 1997; Weiss, 1995; Linn and Wetzel, 1990). SAP measures are intended to increase the effectiveness of stabilization policies by removing microeconomic obstacles in order to enhance efficient allocation of resources.

The fundamental argument in support of trade reform is that removing impediments to the free movement of goods and services would permit national specialization and facilitate optimal utilization of scarce resources. That is, trade liberalization would lead to efficient trade patterns determined by the principle of comparative advantage and relative abundance of factors of production. These would ensure that a country achieves greater economic growth through participation in foreign trade than through trade protection. It is argued that excessive government intervention into the functioning of the economy is distortinary; does not promote competition; discourages specialization based on comparative advantage; and results in inefficient allocation of scarce resources (Weiss, 1994; Bagachwa, 1992; Greenway and Morrissey, 1993; Toye, 2000; Gilpin, 2001; Choundhri et al. 2006). Based on these premises, proponents of trade liberalization advocate the removal of trade barriers and streamlining tariff regimes, on the ground that by doing so, countries participating in trade will benefit and that free trade is an engine of growth and development.

However, given market imperfections and asymmetries in most LDCs, it has been argued that not all countries would benefit, let alone benefit equally, from international trade. Opportunities in the international markets accrue mostly to the developed countries that are able to take advantages of the opening up of markets. Above all, it has been contested that assumptions underlying the principles of comparative advantage and relative abundance of factors of production used to formulate trade theory are inappropriate in LDCs (Stiglizt, 2006; Palley, 2006; Sen, 2005; Ray, 1998; Bruton, 1989; Bliss, 1988), and that the theory is static in nature, failing to take into account dynamic short- and long-run changes in the international markets (Sen, 2005; Bliss, 1988). Notwithstanding these criticisms, however, the theory continues to be used to justify the push for trade liberalization in LDCs.

In the public finance doctrine, it is contended that import duties/tariffs (trade taxes) should not be used as sources of government revenue because of their negative effects on economic production. They are considered to have undesirable distortinary effects on the allocation of resources (Ahmad and Stern, 1989; Newbery, 1987; Patel et al., 1997; Coady, 1997; Linn and Wetzel, 1990; Lyakurwa, 1993). It is argued that taxes and barriers on international trade of any sort tend to encourage domestic production of final consumer goods while permitting relatively free imports of capital or intermediate goods. This tends to be associated with high rates of effective protection, high cost of domestic production, and creating a bias against exports. Consequently, while reducing the dependence of the country on imports of final consumption goods, the economy becomes highly dependent on imports of intermediate goods and more vulnerable to fluctuations in export earnings (Newbery, 1987; Coady, 1997). This ultimately affects government revenue collection and allocation.

Thus defenders of trade and fiscal reforms advocate for trade liberalization requiring tariff reform through replacement of quantitative restriction with tariffs and reduction of tariffs. In order to ensure that liberalization efforts are not curtailed and reversed, it is argued that tariff reforms should be integrated with tax reform of domestic commodity taxes. That is, domestic

consumption tax should be increased at the same time as tariffs on final products are lowered. The goal is to eliminate the bias in favor of import substitution (Keen and Syed, 2006; Pelzman, 2004; Patel et al., 1997; Linn and Wetzel, 1990).

However, for LDCs that are heavily dependent on trade taxes as their sources of government revenue, tariff reform has a negative effect on government revenue and internal balances. Reduction in tariff rates reduces customs revenue from imports, thus causing a loss in government revenue. Moreover, the substitution of domestic consumption and income taxes for trade taxes does not necessarily provide a viable option. This is because consumption and income taxes in LDCs are notoriously difficult to collect. Most households in these countries consume from their own production. Furthermore, in LDCs revenue collection is limited because the tax bases are narrow, and there are large number of tax exemptions, large opportunities for tax evasion, and high age-dependency ratios (Newbery, 1987; Linn and Wetzel, 1990; Tanzi, 1987; Musgrave, 1987; Addison and Levin, 2006).

In most LDCs rural households which comprise the bulk of the population in LDCs derive their incomes from a wide variety of sources. Self-employed in the informal sector for a substantial fraction of time, much of their incomes are in kind. They do not keep written records of incomes and expenditures, and literacy and income levels are so low that the administrative costs of assessing income are exorbitant (Newbery, 1987; Linn and Wetzel, 1990; Coady, 1997; Tanzi, 1987; Teera and Hudson, 2004; Musgrave, 1987; Addison and Levin, 2006). In this situation, a country may find it difficult to recover the loss of revenue due to cuts in trade taxes. Failure to raise sufficient revenue results in an increase in the size of the fiscal deficit, undermining the goal of economic reforms of achieving macroeconomic stability and economic growth.

It is commonly argued that the initial priority of governments facing a serious economic crisis is the restoration of macroeconomic stability, through the reduction of fiscal deficits to more sustainable levels. In order to achieve this, the short-term to medium-term objectives of

fiscal reform should focus on cuts on public expenditures and raising revenues. The long-term objectives may involve the changes in the tax structure so as to remedy some of the deficiencies in the tax systems (Weiss, 1995; Coady, 1997; Patel et al., 1997; Faini and de Melo, 1993; Tanzi, 1993).

But empirical evidence suggests that cuts in public expenditures affect spending on physical infrastructure and social sectors such as education and health (Faini and de Melo, 1993; Toye, 2000; Basu and Morrissey, 1997; Tanzi, 1993; Rao, 1999; Khattry, 2003; Palley, 2006; Winters, et al. 2004; Clement, et al. 2003; Roy, et al. 2006; Schade, 2005; Kumar et al. 2007; Gupta et al. 2002, 2005; Baldacci et al. 2004). The option of cutting public expenditure as a means of reducing fiscal deficits does not necessarily provide a viable option, as this has potential adverse effects on growth and poverty. Public expenditure cuts introduce new distortions that reduce the productivity of the public sector's service provision. Therefore, before any policy reform is implemented, a critical analysis is necessary to help shed light on the extent and direction of the effects of any proposed reforms so that possible mitigation measures to counter their effects can be implemented.

2.3 Episodes of Economic Reform in East Africa

This section takes stock of the overview of the economies and policy reform episodes in the three East African countries, Tanzania, Kenya and Uganda, over the period 1970-2005. The aim is to characterize trends and to draw out specific policy instruments instituted in each reform regime that had direct or indirect impact on government revenue mobilization and public investment. The distinctive periods of reforms and causes of the changes between periods of reform and periods of retraction are also examined. A number of policy reform phases ranging from four to six, have been identified for the East African countries, and these are discussed in sequence in the following sections.

2.3.1   Tanzania

Overview of the Tanzanian Economy

Following the attainment of its independence in 1961, the Tanzanian economy has been characterized by two distinct economic structures, comprising a traditional rural sector and a modern urban sector. The rural sector is much concerned with the production of food and cash crops, whereas the modern urban sector, which is relatively small, is concerned with manufacturing and service activities. The linkage between the two sectors is weak (Bukuku, 1993). The agricultural sector share in GDP has been more than one-third over the period between 1970 and 2005. Dependency on agriculture as the mainstay of the economy makes the Tanzanian economy vulnerable to both external and internal shocks. The industrial sector also contributes to the national output, but at a lower level than agriculture. The contribution of the industrial sector to GDP has varied since 1970. In early 1970s the sector contributed more than 20 percent to GDP until 1980; thereafter the contribution of the industrial sector to GDP declined to 15 percent in the early 1980s before it started to increase in the 1990s where it has remained constant at 18 percent of GDP (see Table 2.1).

Consistently with its higher contribution to GDP, the agricultural sector employs more than 80 percent of the labor force, predominantly smallholders on average operating less than 1.5 hectares, mainly producing for subsistence with very limited marketable surpluses. Based on the population census of 2002, the country's population was 34.4 million in 2002; this grew from 23.2 million in 1988. The population grows at more than 3 percent per annum. Tanzania is among the poorest countries in the world. The larger proportion of the populace in Tanzania has remained poor since independence in 1961. In Tanzania, the per capita income has remained very low, ranging between US$ 120 and 340 (see Table 2.1). Tanzania's weak economy also translates into the poor provision of social services such as health and education, contributing to poor social indicators (see Table 2.2).

Origins of the Economic Crisis in Tanzania

After its independence in 1961 from the British government, Tanzania adopted an independent, socialist-oriented development strategy under the leadership of Julius Nyerere. With the Arusha Declaration in 1967, the government adopted an interventionist approach through stringent price controls and established a large number of state-owned enterprises with a view to promoting a public sector-led development strategy. With a good recorded economic performance in the early 1970s, internal and external economic shocks (i.e. the war with Uganda in 1978/79; the oil price shocks of 1973/74 and 1979/80; severe droughts in 1973/73, 1981/82 and 1983/84; the break up of the East African Community in 1977; the relocation of rural producers in new villages starting with "villagization" in 1972) led the country into an economic crisis of unprecedented proportions throughout the late 1970s and early 1980s (Maliyamkono and Mason, 2006; Amani et al., 2006; Wobst, 2001; Bigsten and Danielsson; 1999; Morrissey, 1995; Basu and Morrissey, 1997, Bagachwa, 1992).

Despite growing concerns of the emerging economic crisis in the period between the late 1970s and early 1980s, the control regime was tightened further as the government sought to finance increased spending and to maintain the import-intensive Basic Industries Strategy (BIS) in the face of declining export revenue. External debt arrears developed rapidly, and after the end of the war with Uganda in 1979 foreign inflows fell drastically because donors were unsatisfied with macroeconomic policies. The sheer size and intensity of the economic crisis between 1979 and 1985 necessitated the government to react to the economic breakdown with home-grown adjustment efforts and later IFI-supported reforms. The home-grown reforms constituted the National Economic Survival Program (NESP, 1981/82) and own structural economic reform (1982/83-1984/85). The IFI-supported reforms consisted of the Economic Recovery Program (ERP, 1986/87-1988/89) and the Economic and Social Action Program (ESAP, 1989/90-1991/92). Others include the period of off-track reforms covering the second phase of President

Ali Hassan Mwinyi's regime between 1992 and 1995, and the second generation recovery reforms under President Benjamin William Mkapa (1996 to 2005).

Home-Grown Policy Reforms in Tanzania (1981-85)

The first response to the economic crisis was the National Economic Survival Program (NESP) covering the period 1981 and 1982. NESP had short-term objectives. The approach involved internal mobilization and utilization of resources. The goal was to increase export revenue, eliminate food shortages and reduce public expenditure (Amani et al., 2006; Bagachwa, 1992; Wangwe, 1997; Basu and Morrissey, 1997). The main policy instruments implemented under NESP are as described in Table 2.3. The program was unsustainable. The country entered into even a deeper crisis. NESP did not successfully address problems underlying foreign exchange constraints and as a result the crisis persisted, and macroeconomic imbalances became acute (Basu and Morrissey, 1997; Morrissey, 1995). The economy was characterized by an overvalued exchange rate, unsustainable balance of payments, high shortages of goods in the market, and an inflation rate that continued to rise (Amani et al. 2006; Morrissey, 1995; Basu and Morrissey, 1997).

NESP was soon replaced by another independent economic reform by the government spanning from 1983 to 1985. This was reached following the break-up of the negotiation with IFIs on the proposal that was prepared by the Tanzania Advisory Group (TAG) in 1981/82 (Wangwe, 1997). The program was designed to restore external and fiscal balances. The aim was to contain inflation, stimulate output growth through agricultural output expansion, and increase capacity utilization and efficiency in industry. At first, SAP did not result in any significant changes in Tanzania's economic performance because the government was reluctant to implement reforms. In the fiscal year 1984/85, the government launched some partial reforms aimed at liberalizing the economy (Morrissey, 1995; Basu and Morrissey, 1997; Wangwe, 1997;

Amani et al., 2006; Bigsten et al., 2001; Wobst, 2001). Policy measures implemented during the 1981-85 reform period are presented in Table 2.3.

Overall however, the experience during the period shows that the government's own structural economic reforms failed to address macroeconomic imbalances. Although during the first years both recurrent and overall deficits declined, they both increased during the subsequent years reaching high levels. The fiscal deficit increased from 3.5 percent of GDP in 1973 to 6.6 percent of GDP in 1977 and reached 18 percent of GDP in 1980. The current account deficit deteriorated from 2 percent of GDP in 1977 to 16 percent in 1980. In 1985, the current account deficit was 8 percent of GDP. This resulted in the failure of the government to adequately finance its public spending and importation of goods and services. The situation resulted in excessive government borrowing from the banking system. This in turn contributed greatly to the increase in inflation rates (Amani et al., 2006; Basu and Morrissey, 1997; Morrissey, 1995; Lyakurwa, 1993).

IFI-Supported Policy Reforms in Tanzania (1986-92)

After long heated debates with IFIs, and other multilateral and bilateral donors, delays, reversal, and reluctance of implementing IFI-supported policy reforms and the failure to redress macroeconomic imbalances, in June 1986 the Tanzanian government reached an agreement with IFIs on the policy packages that were to be adopted. The government launched the Economic Recovery Program (ERP, 1986-89). The key features of this program were to liberalize internal and external trade, unify the exchange rate, revive exports, stimulate domestic savings, and restore fiscal sustainability (put limits on the budget and balance of payments deficits) as well as put limits on domestic credit. ERP was founded on donors' ideas regarding market-oriented economic reforms, trade liberalization, privatization and minimal state intervention. With a good appeal to donors, the government received external support for the ERP. During this period the

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Tanzanian government introduced multiparty democracy. The main policy reforms implemented during the ERP are summarized in Table 2.4.

Following the implementation of prudent fiscal reforms during the ERP reform period, a number of impressive results were recorded. The GDP growth rate increased sharply from 0.5 percent in the 1981-85 to 4.2 percent during the ERP reform period. The revenue/GDP ratio also increased from an average of 18.3 percent in 1981-85 to 22.1 percent in 1991. The budget deficit was reduced from an average of 10.1 percent in 1981-85 to 3.5 percent in 1991. The government also reduced its reliance on domestic bank borrowing to finance the deficit. Domestic borrowing decreased from 40 percent of GDP in 1986 to 13 percent of GDP in1989, further declined to 6 percent in 1992. In 1990 and 1991 the government made net repayments to the banking system (Wobst, 2001; Amani et al. 2006; Bagachwa, 1992; Basu and Morrissey, 1997).

Despite the encouraging developments made under ERP, there were still problems that continued to limit economic growth. These problems include: low domestic savings; high rates of inflation; weaknesses in the agricultural marketing system; the pressure on a financial system faced by structural weaknesses; and the poor state of social services. In order to address these problems, the government launched a three-year Economic and Social Action Program (ESAP) in 1989/90 as a successor to ERP. ESAP basically maintained the same objectives as those under ERP, but sough to address peoples' concerns over the social consequences of ERP. To achieve these objectives, sectoral priorities and programs covering the agricultural sector, transport and communication, manufacturing, mining and energy were set for implementation (Amani et al., 2006; Wangwe, 1997; Lyakurwa, 1993).

ESAP concentrated on trade liberalization by reviving production incentives, exchange rate liberalization and management, macroeconomic stabilization, credit and money supply policies and balance of payments management. External support was available during the ESAP reform period, including a loan from the IMF Economic and Structural Adjustment Facility (ESAF) plus three World Bank projects, namely the Tanzania Agricultural Adjustment Credit, the

Financial Sector Adjustment Program and the Structural Adjustment Credit (Amani et al. 2006; Bigsten and Danielson, 2001; Wangwe, 1997; Basu and Morrissey, 1997). Policy reform packages contained in ESAP are summarized in Table 2.5.

Overall, the period from 1986 to 1992 saw an aid boom, as most donors expressed more confidence in the kind of policy reforms that the government was implementing. Despite commitment to reforms, implementation faced resistance as the government was still dominated by hard-liners who opposed IFI-supported reforms. As a result, limited progress was recorded in the 1986-92 period. Nonetheless, the rate of investment increased from 20 percent of GDP during the crisis years of 1980-85 to an average of 34.6 percent during the 1986-92 reform. During this period the share of private investment in total investment rose from about 50 percent in the mid 1970s to 60 percent in 1986 and further to 70 percent in the early 1990s (Bigsten and Danielson, 1999; Wangwe, 1997).

Consistent with the high rate of investment growth, the rate of economic growth recovered in the post-reform period (after 1986). The growth rate of GDP increased from an average of 2 percent per year in the period 1980-85 to an average of 4 percent during 1986 to 1992. Growth performance was shared in the key sectors of the economy. Annual growth in agriculture increased from 0.6 percent during 1980-85 to about 5 percent in the period 1986-92. The industrial sector growth increased from a -4.5 percent (decline) per year during the period 1980-85 to about 4-5 percent per year in 1986-92 (Wangwe, 1997; Bigsten and Danielsson, 1999). Notwithstanding these achievements, there were still a number of challenges that were manifested in the economy threatening further improvement in these areas and/or even the sustainability of what had been achieved. These included continuing high budget deficits, persistent balance of payment deficits, the low level of domestic savings and continuing inflationary pressure (Wangwe, 1997).

Reforms Program Off-Track (1993-1995)

Despite progress that was made in the improvement of macroeconomic stability and growth performance under ERP and ESAP during the 1986-92 period, the country experienced a setback in 1993-95 marking another era of economic crisis. This is attributed to lack of commitment by President Mwinyi's government to continue with economic reforms. As a result, in 1994 donors suspended the balance of payments support, citing problems related to tax evasion. Tanzania's reform program went off-track. During this period, fiscal policy went out of control as government spending grew and the budget deficit increased to 7.5 percent of GDP; tax revenue collection dropped drastically from 13.74 percent of GDP to 10.07 percent of GDP. There were large-scale of tax exemptions. Furthermore, corruption and tax evasion were rampant. The gains that were achieved in reducing inflation were reversed, and inflation rose from about 22 percent in 1992 to 37 percent in 1994. Faced with the need to finance its deficit, the government resorted to borrowing from the central bank. The fiscal control and discipline that was put in place during the ERP and ESAP program was lost (Amani et al. 2006; Bigsten et al., 2001).

This was a period of economic stagnation. The government was hesitating and uncommitted to a new generation of reforms, as the demands of donors shifted to new areas. Donors pressed the Tanzanian government to implement second generation reforms which were believed to be more intrusive than the first generation of policy reforms. According to Bigsten et al., (2001) new generation reforms had demands which required closing various leakages in the system. The second generation reforms put much emphasis on bank reforms in particular. However, the government was not fully committed to implementing radical reforms. Its laxity in public finance management and granting tax exemptions to politically influential entities, led to the erosion of donor confidence, and ultimately to suspension of financial support (Amani et al., 2006; Bigsten et al., 2001). Although, policy reform went off-track during this period, there were some institutional reforms that were starting to be implemented. These include investment

promotion, financial sector reforms, civil service reforms and privatization. But the pace of implementation was very slow (Amani et al., 2006; Bigsten et al., 2001).

Second Generation Recovery Reforms (1996-2005)

Tanzania's economic reform process from the 1980s to 2005 can be described as a sequence from partial to off-track to successful reform. The early reforms, covering the period between 1980 and 1995, were sporadic and their implementation process was slow. In contrast, the reforms process since 1996 has been robust and relatively successful; macroeconomic stability has been achieved, donor relations restored, and structural and institutional reforms accelerated. During the years 1996-2005, reforms were back on track and the IMF provided support with a new ESAF loan covering a three-year period between 1996 and 1999 which was successfully implemented. This also brought in other donors. The ESAF loan was followed by another three-year loan under the Poverty Reduction and Growth Facility from 2000 to 2002 (Amani, 2006).

When President Benjamin Mkapa's government came to power in 1995, it faced the challenges of restoring donor relations, pursuing radical reform, fighting corruption, reducing inflation and mobilizing domestic resources. Before embarking on radical reforms, the government initiated a shadow program with the IMF, for a period between January and June 1996. The focus of this program was to eliminate impediments to sound budgetary management and reform the financial sector (Amani et al., 2006; Bigsten et al., 2001).

Notwithstanding the commitment to policy reforms by President Mkapa's government, poverty levels were still high and employment rates were also high. Towards the end of the 1990s, the Tanzanian government responded by formulating domestic policies such as the National Poverty Eradication Strategy (NPES), the Tanzania Assistance Strategy (TAS) and, later on the Poverty Reduction Strategy (PRS) in conjunction with initiating the Poverty Reduction Strategy Paper (PRSP) which was tied to debt relief. Then the PRSP was revised in 2003 to form

the National Strategy for Growth and Reduction of Poverty (NSGRP). Policy changes initiated during this period are summarized in Table 2.5.

2.3.2 Kenya

Overview of the Kenyan Economy

Kenya's economy is relatively diverse, with both agricultural and industrial potential. Agriculture is crucial to Kenya's economy in terms of its contribution to output, employment and export earnings. The sector accounts for approximately a quarter of the GDP (see Table 2.6), employs almost 75 percent of the labor force, accounts for about 70 percent of export earnings, generates almost all of the country's food requirement and provides a significant proportion of raw materials for the resource-based industrial sector. Smallholders and subsistence farmers play a key role; they contribute 70 percent of marketed agricultural production. The contribution of the industrial sector in GDP has varied over time. The slump in the share of the industrial sector in total GDP started in 1994; it fell to about 17 percent, down from 20 percent in the 1970s (Kiringai et al., 2006; Lundstrom and Ronnas; 2005).

The structure of the Kenyan economy has undergone significant changes for the period under investigation. The sectoral contribution to GDP has varied over time, depending on the performance of the economy. The share of the service sector has increased from 39 percent in 1980 to 46 percent in 2001; the contribution of agriculture has declined from 32 percent in 1980 to 27 percent in 2001 and 24 percent in 2003, while manufacturing sector's contribution has remained almost static at 13 percent since 1980. The service sector accounts for more than half of Kenya's GDP and two-thirds of formal employment. The key service sub-sectors are tourism, travel, financial, communication and transport services (UNECA, 2002; Lundstrom and Ronnas; 2005).

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Despite having a relatively larger economy than its neighboring counterparts Tanzania and Uganda, Kenya is also among the poorest countries in sub-Saharan African region with its per capita income of about 400 USD a little more than a dollar per day (Lundstrom and Ronnas, 2005). Poverty levels have risen in Kenya, from a headcount measure of 40 percent in 1994 to 52 percent in 2000. Between 1996 and 1999, the number of people living under the poverty line rose from 11.5 million to about 15 million (HDR, 2001; UNECA, 2002). Rising poverty levels, along with inaccessibility of both rural and urban Kenyans to proper medical care and high quality education, have contributed to high unemployment rates and mortality rates (UNECA, 2002; Lundstrom and Ronnas, 2005). This is reflected in the relatively weak social development indicators; in terms of high mortality rates and low life expectancy (see Table 2.7). The county's total population in 2004 was estimated at 32.4 million, with the annual percentage growth rate of 1.7 percent. About 80 percent of the population lives in rural areas, deriving their livelihoods largely from agriculture.

Origins of the Economic Crisis in Kenya

Like many other African countries, after its independence from Britain in 1963 Kenya adopted an interventionist-inward-looking development approach. The goal was to promote economic growth in order to raise overall standard of living. Specific objectives included: to achieve high and rapid economic growth, guarantee political equality; social justice; human dignity; and equal opportunities (Wagacha, 2000).

Kenya experienced a relatively stable economic environment in the period between 1960 and early 1970s. Economic growth was strong in the first two decades after independence and weak or negative thereafter. Between 1963 and 1970, the economy grew at an average real growth rate of 6.6 percent. During the 1970s the situation changed drastically, as the nation experienced macroeconomic instability characterized by a stagnating economy with average growth rates slipping to 4 percent in the 1970-80 period coupled with trade shocks, fiscal

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indiscipline, declining per capita consumption, increasing poverty and structural distortions (Were et al., 2006; Legovini, 2002; Kabubo-Mariara and Kiriti, 2002; Wagacha, 2000).

The poor economic performance during the 1970s and early 1980s has been attributed to inadequate domestic policies and severe internal as well as external shocks (i.e. droughts in 1979/80 and 1983/84, oil crises of 1973/74 and 1979/80) and deterioration in the terms of trade in 1970s (Legovini, 2002). On the macroeconomic front, a large fiscal deficit was behind an acceleration of inflation and deteriorating current account deficit. On the microeconomic front, heavy government interventionist policies through price controls, import controls, multiple exchange rate systems, distribution controls and massive expansion of the public sector in the production of private goods aggravated the problems. All these combined resulted in heavily distorted relative prices and an overextended public sector, making the country more vulnerable to external shocks (Were et al., 2006; Legovini, 2002; Kabubo-Mariara and Kiriti, 2002).

The government responded to the crises by tightening the trade regime and seeking financial assistance from donors whose general policy conditionalities were spelt out in the 1974-78 development plans (Were et al., 2006; Kabubo-Mariara and Kiriti, 2002). Despite deepened economic crisis, the government opted for the home-grown policy reforms mainly focusing on control regimes, which exacerbated the crisis even further. Persistent economic crisis together with lack of external finances necessitated the Kenyan government to embark on economic reforms in order to restore donors' confidence (Were et al., 2006; Legovini, 2002; Kabubo-Mariara and Kiriti, 2002). Five episodes of Kenya's economic policy reforms have been identified: the pre-crisis (1970-79), crisis period (1980-86) and post-crisis divided into the reform periods of 1987-90, 1991-96 and 1997-2005.

Crisis and Home-Grown Economic Reforms over the period 1980-86

In order to contain the economic crisis of the early 1980s, it was inevitable for the Kenyan government to adopt reform policies to reorient the economy and put it on a renewed

growth path. Reluctantly, the government embarked on a partial reform which was not successful. This was partly due to limited commitment by the government, which failed to carry out trade reforms and liberalize grain marketing (Lengovini, 2002; Were et al., 2006). The main features of the policy packages of the program were the removal of import controls and a shift from import-substitution to an export-promotion strategy (Were et al., 2006; Legovini, 2002). The policy components of the program are summarized in Table 2.8.

Notwithstanding the stability of the macro economy between 1982 and 1984, virtually no progress was made towards structural adjustment and the real GDP growth rate declined to 3.4 percent. The poor performance of the 1980-84 reforms was partly due to weak and uneven commitment by the government to implement reforms, as the reforms took place within an environment of fiscal laxity and lacked coordination within macroeconomic policies (Were et al., 2006; Legovini, 2002; Kububo-Mariara and Kiriti, 2002; Wagacha, 2000).

The lack of adequate commitment to the reform process during the first phase of economic reforms (1980-84) resulted in a withdrawal of donor funding. To demonstrate it had a commitment to policy reform and a clear long-term development strategy, the government prepared a *Sessional Paper of 1986 on Economic Management for Renewed Growth.* In this policy document, the government accepted its minimal participation in the development process by paving the way for more private sector participation (Were et al., 2006).

Economic Recovery Reforms of 1985-91

The late 1980s saw a major policy shift towards liberalizing the economy through structural adjustment. The main focus of the economic recovery program was on sectoral reforms. This was accompanied by various sectoral loans. The adjustment programs were mainly developed in the agricultural sector (in 1986 and 1990); industrial sector (1988); financial sector (1989); and export development (1990 and 1991) (Were, et al., 2006; Kububo-Mariara and Kiriti, 2002). Policy measures implemented under SAPs are summarized in Table 2.8.

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During this second phase of economic reform (1985-91), attempts were made to liberalize the economy. However, the level of progress was still limited, and commitment to reform was patchy and intermittent. During this period, the liberalization process was far from complete. The reform efforts were characterized by policy reversals and delays, as well as failures in the implementation of planned activities. There were a number of distortion-creating instruments since tariff rates were still on the high side, the import licensing system was still in place with considerable executive discretion, and foreign exchange restrictions were still in operation (Were et al., 2006).

The limited extent of the reform and the slow pace of its implementation were attributed to the fact that despite repeated announcements of intentions in policy documents, the government was still reluctant to implement the reform, and kept deferring actual implementation. For example, the government hesitated to levy user-charges in the provision of public health and education services. Although these were later implemented in December 1989, the policy was reversed in September 1990 by suspending the outpatient fee, nine months after its inception (Were et al., 2006).

Additionally, other factors reported to affect the reform process in Kenya included political interference of the civil service, and secrecy and limited consultation during the implementation of its policies. Some major reforms were deferred or avoided because of looming political uncertainty of the effects of reforms and fear of losing patronage. Reforms were undertaken on the periphery, whereas the most sensitive reforms that had direct impact on the electorate such as retrenchment in the civil service, and user-fees in the social sector were deferred or reversed (Were et al., 2006; Kabubo-Mariara and Kiriti, 2002; Wagacha, 2000).

As a result, most donors were dissatisfied with the pace of the implementation process. This ruined the relationship between the Kenyan government and development partners, thus halting adjustment lending. Although there were records of good economic performance during the second phase of reform, structural adjustment failed to create conditions for sustainable

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recovery of economic growth to the rates experienced in the 1960s. Economic growth was unstable throughout the entire period of the first and second phase reforms. Growth rate fluctuated at an average growth rate of real GDP of 3.3 percent in 1973-75, rising to 6.7 percent in 1976-78, then falling to 5.2 percent in 1985-9 and declining further to 2.3 percent in 1990-91 (Were et al., 2006; Kabubo-Mariara and Kiriti, 2002; Wagacha, 2000).

Economic Reforms of 1991-96

The third phase of economic reforms (1991-96) demonstrated bold reforms in trade, civil service, agriculture and social sectors. In the public sector, a number of reforms were undertaken, including restructuring and privatization of public enterprises. The aim was to enhance the role of the private sector by reducing the claims on the budget, rationalizing the public enterprise operations, improving the regulatory environment and broadening the base of ownership. This involved the retrenchment of civil servants. In order to implement effectively the public sector reform, the government established the Department of Government Investment and Public Enterprises in 1990, charged with the responsibility of overseeing the parastatal reform program. In addition, a Parastatal Reform Program Committee was set up as policy-making body (Were et al., 2006; Legovini, 2002).

Under the social sector reform, the government announced a phased reintroduction of user-fees in April 1992. Outpatient fee was reintroduced as a fee to be paid only after receiving treatment. Other reforms implemented in the social sector include the expansion of the segment of the population that was exempted from the fees, including civil servants, the military and the unemployed. In addition, this was accompanied by the decentralization of management (Were et al; 2006). The major policy components of the third phase economic reforms are summarized in Table 2.9.

Economic Reform of 1997-2005

The economic policy reforms between 1997 and 2005 saw progress in the implementation of reforms, particularly in the public sector that lagged behind during the 1991-96 period. The 1997-2005 public sector reform had important features including the "right-sizing" of the government by reducing the civil service by 30 percent; reducing the number of ministries; balancing revenue and expenditure more closely; and renewing the privatization strategy (Were et al., 2006; Legovini, 2002). Important policy components of the program are summarized in Table 2.9. However, attempts to down-size the civil service were halted because the parliament did not agree with the decision. It was argued that the decision was a directive from donors, rushed, and that there wasn't adequate consultation in the design of the reform. The government was also sued for breaching the Employment Act by terminating employment contracts without adequate notice (Were et al., 2006; Legovini, 2002).

Despite concerted efforts by the government in undertaking public sector reforms a number of factors have been cited to explain the halt of the implementation process. For instance, Legovini (2002) observes that despite a good start and progress made on preparing for the privatization process, the program was stalled because transactions lacked transparency, political support was weak, the strategy was unclear, and institutional and administrative arrangements was inadequate. Were et al. (2006) outline a number of other factors that contributed to the disruption of the reform process, including: elusive fiscal discipline; the implementation process lacked specific targets, sanctions and incentives; weak institutional structures; mechanisms to control discretionary spending were weak within the executive; and high turnovers of ministers and their permanent secretaries.

Furthermore, the government kept on delaying and reversing the implementation process; privatization proceeded without a privatization law, which left some loopholes for manipulation; and the government avoided privatizing some of the parastatals that caused a major drain on the budget. For instance, in 1999/2000 fiscal year a number of state-owned enterprises which were

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planned for restructuring and privatization were not privatized (Were et al. 2006). The failure of the Kenyan government to implement donor reform agendas led to the suspension of the disbursement of funds by the donors. As a result, Kenya's long-term economic performance deteriorated in the 1990s. Poverty rate increased from 48 percent in 1990 to 56 percent in 2001 (Sasaoka, 2005; Alia and Njeru, 2005; Ondieki, 2005; Otieno, 2005). With the take over of the power by the National Alliance Rainbow Coalition (NARC) in 2002, the government initiated the dialogue with donors on the kind of reforms that were needed among others to address issues related to governance, corruption and poverty. Despite showing some indication of commitment to economic reforms by the NARC government, corruption remained rampant and the government did not commit itself to policy reforms.

Following the failure to implement donor reform agenda, in 2003 the Kenyan government decided to formulate its Economic Recovery Strategy (ERS) with the positive consideration for both economic growth and poverty reduction. The overall objective of the ERS was to harmonize strategies for accelerated economic growth with the country's poverty reduction strategies (Sasaoka, 2005; Alia and Njeru, 2005; Ondieki 2005). The ERS was criticized because it was too broad and lacked direct poverty reduction objectives, which was left in the background by the focus on the overall economic growth strategy. In order to qualify for donor support, the Kenyan government was advised to formulate a more focused policy document to reduce poverty. In 2004 the Investment Program for Economic Recovery Strategy (IP-ERS 2003-2007) was formulated as a poverty reduction strategy and PRSP for Kenya (Ondieki, 2005).

2.3.3 Uganda

Overview of the Ugandan Economy

The Ugandan economy is predominantly agricultural, employing more than 80 percent of the workforce, growing food for subsistence and export crops. Over the years, agriculture accounted for more than 50 percent of GDP. In recent years, however, the share of the sector in

GDP has declined from more than 50 percent in 1994 to 33.5 percent in 2005. The service sector plays an important role in the Ugandan economy. The percentage share of service in total GDP of the country as in 2004 is calculated at 46.6 percent. Historically, the contribution of the industrial sector to the national output has been minimal, but it has grown recently (see Table 2.10). The contribution of the industrial sector to GDP has increased from less than 10 percent of GDP in the late 1970s to more than 20 percent in 2002-2005.

With a per capita GDP that has remained very low over the years, between US$ 170 and 330, or less than a dollar per day, Uganda is one of the poorest countries in the world. The prevalence of low income and poverty in a large part of the populace is a major feature of the Ugandan economy, reflected in the low development in social indicators in terms of high infant mortality rate, high crude death rates, low life expectancy, and low secondary school enrollments (see Table 2.11). Uganda has been successful, however, in raising growth rates and reducing poverty. Real GDP growth has averaged 6.5 percent per annum since the country began to implement economic reforms in 1987. The incidence of poverty has declined from 56 percent to 44 percent of the population during the 1990s (Ssendaula, 2000). The total population of the country in 2004 was at 27.8 millions, growing at the annual percentage rate of 3.5, with more than 80 percent living in the rural areas.

Origins of the Economic Crisis in Uganda

Following its political independence in 1962 from the British government, Uganda was among the most vibrant economies in East Africa, with real GDP growing at an average rate of 4.8 percent; favorable terms of trade, and healthy state of public finances. When Idi Amini came to power after overthrowing President Obote's government in January 1971, the situation changed dramatically. This was the beginning of the deterioration of the Uganda's economy, experiencing domestic and external shocks, exacerbated by the absence of sound macroeconomic policies; collapse of the East African Community in 1977; oil price shocks of the 1973/74 and

1979/80; civil strife in the 1970s; economic war of 1972, which led to the expulsion of Asians and expropriation of their assets and the brief war with Tanzania in 1978/79. Most of the 1970s and 1980s saw the country suffering from severe macroeconomic imbalances, including high rates of inflation and balance of payments deficits (Kiiza et al., 2006; Ndikumana and Nannyonjo, 2007; Tumusiime-Mutebile, 2000).

During the period from 1971 to 1986, country's GDP shrank by 40 percent (Collier and Reinikka, 2001). In responding to the crisis, Uganda since 1987 has implemented economic reforms of macro-stabilization, structural adjustment and institutional reforms. Uganda has been labeled among the most successful reformers in sub-Saharan Africa (Holmgren et al., 2001; Tumusiime-Mutebile, 2000; Kiiza et al., 2006; Mackinnon and Reinikka, 2002; Ndikumana and Nannyonjo, 2007).

Economic reforms of one form or another have been underway in Uganda since early 1981 (the first-generation reforms), with the most radical reforms implemented since 1986 (the second-generation reforms). The first generation reforms focused on economic stabilization, economic openness and exchange rate liberalization. The second generation reforms involved adoption of structural adjustment programs, requiring the abolishment of state controls, liberalizing the economy, privatizing state-owned enterprises and abolishing subsidies on education and health (Kiiza et al., 2006; Tumusiine-Mutebile, 2000; Holmgren et al., 2001). Overall, both the first and second generation reforms resulted in the changes in trade policies, fiscal policies, as well as monetary and exchange rate policies. Four economic policy regimes can be distinguished in Uganda, namely the pre-crisis (1977-79), the crisis period (1980-85), and post-crisis period divided into two policy regimes-the first generation reform policy period (1987-91) and second generation economic reforms (1992-2005).

Economic Reforms over the period 1980-1985

The 1980-85 period marks the advent of home-grown structural adjustment programs implemented in Uganda. Like many other countries in the region, Uganda suffered severe macroeconomic imbalances for the most of the 1970s and 1980s. During this period the country experienced high rates of inflation; severe decline in real per capita GDP; and balance of payments deficits (Holmgren et al., 2001; Tumusiime-Mutebile, 2000; Kiiza et al., 2006).

By 1980, the need to rehabilitate the economy was inevitable. To restart growth, the government under Milton Obote put a high priority on re-establishing macroeconomic stability. However, given the level of development at the time, the country needed long-term finances from external sources. This led to the first stand-by agreement with the IMF in 1981. The critical goal of the program was to restore macroeconomic stability through the promotion of production in the export crop sector; reduction of government deficits; overcome the balance of payments disequilibria; and restore growth (Holmgren, 2001; Kiiza et al., 2006). This focused on policies to encourage mobilization of domestic resource and demand management to encourage economic growth through realignment of the value of the Ugandan shilling; providing price incentives; removing price controls; increasing interest rates; and improving economic management through fiscal and monetary measures (Holmgren et al., 2001; Kiiza et al., 2006). The major structural changes that featured in the first-generation economic reform are outlined in Table 2.12.

Despite a commitment by the Obote government to undertake pro-market reforms, there was little progress in achieving the goal. During this period economic performance deteriorated, with real GDP declining by 10 percent between 1984 and 1985; inflation went back to triple digits by 1985 as opposed to double digits attained in 1984; the export base was reduced to a single export crop, coffee, due to an overvaluation of the exchange rate. This was accompanied by the decline in the import volumes, reflecting the reduced capacity of the economy to finance imports (Holmgren et al., 2001; Kiiza et al., 2006).

The Ugandan government failed to improve the tax structure and tax collection. This was coupled with weak expenditure controls, due to growing and sustained military opposition; deterioration of the fiscal discipline in the period 1984-85 and accumulation of huge expenditure arrears, equivalent to 21 percent of total expenditure commitments during this period. Moreover, the monetary policies that were in place resulted in high inflation and rapid depreciation of the Ugandan shilling (Holmgren, 2001; Kiiza et al., 2006). In responding to fast depreciation of the shilling, the Ugandan government imposed restrictions on the floating exchange rates (Holmgren et al., 2001; Kasekende and Ssemwogere, 1994 cited by Kiiza et al., 2006). This development led to the violation of the monetary benchmarks that were agreed upon with the IMF. This led to the collapse of IMF-supported reform in 1984.

The national output recovered from a -2.7 percent growth rate between 1971 and 1980 to 1.7 percent over the period 1980 to 1983. Nonetheless, industrial production plummeted due to foreign exchange constraints and the poor state of infrastructure. Industrial production fell by 3.9 percent per annum between 1983/83 and 1985/86. Agricultural production also failed to respond positively because government incentives did not trickle down to producers, resulting in the abandonment of the production of major export crops such as cotton, tea and tobacco. Overall, GDP growth averaged -0.4 percent between 1983/84 and 1985/86 (Holmgren et al. 2001).

Economic Recovery Programs 1986-91

When Yoweri Kabuta Museveni took power from Militon Obote's government through a *coup d'état* in January 1986, the Ugandan economy and all state institutions had virtually collapsed. The main challenge to this government was to rebuild the economy and restore a social structure torn apart by decades of violent conflict under dictatorial regimes; which was characterized by a thin tax base; economic mismanagement; weak institutional structures; corrupt society and decayed bureaucracy (Ndikumana and Nannyonjo, 2007; Kiiza et al., 2006; Kayizzi-Mugerwa, 2002). In order to address these macroeconomic problems, restore economic growth,

and revive its relationship with the IFIs and other multilateral and bilateral donors, the Ugandan government embarked on the second-generation economic recovery programs (ERP, 1987-1991).

In 1985-86, the Ugandan economy suffered from serious policy reversal, culminating into tightened foreign exchange constraints; worsened budgetary discipline; and dislocation of the institutional framework. During this period the economy was in deep crisis: inflation rose to 296 percent in 1986; GDP growth rate dropped from 11.7 percent in 1982 to -1.5 percent in 1986, external debt was extremely very high, and the balance of payments had worsened (Kiiza et al., 2006; Holmgren et al., 2001).

Despite deepened economic crisis in the mid-1980s, the new movement government under Mseveni opted for state-interventionist policies, with the belief that pro-market reforms were instruments of western imperialism. The government embraced the state-guided development strategy by implementing foreign exchange controls, state ownership of enterprises and price controls (Kiiza et al., 2006). The donor communities refused to extend credit to the new Ugandan government. SAP conditionalities required the government to abolish state controls; liberalize the economy; privatize parastatals (state-owned enterprises); and abolish subsidies on education and health (Kiiza et al., 2006; Holmgren et al., 2001).

The economy suffered from serious policy reversal, foreign exchange constraints tightened, the budgetary discipline deteriorated, the institutional framework was further disrupted, inflation rate soared, and GDP growth rate declined (Holmgren et al., 2001; Kiiza et al., 2006). In trying to address the situation, the new government sought assistance in designing and implementing an Economic Recovery Program (ERP) from a team of economists both local and foreign, which advocated for radical reforms.

In May 1987, the government embarked on IFI-supported reforms. The main objectives of the reform package were to promote economic growth; reduce inflation by tightening budgetary and monetary policies; reduce balance of payments deficits; strengthen institutional framework; generate surplus foreign reserves; and rehabilitate major sectors of the economy

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(Holmgren et al., 2001; Kiiza et al., 2006; Tumusiine-Mutebile, 2000). The ERP policy packages are as summarized in Table 2.12.

Over the period 1987-91, the economy experienced excessive growth in domestic credit, emanating from weaknesses in monitoring the program and failure to take appropriate mitigation measures when problems emerged. During this period the government monetized the budget deficit averaging at 10.2 percent of GDP in 1991-92 as opposed to 3.5 percent in the previous years. Public expenditure increased from 16 percent in 1990-91 to 23 percent in 1991-92, resulting in the rise of inflation rates to 58 percent by March 1992, hence the violation of the IFIs' benchmarks in the monetary program. Donors delayed the disbursement of funds in 1991 in lieu of requiring the Ugandan government to implement economic reforms such as foreign exchange auction, which led to a fiscal crisis (Holmgren et al. 2001).

Economic Reforms 1992-2005

Between 1992 and 2005 the government implemented wide-ranging policies intended to eliminate structural bottlenecks that constrained progress in economic stabilization. This was meant to address the problems that emerged during the period 1987-91. The program included institutional and public management reforms. During this period, Uganda entered into a period of sustained reforms. Following the restoration of fiscal imbalances, a three-year ESAF program was agreed with the IMF in 1994. The program focused on structural reforms, fiscal objectives and reserves accumulation (Holmgren et al., 2001; Kiiza et al., 2006).

Although President Museveni's government was strongly committed to policy reforms, the first and second generation reforms had not effectively addressed the economic and social problems of the majority of Ugandans. As a result, the Ugandan government embarked on a pro-poor growth package reforms. The Ugandan government formulated the Poverty Eradication Action Plan (PEAP) in 1997 under the World Bank PRSPs and the IMF Poverty Reduction and Growth Facility (IPRGF) as a response to poverty problems (Antingi-Ego, 2006; Williamson,

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2006; Kiiza et al., 2006; Miovic, 2004). The policy packages during this period are presented in Table 2.13.

2.4 Conclusions

It is apparent from this chapter that policy reforms implemented in East African countries had broadly similar frameworks and objectives. The chapter reveals that foreign aid has played a significant role in the implementation of economic reforms in the three countries. Aid was used by the donor community as leverage for implementing economic reforms.

For the three countries, donors have relatively increased the amount of aid to Uganda and Tanzania in the form of General Budget Support (Levin, 1999; Danielson and Eriksson, 2001; Holmgren, et al., 2001; Bigsten et al., 2001; McGillivray and Morrissey, 2004; Williamson, 2006). Much of the aid to Kenya is no longer paid as budget support; instead it is granted directed to NGOs such as churches, citizen's associations, women's group, the private business sectors and individuals (O'Brien and Ryan, 2001; Were et al., 2006). This corroborates with the figures in Tables 2.1, 2.6 and 2.10, where the ratio of ODA to GDP is higher in Uganda and Tanzania than in Kenya. This is probably because Uganda and Tanzania were relatively committed to donor policy agendas as compared to Kenya.

The implementation process in the three countries, however, has faced the resistance from within the government and civil society, thus contributing to delays and reversals of policy reforms. In part, this was due to the fact that policy reform was considered to be the agenda of donors and lacked local ownership. Governments implemented reforms in order to please donors when they were desperate in need of funds. This had implications for the effectiveness and sustainability of economic reforms in these countries.

Uganda has been labeled more liberal, and its commitment to policy reform has been strong as compared to its neighbor-counterparts Tanzania and Kenya. This is reflected by the measure of trade restriction-the average applied tariff rate in Tables 2.1, 2.6 and 2.10. It is evident

from the tables that Uganda reduced its tariff rates significantly as opposed to Tanzania and Kenya. Among the three countries, Uganda showed the most sustained commitment to economic reforms during President Museveni's regime, although at the beginning there were delays in the implementation process. In Tanzania, in contrast, commitment to reforms came late, when President Mkapa took control of the government between 1996 and 2005, at the time when reforms had already gone off-track.

Economic reform has been conducive to economic growth in the three countries. This is evident when looking at the trends in economic growth depicted in Tables 2.1, 2.6 and 2.10 for Tanzania, Kenya and Uganda, respectively. It can be observed that Uganda's economic growth picked when Museveni took power. Similarly, the Tanzanian economy started to show signs of sustained growth in 1996, when Mkapa took over from president Mwinyi. Kenya's economic growth, on the other hand, has been stagnant over the period under evaluation. The three East African countries have also successfully reduced the levels of inflation down to single-digit rates. Despite commitment to reforms, the budget deficits and trade imbalances have remained high (see Table 2.1, 2.6 and 2.10). Furthermore, institutional reforms have not yet been fully implemented in the three countries, although these are considered to be crucial for an effective implementation of policy reforms. Political economy issues such as corruption, governance, legal framework enforcement and political stability need to be addressed in order to enhance the effectiveness of policy reforms.

Table 2.1:   Selected Macroeconomic Indicators for Tanzania, 1970-2005

Year	PCY	YG	INF	TBL	PDF	TRD	AGR	SEV	IND	ODA	LON	GRT	ATF
1970	119	3	3.49	-2.50	-6.12	35.02	31	29.50	20	3.35	50.00	50.00	NA
1971	124	4.2	4.78	-5.67	-3.76	37.08	30	29.20	22	3.73	53.08	46.92	NA
1972	136	6.7	7.64	-2.63	-4.09	36.72	30	28.70	22	3.26	31.00	69.00	NA
1973	157	3.1	10.40	-4.40	-3.88	33.89	30	29.40	22	4.42	37.94	62.06	NA
1974	182	2.5	19.60	-11.45	-8.70	35.69	29	31.40	20	5.87	40.45	59.55	NA
1975	203	5.9	26.06	-11.30	-4.21	32.33	31	31.40	20	9.21	38.03	61.97	NA
1976	213	6.4	6.86	-2.80	-5.50	28.19	33	31.40	26	7.74	28.94	71.06	NA
1977	247	0.4	7.7	-4.85	-3.59	25.87	34	31.80	25	8.24	38.45	61.55	NA
1978	286	1.2	14.3	-13.08	-11.72	26.80	35	33.90	26	11.58	22.36	77.64	NA
1979	293	3.3	12.5	-10.44	-11.25	24.86	36	34.70	23	12.10	25.12	74.88	NA
1980	330	3	27.8	-12.03	-12.12	24.92	35	34.10	22	13.17	20.05	79.95	NA
1981	368	-0.5	26.1	-8.34	-13.41	20.72	36	35.40	20	9.87	28.87	71.13	NA
1982	377	0.6	27.6	-8.91	-9.10	14.65	40	35.30	17	9.07	29.55	70.45	23.9
1983	368	-2.4	29.7	-4.90	-8.08	13.11	42	36.10	15	7.78	28.75	71.25	NA
1984	327	3.4	35.4	-4.27	-9.16	16.10	43	35.60	15	7.95	24.52	75.48	NA
1985	349	4.6	32.3	-8.12	-7.21	14.06	42	35.10	15	6.28	17.83	82.17	NA
1986	238	1.9	32.6	-10.79	-13.33	19.83	44	34.40	16	13.97	16.35	83.65	32.1
1987	162	4.9	29.8	-17.19	-11.26	25.31	42	34.10	17	24.00	28.14	71.86	NA
1988	183	4.1	31.8	-12.09	-8.02	36.61	50	33.80	13	23.13	22.64	77.36	29.8
1989	189	4	30.3	-13.69	-6.74	41.27	48	33.70	18	19.42	21.77	78.23	28.2
1990	179	4.5	35.8	-22.58	-7.87	47.57	44	36.39	18	26.49	29.43	70.57	29.7
1991	195	5.7	38.7	-23.33	-7.74	46.56	47	34.97	17	22.72	24.70	75.30	NA
1992	168	8.1	21.8	-23.76	-4.92	48.29	46	35.80	18	29.95	34.70	65.30	33.0
1993	150	1.2	24	-25.20	-3.70	59.65	45	36.32	17	28.51	18.62	81.38	27.5
1994	154	1.6	35.5	-21.78	-2.17	64.83	43	39.88	17	21.94	24.47	75.53	27.5
1995	174	3.6	27.4	-19.15	1.88	65.05	45	38.36	17	17.12	23.50	76.50	24.5
1996	210	4.6	21	-6.56	1.20	58.07	46	37.75	17	14.00	27.67	72.33	24.4
1997	241	3.5	16.1	-5.85	-2.50	43.99	45	38.92	17	11.78	30.41	69.59	22.3
1998	258	3.7	12.9	-7.03	-1.23	42.80	44	39.81	17	12.78	23.71	76.29	21.3
1999	261	3.5	7.8	-9.52	-1.72	39.69	44	39.41	17	12.11	32.70	67.30	18.0
2000	269	5.1	6	-7.40	-1.22	37.93	44	39.22	17	12.25	21.71	78.29	17.9
2001	274	6.2	5.2	-7.56	-0.52	40.98	44	39.39	17	14.15	16.35	83.65	17.9
2002	277	7.2	4.5	-6.21	-1.59	41.65	44	39.17	18	13.65	18.11	81.89	15.2
2003	287	7.1	3.5	-7.82	-3.38	45.64	44	38.44	18	17.53	35.96	64.04	14.3
2004	310	6.7	4.2	-4.31	-5.27	45.57	45	37.12	18	17.14	23.80	76.20	13.5
2005	337	7	4.3	NA	NA	NA	NA	37.65	NA	12.64	26.47	73.53	12.2

Note: PCY: Per capita GDP; YG: Annual GDP growth rate; INF: Inflation rate; TBL: Trade balance (% of GDP); PDF: Public Budget deficit (% of GDP); TRD: Trade volume (export + import as % of GDP); AGR: share of agriculture sector in the economy (% GDP); SEV: share of service sector in the economy (% GDP), IND: share of industry sector in the economy (% GDP); ODA: Share of official development assistance in GDP; LON: share of loans in total ODA; GRT: share of grants in total ODA; ATF: the average applied tariff rate.

Table 2.2:   Selected Social Indicators for Tanzania

YEAR	ALT	INFM	CRD	CRB	LFE	DYC	SEP	SES
1980	51.00	115.80	13.80	46.50	53.70	2197.00	92.50	3.30
1985	44.00	110.70	12.90	45.30	54.90	2220.00	75.10	3.30
1987	41.20	109.30	12.80	45.00	54.90	2198.00	71.10	3.80
1988	39.80	108.80	13.00	44.40	64.40	1806.00	69.40	4.20
1989	38.40	108.40	13.20	43.90	53.90	2189.00	69.40	4.50
1990	37.10	108.00	13.30	43.40	53.40	2066.00	69.70	4.90
1991	35.80	107.50	13.50	42.90	52.90	2100.00	69.90	5.30
1992	34.60	107.10	13.70	42.40	52.40	1983.00	69.00	5.30
1993	33.30	106.60	14.00	41.90	51.60	1950.00	68.90	5.30
1994	32.10	106.00	14.40	41.50	50.70	1912.00	67.50	5.30
1995	30.80	105.50	14.80	41.10	49.90	1884.00	66.80	5.40
1996	29.70	105.00	15.20	40.60	49.00	1898.00	66.10	5.30
1997	28.50	104.50	15.60	40.20	48.20	1846.00	66.50	5.60
1998	27.30	104.50	15.80	39.80	47.70	1934.00	62.20	6.00
1999	26.20	104.50	16.00	39.30	47.30	1946.00	64.00	5.80
2000	25.00	104.50	16.20	38.90	46.90	1938.00	66.00	36.00
2001	24.00	104.50	16.50	38.50	46.40	1949.00	72.00	NA
2002	23.00	104.40	16.70	38.10	46.00	1955.00	87.00	NA
2003	21.90	104.30	16.60	37.50	46.10	1955.00	95.00	NA
2004	20.90	104.20	16.50	37.00	46.20	1963.00	101.00	NA
2005	19.90	104.20	16.40	36.40	46.40	NA	106.00	NA

Notes: ALT: Total adult illiteracy rate (as % of 15-64 age group); INFM: Infant mortality rate (per 1,000 live births); CRD: Crude death rate (per 1,000 people); CRB: Crude birth rate (per 1,000 mothers); LFE: Life expectancy at birth (years); DYC: Daily calorie supply (per capita); SEP: Primary school enrolment ratio (% gross); SES: Secondary school enrolment ratio (% gross).

Table 2.3:   Home-Grown Policy Reforms in Tanzania, 1980-1985

Policy Reform Areas	Timing	Policy Measures	Policy Reform Objectives
Policy Reforms Under NESP, 1981-82			
Trade Reform	1981	Export Taxes abolished	Bolster agricultural exports
Exchange rate reform	1981-82	Domestic Currency overvalued	Improve country's competitiveness in exports
Fiscal Reform: -Expenditure Policies	1981-82	Tight control on public expenditure	To reduce fiscal deficits
-Tax Policies	1979-81	Excise tax abolished	To increase tax revenue
Own Structural Policy Reform Packages, 1982-1985			
Trade Reforms	1984-85	Partial import liberalization	to address the foreign exchange constraint through lifting a variety of import controls and introduction of "own-funds" imports
	1984-85	Export-retention scheme introduced	exporters were allowed to retain a share of their proceeds, meant to promote exports
	1984-85	Own-Fund Imports Scheme introduced	To allow imports purchased with foreign currency deposited abroad, meant to address foreign exchange constraints
Exchange rate liberalization	1984	partial devaluation of the domestic currency	To improve the balance of payments; To improve the country's competitiveness
Fiscal Reforms -Expenditure policies	1985	cost sharing scheme introduced	to finance basic social services; whereby parents were required to contribute to secondary education, and development levy was re-introduced for all those who were eligible (i.e. 18 years old and above)
Tax Policies	1983	Income tax amended	
	1985	import duties and sales tax were reduced	To increase tax revenue

Table 2.4:   ERP Policy Reforms in Tanzania, 1986-89

Policy Reform Package	Timing	Policy Measures	Policy Objectives
Trade Reform	1988-90	-deregulation of imports and local trade	-promote the country's competitiveness in exports
		-removal of restrictions on trade	-to improve the balance of payments -to reduce protection
	1988-90	Rationalize tariff systems (tariff rates reduced)	To promote export growth so as to address trade imbalances
	1988-90	open general license (OGL) system was introduced	to ease access to import licenses and improve country's competitiveness in order to give impetus to export growth
	1987	producer prices for export crops raised	To increase agricultural output and boost export growth
Exchange rate reform	1986-87	devaluation of the exchange rate	to eliminate exchange rate overvaluation and to maintain equilibrium rate
	1989	Nominal exchange rate adjustment	To increase tax revenue generation from export duties
	1988-90	own-fund and export retention schemes simplified and widened in scope	to allow easier access to foreign exchange for importers
Fiscal Policy: a. Public Sector Reform	1985	Retrenchment of civil servant	Cut spending on wage and salaries
	1988-89	Redirected expenditure to priority areas- repair transport infrastructure	To allocate recurrent spending to activities promoting both output of food and exportable agricultural crops
b. Expenditure management	1989	Restrained external debt burden	To reduce debt monetization, bank borrowing and fiscal deficit
		Reduced defense spending	To limit public spending growth to 15 percent per annum
	1987	Tax institute established	to train tax administrators so as to improve tax administration and tax collection
c. Tax Reform	1988-89	-Reduction and rationalization of domestic sales taxes	To eliminate tax distortions between sectors To promote economic growth and maintain high levels of revenue generation
		-sales taxes converted to *ad-valorem* taxes	
		-income tax reduced	

Table 2.5:   Second Generation Policy Reform in Tanzania

Policy Reform Areas	Timing	Policy Measures	Policy Reform Objectives
Policy Reforms under ESAP, 1988-92			
Trade Reform	1988-90	Tariff levels reduced Own-Funds import continued	To promote export, increase tax revenue and to address foreign exchange constraints
	1990	Liberalization of Agricultural marketing	To boost agricultural exports
	1990	Rationalized and reduced import duties	to address the foreign exchange constraint
Exchange rate	1989-90	Export Retention scheme abolished and OGL expanded	Improve access to foreign exchange
Fiscal Reform: Expenditure	1990-91	restructuring and privatization of public enterprises	Reduce the fiscal deficits, improve the efficiency of public enterprises and limit borrowing
Tax reform	1989	-Reduction and rationalization of domestic sales taxes	to broaden the tax base
		-Excise duty introduced -Tax commission established	To strengthen the tax system and mobilize domestic revenue
Successful or Second Recovery Policy Reforms in Tanzania, 1996-2005			
Trade Reforms	1997-98	Tariff Band reduced to 5	Promote exports and enhance revenue collection
	1997/98	COMESA tariff suspended	
	1998	COMESA tariff reintroduced	To increase tax revenue
	1998-99	Export duty on traditional export eliminated and all export restriction removed	To promote exports and increase tax revenue from exports
	2000	Pull out of COMESA	
Fiscal reforms: Expenditure	1996	Cash Budget introduced	To create a prudent fiscal management so as to ensure that the cash budget spent up to the equivalent of estimated revenue and grants
		Integrated financial management system introduced	To foster coordination and collaboration among various ministries and the treasury, monitor expenditure and enhance transparency in budget management
Tax reform	1996	Tanzania Revenue Authority established	To enhance revenue and address the problem of massive tax exemption and evasion
	1996	Value-added Tax introduced	Broaden the tax base and minimize revenue leakage
	1996-97	Sources of revenue differential on imports tax rate between Mainland Tanzania and Zanzibar eliminated	To limit discretionary exemptions

Table 2.6: Selected Macroeconomic Indicators for Kenya, 1970-2005

Year	PCY	YG	INF	TBL	PDF	TRD	AGR	SEV	IND	ODA	LON	GRT	ATF
1970	291.02	-7.91	2.19	-2.93	-6.24	60.49	33.29	46.87	19.83	2.79	50.40	49.60	NA
1971	343.18	17.93	3.78	-3.71	-10.05	63.83	31.38	48.25	20.38	2.98	48.54	51.46	NA
1972	387.63	12.95	5.83	-3.93	-6.42	55.31	35.19	44.39	20.41	4.04	22.45	77.55	NA
1973	395.83	2.12	9.28	-4.56	-4.23	56.06	35.46	43.80	20.74	3.29	49.65	50.35	NA
1974	397.10	0.32	17.81	-2.87	-10.76	74.57	35.36	43.93	20.70	3.33	43.74	56.26	NA
1975	386.11	-2.77	19.12	-4.82	-8.02	64.34	34.15	45.60	20.25	3.22	36.75	63.25	NA
1976	380.12	-1.55	11.45	-5.14	-3.28	64.21	37.90	43.49	18.60	3.74	38.78	61.22	NA
1977	400.94	5.48	14.82	-3.26	-1.23	66.55	41.95	40.06	17.99	3.06	36.96	63.04	NA
1978	413.00	3.01	16.93	-4.09	-9.93	67.62	36.92	43.00	20.07	4.19	39.90	60.10	NA
1979	428.09	3.65	7.98	-5.87	-7.01	57.36	34.60	45.55	19.85	4.68	41.27	58.73	NA
1980	435.24	1.67	13.86	-4.42	-12.99	65.42	32.59	46.56	20.85	4.48	40.13	59.87	NA
1981	434.78	-0.11	11.60	0.00	-10.05	64.28	32.50	47.22	20.28	5.35	36.09	63.91	NA
1982	424.79	-2.30	20.67	-0.26	-7.25	58.22	33.36	46.70	19.94	6.00	48.55	51.45	40.3
1983	414.28	-2.47	11.40	1.29	-4.89	54.16	34.22	46.41	19.37	5.39	34.28	65.72	NA
1984	405.96	-2.01	10.28	-1.08	-5.51	58.80	33.97	47.12	18.91	5.33	34.73	65.27	41.7
1985	407.98	0.50	13.01	-1.80	-5.86	55.45	32.59	48.33	19.07	5.80	33.00	67.00	NA
1986	421.59	3.33	2.53	-5.72	-4.59	55.74	33.04	48.38	18.58	5.19	28.60	71.40	39.2
1987	430.90	2.21	8.64	-3.11	-7.51	47.70	31.55	49.96	18.49	5.86	34.29	65.71	39.2
1988	441.88	2.55	12.26	-3.48	-8.27	49.98	29.89	50.50	19.61	8.17	37.43	62.57	41.7
1989	447.06	1.17	13.79	-3.54	-10.92	53.16	30.19	50.78	19.03	10.24	50.26	49.74	37.5
1990	450.58	0.79	17.78	-3.49	-10.23	57.02	29.52	51.44	19.04	15.68	31.83	68.17	43.7
1991	442.53	-1.79	20.08	-4.95	-7.60	55.41	28.14	52.18	19.67	10.52	41.87	58.13	34.0
1992	425.43	-3.86	27.33	-1.24	-7.28	52.93	28.74	52.88	18.38	8.95	28.68	71.32	33.6
1993	414.22	-2.63	45.98	-2.25	-6.62	72.86	31.52	51.58	16.89	13.53	43.33	56.67	31.9
1994	413.04	-0.29	28.81	-3.89	-5.75	71.27	33.32	49.43	17.25	8.52	35.32	64.68	32.1
1995	419.60	1.59	1.55	-2.35	-9.55	67.79	32.35	52.85	17.46	7.18	45.26	54.74	22.0
1996	425.79	1.48	8.86	-0.58	-7.31	53.86	30.74	50.93	18.33	6.22	48.12	51.88	13.5
1997	417.35	-1.98	11.36	-0.57	-9.12	51.43	30.91	51.32	17.77	4.55	35.50	64.50	19.0
1998	420.97	0.87	6.72	-1.06	-9.00	46.68	31.23	51.27	17.50	4.06	38.38	61.62	19.9
1999	420.82	-0.03	5.74	0.53	-9.24	46.52	32.38	50.81	16.80	3.78	30.51	69.49	18.0
2000	414.00	-1.62	9.98	0.80	-11.70	51.16	32.36	50.72	16.92	5.25	48.90	51.10	18.1
2001	422.84	2.14	5.74	-2.94	-13.89	53.37	30.65	51.45	16.54	4.67	33.26	66.74	19.2
2002	415.56	-1.72	1.96	-4.49	-8.51	53.23	28.27	52.67	16.85	4.23	28.06	71.94	16.8
2003	418.00	0.59	9.82	-2.45	8.64	52.19	27.79	53.04	16.78	4.76	29.52	70.48	15.2
2004	426.56	2.05	11.62	-5.73	-11.76	57.94	26.75	54.17	17.19	4.93	23.09	76.91	16.3
2005	428.41	0.43	10.31	-3.55	NA	55.56	27.36	54.44	17.78	4.90	22.58	77.42	12.1

Note: PCY: Per capita GDP; YG: Annual GDP growth rate; INF: Inflation rate; TBL: Trade balance (% of GDP); PDF: Public Budget deficit (% of GDP); TRD: Trade volume (export + import as % of GDP); AGR: share of agriculture sector in the economy (% GDP); SEV: share of service sector in the economy (% GDP), IND: share of industry sector in the economy (% GDP); ODA: Share of official development assistance in GDP; LON: share of loans in total ODA; GRT: share of grants in total ODA; ATF: the average applied tariff rate

Table 2.7:   **Selected Social Indicators for Kenya**

YEAR	ALT	INFM	CRD	CRB	LFE	DYC	SEP	SES
1980	43.80	73.70	11.40	48.90	57.70	2255.00	115.20	19.60
1985	36.50	67.90	10.40	46.40	58.90	2266.00	99.00	21.30
1987	33.60	67.10	10.20	45.00	59.00	2147.00	98.20	23.30
1988	32.20	66.20	10.20	43.70	58.60	2089.00	96.80	23.00
1989	30.70	65.40	10.20	42.40	58.20	2090.00	98.20	26.00
1990	29.20	64.60	10.20	41.10	57.80	1984.00	95.00	24.10
1991	28.00	63.80	10.30	39.80	57.50	1987.00	93.00	27.90
1992	26.70	63.00	10.30	38.50	57.10	1973.00	91.70	27.30
1993	25.50	63.40	10.90	38.30	55.80	1906.00	90.50	25.70
1994	24.20	63.80	11.50	38.10	54.40	2064.00	86.90	24.80
1995	23.00	64.30	12.10	37.90	53.10	2089.00	84.90	24.40
1996	21.90	64.70	12.80	37.70	51.80	2033.00	84.20	23.80
1997	20.80	65.20	13.40	37.50	50.50	2054.00	86.00	32.70
1998	19.70	65.70	13.80	37.70	49.80	2086.00	90.70	30.00
1999	18.70	66.20	14.20	38.00	49.10	2132.00	93.00	38.00
2000	17.60	66.70	14.70	38.20	48.40	2147.00	98.00	39.00
2001	16.70	67.20	15.10	38.50	47.70	2158.00	96.00	32.00
2002	15.80	67.80	15.50	38.80	47.00	2142.00	94.00	41.00
2003	14.90	66.80	15.20	38.90	47.70	2166.00	111.00	44.00
2004	14.00	65.80	14.80	39.10	48.30	2149.00	111.00	48.00
2005	13.10	64.80	14.50	39.20	49.00	NA	NA	NA

Notes: ALT: Total adult illiteracy rate (as % of 15-64 age group); INFM: Infant mortality rate (per 1,000 live births); CRD: Crude death rate (per 1,000 people); CRB: Crude birth rate (per 1,000 mothers); LFE: Life expectancy at birth (years); DYC: Daily calorie supply (per capita); SEP: Primary school enrolment ratio (% gross); SES: Secondary school enrolment ratio (% gross).

Table 2.8: **Economic Policy Reforms in Kenya, 1980-1991**

Policy Reform Areas	Timing	Policy Measures	Policy Reform Objectives
		Home-Grown Policy Reforms, 1980-86	
Trade Policies	1983	elimination, rationalization and replacement of quantitative restrictions with equivalent tariffs	To address foreign exchange constraints and promote exports
	1980/81	Import controls relaxed	to address the foreign exchange constraint
	1982	Import licenses introduced	to address the foreign exchange constraint
	1984	export compensation scheme re-introduced	to promote exports and increase tax revenue from exports
		SAP Policy Measures, 1985-91	
Trade policies	1990	Tariff rates reduced and rationalized	Promote export growth and enhance revenue collection
	1991-93	Export promotion strategy established	
	1993	Export processing zone established	
	1993	Export compensation scheme reintroduced	
	1993	export compensation abolished Manufacturing under bond established	To give impetus to export growth To allow customs authorities to waive import duties on imported inputs used in the production of export goods
	1993	Full import liberalization	To promote export growth
	Late 1993	Full foreign exchange liberalization	To address foreign exchange constraints and give impetus to export growth
Fiscal Reform -Expenditure Policies	1989	Cost Sharing introduced	To reduce fiscal deficits
	1991	Parastatal Restructuring	To promote efficiency and productivity of public enterprises
-Tax policies	1990	A duty/VAT import exemption introduced	To increase tax revenue
	1991	Tax exemption abolished	To broaden the tax base and increase tax revenue

Table 2.9:   Second Generation Economic Reforms in Kenya, 1991-2005

Policy Reform Area	Timing	Policy Measure	Policy Reform Objectives
Third Phase Economic Reforms, 1991-96			
Trade Policies	1992-95	Average tariff rate reduced	
	1992	Retention scheme introduced	To give impetus to export growth
	March 1993	Import licensing reinstated	
	February 1994	Capital Controls relaxed	
	1993-94	Current accounts and capital account restrictions lifted	
	March 1993	Retention accounts suspended	
	May 1993	Retention accounts reintroduced	To reduce current account deficits (trade imbalance)
Exchange rate Policies	1991	Foreign Exchange Market liberalized	
	February1993	Foreign exchange allocation abandoned	
	March 1993	Foreign Exchange controls reinstated	
	May 1993	Import licensing abolished	To address foreign exchange constraints and promote export growth
	October 1993	Official exchange rate abolished-floating exchange rate introduced	
	1995	-Foreign exchange restrictions eliminated -Foreign exchange bureau de change permitted -Exchange Control Act abolished	
Fiscal Policies -Expenditure policies	1993/94	Retrenchment of civil servants	
	1990-95	Restructuring and privatization of public enterprises	To reduce fiscal deficits
	1992	Use-fees reintroduced	
Tax policies	1993	Export taxes abolished	Promote export growth
Policy Reforms during the period 1997-2005			
Trade Policies	1997-98	-Tariff bands reduced to 3 -Tariff rate reduced	To promote export growth and increase tax revenue from export taxes
Fiscal Policies -Expenditure Policies	2000-01	Suspended duties abolished -Restructuring and privatization of public enterprises	
	1998-2000	-retrenchment of civil servants -reduce the size of the government -Medium term expenditure framework introduced	To move revenue and expenditure more closely into balance and achieve fiscal discipline (reduce fiscal deficits)

Table 2.10:   Selected Macroeconomic Indicators for Uganda, 1977-2005

Year	PCY	YG	TBL	PDF	INF	TRD	AGR	SEV	IND	ODA	LON	GRT	ATF
1977	232	1.4	-2.63	1.44	NA	16.95	73.97	18.99	7.04	0.85	40.41	59.59	NA
1978	231	-4	-0.25	-1.40	NA	32.52	74.27	20.57	5.16	1.36	54.96	45.04	NA
1979	212	-12.5	-3.54	1.87	NA	36.93	65.57	30.27	4.16	2.25	10.75	89.25	NA
1980	218	-2.5	-2.71	-6.59	NA	45.48	72.03	23.48	4.49	4.17	28.15	71.85	NA
1981	241	3.9	-3.41	-12.62	108.74	38.14	58.43	34.83	6.74	5.01	14.25	85.75	NA
1982	267	7.8	-3.45	-6.42	49.27	25.90	53.73	34.82	11.44	4.08	42.51	57.49	NA
1983	286	6.3	-2.06	-2.85	24.05	22.30	57.57	32.98	9.44	4.30	35.20	64.80	NA
1984	274	-4.6	-2.12	1.89	42.73	27.02	54.82	34.32	10.86	4.32	41.97	58.03	NA
1985	272	-0.3	-2.37	-0.36	157.66	28.75	52.74	37.38	9.88	4.68	55.61	44.39	NA
1986	298	1.5	-2.56	-4.43	160.98	28.05	56.61	33.16	10.23	4.54	36.99	63.01	30.0
1987	322	6.4	-2.54	-9.32	200.03	26.29	56.75	33.17	10.08	6.10	51.16	48.84	19.9
1988	354	7.8	-0.89	-7.51	196.12	25.35	56.71	33.10	10.19	7.13	38.33	61.67	NA
1989	301	6.9	-1.25	-8.96	61.44	26.05	56.79	32.51	10.70	10.21	50.93	49.07	NA
1990	206	6.2	-3.70	-10.80	33.12	26.61	56.58	32.36	11.06	18.84	50.09	49.91	NA
1991	161	5.5	-2.58	-12.00	28.07	29.40	52.82	34.82	12.36	23.23	39.27	60.73	NA
1992	167	4.6	-7.31	-11.24	52.44	33.05	51.12	35.67	13.21	23.17	38.44	61.56	NA
1993	167	7.1	-2.89	-10.01	6.00	28.24	51.54	35.36	13.09	19.19	39.65	60.35	NA
1994	255	10.8	-3.35	-8.65	10.00	27.84	49.92	36.21	13.87	15.41	44.87	55.13	17.1
1995	289	9.4	-6.47	-8.59	9.00	32.62	49.39	36.32	14.29	14.53	37.90	62.10	16.8
1996	285	6.2	-7.40	-13.16	7.00	35.39	45.14	38.68	16.18	12.09	37.24	62.76	12.8
1997	297	5.5	-6.10	-8.05	7.00	34.16	41.98	40.46	17.55	12.71	41.37	58.63	13.2
1998	277	9.7	-5.66	-11.55	6.40	30.04	42.07	39.85	18.08	14.47	27.29	72.71	10.0
1999	255	6.5	-5.75	-11.42	6.00	36.51	38.40	41.70	19.90	11.81	29.05	70.95	10.4
2000	236	4.4	-8.88	-12.88	2.80	34.23	37.34	42.36	20.30	16.16	26.18	73.82	8.2
2001	230	6.4	-10.55	-13.65	3.50	36.40	36.38	43.38	20.24	15.91	38.56	61.44	8.0
2002	232	4.7	-12.16	-14.84	4.20	38.49	30.96	47.48	21.56	13.85	18.10	81.90	7.8
2003	240	6.3	-10.57	-14.39	8.70	39.00	32.35	46.45	21.20	16.91	31.43	68.57	7.3
2004	281	5.7	-9.70	-14.12	3.70	41.21	32.17	46.64	21.19	17.88	12.56	87.44	6.9
2005	316	5.6	-7.79	-13.08	8.15	42.33	33.51	42.53	20.93	14.32	18.08	81.92	12.3

Note: PCY: Per capita GDP; YG: Annual GDP growth rate; INF: Inflation rate; TBL: Trade balance (% of GDP); PDF: Public Budget deficit (% of GDP); TRD: Trade volume (export + import as % of GDP); AGR: share of agriculture sector in the economy (% GDP); SEV: share of service sector in the economy (% GDP), IND: share of industry sector in the economy (% GDP); ODA: Share of official development assistance in GDP; LON: share of loans in total ODA; GRT: share of grants in total ODA; ATF: the average applied tariff rate

Table 2.11:   Selected Social Indicators for Uganda

YEAR	ALT	INF	CRD	CRB	LFE	DYC	SEP	SES
1980	54.10	106.20	16.00	49.70	50.10	2061.00	49.50	5.00
1985	49.00	102.20	16.30	49.90	49.20	2099.00	73.20	10.00
1987	46.90	98.90	16.40	50.00	48.70	2157.00	79.70	13.20
1988	45.90	97.20	16.80	50.00	47.70	2223.00	84.00	13.60
1989	44.90	95.40	17.30	49.90	46.70	2346.00	79.40	13.20
1990	43.90	93.70	17.80	49.90	45.70	2321.00	71.00	13.20
1991	42.70	92.00	18.30	49.80	44.60	2276.00	75.00	12.10
1992	41.60	90.00	18.70	49.80	43.60	2226.00	74.00	11.80
1993	40.50	89.40	18.70	49.70	43.40	2260.00	74.00	11.40
1994	39.30	88.40	18.70	49.70	43.20	2258.00	73.00	11.70
1995	38.20	87.50	18.80	49.70	43.10	2271.00	74.00	12.00
1996	37.20	86.60	18.80	49.60	42.90	2198.00	76.00	13.60
1997	36.10	85.70	18.80	49.60	42.70	2191.00	128.00	14.00
1998	35.10	84.80	18.20	49.70	43.50	2282.00	143.00	10.00
1999	34.00	83.90	17.70	49.80	44.30	2300.00	126.00	10.00
2000	33.00	83.00	17.20	49.90	45.10	2327.00	127.00	16.00
2001	32.10	82.10	16.60	50.10	46.00	2346.00	130.00	16.00
2002	31.20	81.20	16.10	50.20	46.80	2388.00	134.00	19.00
2003	30.20	80.30	15.60	50.30	47.90	2337.00	134.00	19.00
2004	29.30	79.40	15.10	50.50	48.90	2348.00	125.00	19.00
2005	28.40	78.40	14.50	50.70	50.00	NA	118.00	16.00

Notes: ALT: Total adult illiteracy rate (as % of 15-64 age group); INFM: Infant mortality rate (per 1,000 live births); CRD: Crude death rate (per 1,000 people); CRB: Crude birth rate (per 1,000 mothers); LFE: Life expectancy at birth (years); DYC: Daily calorie supply (per capita); SEP: Primary school enrolment ratio (% gross); SES: Secondary school enrolment ratio (% gross).

Table 2.12: Uganda's Policy Reforms Over the Period 1980-1991

Policy Reform Area	Timing	Policy Measures	Policy Reform Objectives
Home-Grown Policy Reforms over the period 1980-85			
Trade Policies	1981-84	State controls on products and factor prices abolished	Improve country's competitiveness in export crops so as to restore economic growth
	1981-84	Export producer prices raised	To stimulate export crop production (promote export growth) and restore economic growth
Foreign Exchange Policies	1981-82	Uganda currency realigned to reflect realistic levels (Flotation of exchange rates) introduced	
	1984	The dual Exchange regime unified	To address foreign exchange constraints and stabilize the Ugandan shilling
Tax policies	1981-84	Sales tax on imported and locally produced goods equalized	Broaden tax base and enhance tax revenue collection in order to reduce government deficits and contain inflation
Expenditure policies	1981-84	Some Indian properties returned that had been confiscated by Idi Amin in 1992	To restore fiscal discipline and reduce government budget deficit
Uganda's IFI-Supported Policy Reforms over the period 1986-91			
Trade Policies	1987	Export Monopolies liberalized	
	1988	Open General License (OGL) established	
	1989	OGL abolished	To improve country's competitiveness in order to give impetus to export growth
		Export retention scheme introduced	
	1990-91	Export licensing scheme abolished	
		Coffee marketing board abolished	
		Import licensing scheme abolished	
	1988	Some protective tariff raised (e.g. sugar, soap)	To increase tax revenue
Exchange rate policies	1987	Devaluation of the exchange rate	
	1989	Special Import program (SIP) introduced	To address foreign exchange constraints and contain balance of payments problems (reduce trade imbalances)
	1990	Foreign exchange bureaus legalized	
Tax policies	1987	Indirect sales taxes on exports removed and applied only to imports	
	1991	Uganda Revenue Authority (URA) created	To improve revenue collection
Expenditure policies	1986-92	Restructuring, denationalization, privatization of public enterprises and returning of Indian properties	To reduce government deficits

Table 2.13: Uganda's Second Generation Policy Reforms 1991-2005

Policy Reform Area	Timing	Policy Measures	Policy Reform Objectives
Trade Policies	1992-96	Tariff structure rationalized	
	1993	Export Retention scheme reintroduced	
	1997	All restrictions on international transactions removed	To promote export growth and increase tax revenue from exports
	1997	Current account restriction removed	
		Full capital account convertibility granted	To reduce current account deficits (trade imbalance)
	2000	Liberalization of exporting except those on a negative list (e.g. timber, charcoal & whole fresh fish)	To promote export growth and increase tax revenue from exports
Exchange rate policies	1992	Official and free market rates unified	To address foreign exchange rate constraints, boost export growth and restore economic growth
	1993	Exchange rate markets fully liberalized	
Tax Policies	1989-90	Sales tax all zero rated and exempt product introduced	
	1993-94	All exemptions removed except those under bilateral agreements	
	1995	Tax on coffee reduced	
		Exemptions on raw materials and intermediate inputs reduced	
	1995-96	Tax rates on international trade reduced	To broaden the tax base and increase tax revenue
		Discretionary exemptions on imports abolished	
	1996	Value added tax (VAT) introduced	
	1997	Excise duties extended to finished goods	
Fiscal Policies (Expenditure)	1992	Cash budget rule introduced	
	1992-93	Civil service reduced in size	
		Number of ministries reduced	Improve revenue allocation and reduce government deficits
	1994	Restructuring, denationalization, privatization of public enterprises and returning of Indian properties continued	

CHAPTER 3

REVENUE CONSEQUENCES OF TRADE REFORMS

3.1 Introduction

The major concern with trade liberalization in LDCs is its consequences on government revenue. As they liberalize their trade and streamline tariff regimes, LDCs also reduce a key source of government revenue. This concern evolves from the fact that in most LDCs, trade taxes continue to constitute a large proportion of government revenue. A loss of revenue is likely to disrupt development programs, and reverse the pace at which MDGs and poverty reduction goals can be achieved. LDCs contemplating further tariff liberalization therefore need to devise measures that will ensure the recovery of revenue losses that tariff liberalization entails.

A substantial literature on fiscal impact of trade liberalization exists (Khattry and Rao, 2002; Ebrill et al. 1999; Baunsgaard and Keen, 2005; Rao, 1999; Agbeyegbe et al. 2006; DeRosa et al. 2002; Castrol et al. 2004; Hatzipanayotou et al. 1994; Falvey, 1994; Emran and Stiglitz, 2003; 2005; Emran, 2005; UNECA, 2004b; Michael et al., 1993; Keen and Lighart, 2002; 2005; Diewert et al., 1989; Naito, 2006; Lyakurwa, 1993; Basu and Morrissey, 1997; Ayoki et al., 2005; Muriithi and Moyi, 2003), but there are ambiguous conclusions on this literature. Some studies claim that trade liberalization increases government revenue, whereas other studies indicate that trade liberalization reduces government revenue.

A serious neglect in this literature is that it pays little attention to dynamic short-run and long-run revenue consequences of trade liberalization. In other words, this literature ignores the time it takes to achieve the goals of trade liberalization. The benefits of trade liberalization may take longer to become evident than costs (Blejer and Cheasty, 1990). Therefore, most previous studies that have ignored dynamic short-run and long-run effects of trade liberalization might not be able to capture the full range of its potential revenue consequences.

This chapter is an attempt to investigate dynamic short- and long-run fiscal impacts of trade liberalization and to test whether Tanzania, Kenya and Uganda have been able to recover revenue losses due to cuts in trade taxes. This tests the hypothesis that emerges from the belief of the proponents of trade liberalization and public finance doctrine that developing countries are likely to experience revenue losses in the short-run, with the promises of fiscal gains in the long-run. The latter effect is premised on the assumption that long-term growth prospects will enable government to raise more domestic revenues because of increased economic activities and trade volumes.

The remainder of this chapter is organized in five sections. In section two, I review theoretical predictions of revenue consequences of trade reforms. I also review theoretical and empirical studies on revenue consequences of tariff liberalization and determinants of government revenue mobilization. Section three provides an analysis of fiscal stance in East Africa. In particular it describes the trends and patterns, structure and performance of government revenue in Tanzania, Kenya and Uganda. An econometric analysis on revenue consequences of trade liberalization is presented in section four. The section starts by describing the analytical framework used, followed by a presentation and discussion of estimation results. The last section gives concluding remarks.

3.2 Literature Review

3.2.1 Theoretical Predictions of Trade Reforms

The standard trade theory suggests that trade liberalization leads to improved economic and allocative efficiency in production, enhances international competitiveness and stimulates higher economic growth. Liberalization involves the reduction or removal of quantitative restrictions and other non-tariff barriers to trade, and the conversion of these barriers to their

equivalent tariff. This is then followed by the reduction in the number of tariff rates and dispersion, and finally by the reduction in the tariff rates.

In LDCs, heavily dependent on customs duties and other trade taxes as their major sources of revenue, there have been fears about revenue consequences of trade liberalization. However, the scale and trend of the impact of trade policy reforms on government revenue depends on initial trade value and tariff level; the size and mode of the tariff cut; import demand and supply elasticities; the nature of accompanying policies (such as exchange rate policies, tax policy reforms); economic structure; and the macroeconomic environment (Blejer and Cheasty, 1990; Seade, 1990; Ebrill et all., 1999; UNECA, 2004b; Elborgh-Woytek et al., 2006; Tanzi, 1989). In order to predict the extent and trend of the impact of trade policy reforms on government revenue, we need to consider the theoretical predictions associated with changes on trade policy instruments, namely, conversion of quantitative restrictions (QRs) to equivalent tariffs, tariff reform, the reduction of export taxes, and exchange rate reforms as well as accompanying fiscal policies.

Tariffication

The first step toward tariff reform is the conversion of quantitative restrictions (QRs) and other non-tariff barriers to equivalent tariffs (tariffication). Replacing quantitative restrictions on imports with equivalent tariffs leads to an increase in revenue, as economic rents are transferred to the government as trade tax revenue. In this way all those goods that were subject to quotas now become subject to tariff which translates into higher trade tax revenue (Agbeyegbe et al., 2006; Coady, 1997; Ebrill et al., 1999; Linn and Wetzel, 1990). However, on the other hand, tariffs may increase the variability of domestic prices which may tend to have adverse effects on the volume of trade, thus resulting in diminishing trade tax revenue (Khattry and Rao, 2002; Blejer and Cheasty, 1990).

Tariff Reform

A tariff reform involves rationalization and reduction of tariff rates. Rationalization entails reduction of tariff dispersion. The effect of the reduction of tariff dispersion depends on the relative price elasticities of demand of the commodity in question. Overall, a reduction in tariff dispersion tends to increase revenue, by virtue of the fact that reducing tariff dispersion is associated with the reduction of the effective rates of protection. Thus the tariff revenue effect is mitigated as imports replace import-competing production. In addition, a reduction in the dispersion of tariffs typically increases the minimum tariff rate, which bolsters revenue collection. Reducing tariff dispersion also can enhance revenue mobilization because taxes levied at a more uniform rate tend to minimize tax evasion and administrative difficulties (Agbeyegbe et al., 2006; Ebrill et al., 1999; Linn and Wetzel, 1990; Blejer and Cheasty, 1990).

The effect of tariff reduction on revenue again depends on the levels and existing coverage of tariffs before the reduction, and on the extent to which they are reduced. The precise impact is said to be difficult to predict because it depends on complex economic responses. If import values are unchanged, the immediate effect of a reduction in tariff rates is to lower revenues from trade taxes. This can also be accompanied with the reductions in revenues from excise taxes and VATs levied on imports (Ebrill et al., 1999; Agbeyegbe et al., 2006). However, if the value of imports rise in response to tariff reduction, and if the price elasticity of net demand for imports is sufficiently high, the revenue gain due to increased demand for the cheaper imports may compensate for, or even outweigh, the revenue loss due to tariff cuts (Ebrill et al., 1999; Linn and Wetzel, 1990; Blejer and Cheasty, 1990; Agbeyegbe et al., 2006).

Reduction of Export Taxes

Reduction of export taxes is another common feature of trade liberalization. Export taxes are a typical means of taxing primary commodities, where there are relatively few exporters and many agricultural producers who are difficult to bring under the tax net, a common phenomenon

in LDCs. In these circumstances, export taxes are an expedient to raise government revenue. However, export revenues are often extremely unstable because they are subject to fluctuations of the international markets, sharp changes in the levels of exportable surplus of the country, and movements of the real exchange rate, making it an unattractive source of government revenue (Gomez-Sabaini, 1990). Additionally, export taxes discourage the production of exportable goods, dampening revenue collection (Linn and Wetzel, 1990; Khattry and Rao, 2002).

Exchange Rate Adjustment

Exchange rate adjustments translate directly into changes in domestic revenue collection from imports and exports. The net effect of the exchange rate depends on the type of the tax revenue category and exchange rate movements. The overall effects of exchange rate adjustment will depend on the share of the different tax categories in total government revenue.

A devaluation of the domestic currency is among important components of trade reforms implemented in LDCs. Devaluation of the local currency increases the trade tax base in domestic currency terms, thus increasing trade tax collection. Although a real depreciation may lead to lower levels of imports, this is offset in whole or in part by higher domestic currency values. In some instances, devaluation may be associated with the increase in exports, hence an increase in export tax revenue. But in most developing countries export taxes are insignificant and therefore the tax effects on imports tend to dominate (Agbeyegbe et al., (2006). A devaluation of the local currency leads an increase the collection of revenue from sales and excise taxes (including VAT), because devaluation leads to an increase in the relative prices of imported goods or goods using imported inputs. Exchange rate adjustment also impacts income tax revenue collection through its indirect effects on inflation. This will depend on whether the income brackets are adjusted for inflation or not. If income brackets are adjusted for inflation, real exchange rate depreciation is likely to lead to a decline in real wages and thus a decline in income tax collection because

taxpayers are shifted into lower tax brackets. But if brackets are not adjusted fully in real terms, in this case income tax collections will rise (Agbeyegbe et al., (2006).

A real depreciation of the exchange rate is also likely to cause a decrease in revenue because it leads to a shift in import composition towards more price inelastic and less heavily taxed goods. Devaluation also tends to reduce the differential between the official and black market exchange rates, which leads to a sharp drop in implicit export and import taxes and weakens the fiscal balance through its effects on debt service (Agbeyegbe, et al. 2006; Adam et al., 2001). Overvaluation of the domestic currency, on the other hand, reduces incentives to produce goods for export. By encouraging capital flight because of expectation of future devaluation and currency substitution, it also weakens the balance of payments, and encourages black markets and trade restrictions, thus indirectly suppressing import and export bases measured in domestic currency terms. This reduces collection of international trade taxes and sales and excise taxes which are levied on domestic and imported consumption goods (Adam, et al. 2001; Agbeyegbe, et al. 2006; Seade, 1990). In addition, overvaluation favors the production of non-tradable goods over tradable goods, whether exports or import substitutes. This is reflected in a loss of competitiveness in international markets. As a result, export performance deteriorates in the long-run, and investment declines in the tradable goods sector. This dampens the country's ability to export, thus decreasing export tax collection (Linn and Wetzel, 1990; Khattry and Rao, 2002; Adam et al., 2001; Lyakurwa, 1993; Seade, 1990).

3.2.2   Empirical Evidence

Trade liberalization has been the centerpiece of the development strategy in LDCs. It has been linked to government revenue through its impact on customs revenue. However, the precise relationship depends on several variables, including the nature of trade liberalization; the response of imports and exports to liberalization; macroeconomic environment and economic structure.

Substantial theoretical and empirical studies have been carried out to investigate revenue consequences of trade liberalization. But the general evidence is inconclusive. In the theoretical public finance literature it is established that a coordinated tariff and domestic tax reform that involves a reduction in tariffs (export taxes) accompanied by the increase in consumption taxes (production taxes) leaving consumer (producer) prices unaffected increases public revenue (Dixit, 1985; Hatzipanayotou et al., 1994; Falvey, 1994; Diewert et al., 1989; Michael et al., 1993; Keen and Lighart, 2002). These studies assume that alternative domestic tax instruments exist and that the expenditure side of the budget will not be affected by substituting between types of taxes. Empirical studies refute this claim arguing that low income countries' alternative tax sources have very low yield, which limits the substitution of domestic taxes for trade taxes (Khatrry, 2003; Khatrry and Rao, 2002; Rao, 1999; Emran and Stiglitz, 2004; 2005; Emran, 2005).

In addition, the conclusion emanating from these studies are derived from doubtful assumptions. It is assumed that there is no informal sector in the economy; all commodities are taxed and there is perfect competition. When more stringent restrictions on the tax instruments are imposed by the presence of a large informal and shadow sector, where not each and every commodity in the economy can be taxed with imperfect competition, such consumer or producer price-neutral reforms reduce government revenue under plausible conditions (Emran, 2005; Emran and Stiglitz, 2004; 2005; Keen and Lighart, 2006; Devarajan and Panagariya, 2000). That is, the existence of a larger informal and shadow economy implies that the increase in consumption (production) tax required to neutralize the changes in consumer (producer) prices is feasible only if a commodity is produced and transacted in the formal part of the economy. Once this feasibility restriction on the choice of commodities for adjustments in consumption or production tax is taken into account, there are plausible sufficient conditions under which such consumer or producer price-neutral reform reduces government revenue (Emran, 2005; Emran and Stiglitz, 2004; 2005; Devarajan and Panagariya, 2000).

Furthermore, invoking a dynamic analysis changes the results of a static model, such as those employed by Dixit, (1985); Hatzipanayotou et al., (1994); Falvey, (1994); Diewert et al., (1989); Michael et al., (1993); Keen and Lighart, (2002). Naito (2006) demonstrates this by using a dynamic analysis of tariff and tax reform. His results show that lowering tariffs and raising corresponding consumption tax in a consumer or producer-price-neutral way decreases government revenue. Moreover, the claim that LDCs will be able to recover revenue lost by switching from trade taxes to consumption tax is not feasible. This is because in LDCs consumption taxes are notoriously difficult to collect. Most households in developing countries consume from their own produce before marketing their surplus (Newbery, 1987; Linn and Wetzel, 1990; Tanzi, 1987; Musgrave, 1987; Addison and Levin, 2006).

Emran (2005), and Keen and Ligthart (2005) also observe that under imperfect competition and in the presence of a binding revenue constraint, reduction in tariff rates and substitution of domestic consumption taxes for trade taxes may not be revenue-enhancing. That is, switching to domestic taxes may not constitute a viable option for low-income countries because of weak tax administrations, widespread tax evasion and rampant corruption which make the assessment of tax liabilities and collection of taxes problematic (Khattry and Rao, 2002; Schade, 2005; Baunsgaard and Keen, 2005; Rao, 1999; Linn and Wetzel, 1990).

Furthermore, in economies with large informal and agricultural sectors producing agricultural export commodities, production taxes may not provide a better option because agricultural commodities and products in the informal sector are highly subsidized and exempted from taxes. Moreover, production taxes in developing countries may not be feasible because they are associated with informational and administrative problems and in some cases production is not easily quantified (Emran and Stiglitz, 2004; Khattry and Rao, 2002; Grunberg, 1998).

Despite providing powerful and persuasive analytical findings, most of these studies are theoretical in nature, based on hypothetical situations which do not necessarily depict the real economy. Therefore, findings emanating from this literature cannot directly be transposed to

developing countries without being subjected to comprehensive empirical analysis. For better policy design, it is important that the characterization of the policy change and its actual impact are ascertained so as to come up with appropriate policy recommendations. Most of these theoretical studies are too general, and in many cases they are derived from the experiences gained from developed countries with quite different macroeconomic conditions and economic structure.

Substantial empirical studies have been carried out on the revenue consequences of trade liberalization, but the conclusions emanating from these studies are mixed. Most of these studies, however, are based on cross-country regression analyses, rather than country-specific case studies from which policy recommendations can be derived that are best suited to country's economic structure and macroeconomic conditions. Ebrill et al. (1999), Agbeyegbe et al., (2006), Gupta (2007) based on cross-country analysis, and country case studies by Lyakurwa (1993) Basu and Morrissey (1997), DeRosa, et al. (2002) Castro, et al. (2004), Ayoki et al., (2005), Muriithi and Moyi, (2003), Pelzman and Shoham (2006) find a positive effects of trade liberalization on government revenue. On the contrary studies by Rao (1999), Khattry and Rao (2002), Khattry (2002), Schiff and Winters (2003), Baunsgaard and Keen (2005), and Pelzman (2004) indicate that trade liberalization has led to a fiscal squeeze in developing countries.

Baunsgaard and Keen (2005) use a cross-country panel data regression analysis to evaluate whether countries that have embarked on trade liberalization have been able to recover the revenue lost due to tariff liberalization. The findings reveal that high-income countries have been able to recover revenue lost from cuts in trade taxes, and middle-income countries had a close to full recovery. The study found, however, that revenue recovery has been extremely weak in low-income countries, countries that happen to be highly dependent on trade tax revenues.

3.2.3   Determinants of Revenue Mobilization

The amount of government revenue collected depends on the taxation potential of the individual countries, the taxation targets set by the authorities, and the ability of governments to collect revenue. However, the success of exploiting the revenue potential and attaining the taxation targets depends on a number of other factors. These include the macroeconomic environment, economic structure and the level of development as well as the administrative capacity and the willingness to pay taxes (Teera and Hudson, 2004). These factors may interact in different ways at different times and in different countries, thus the disparities in government revenue collection among countries.

A variety of macroeconomic variables such as inflation, public debt, and aid affect government revenue mobilization. Inflation is a proxy indicator for the quality and stability of country's macroeconomic policies. This captures the direct impact it exerts on tax collection through its effects on consumption, investment and related tax categories (Davoodi and Grigorian, 2007). Higher inflation rates lead to public demoralization, lowering tax compliance, thus reducing the amount of revenue collected (McMahon and Schmidt-Hebbel, 2000). Overall, inflation generally has negative impact on government revenue mobilization. Foreign aid, whether in the form of grants or loans, affects the country's tax effort. The response of the tax effort to increased aid flows can be either positive, negative or zero depending on the purpose of aid, and whether it is a grant or a loan. A grant will tend to have a negative relationship because governments have no need to repay. In this respect, grants reduce incentives for governments to adopt good policies and maintain efficient institutions, hence resulting in low tax revenues due to tax exemptions to powerful interest groups and weak tax compliance, as well as diverting attention from addressing weaknesses in governance. In principle a loan to which a government has a commitment to repay may motivate that government to collect revenue to service the loan (Gupta et al. 2003; Agbeyegbe et al. 2006). In addition, the volatility of aid has implications for macroeconomic stability, which can affect the country's tax effort (Gupta, et al. 2003).

Public debt plays a role in determining the extent to which countries may take advantage of their taxable capacity (Tanzi, 1987). The effect of public debt depends on its size and how it is financed. A large public debt implies the need for the government to raise revenue in order to service the debt (Teera and Hudson, 2004). Therefore, a large public debt has a positive relationship with the present and future tax level. However, if most of the debt is external, debt service creates macroeconomic imbalances that might tend to reduce the tax level. This is from the fact that servicing foreign debt requires a trade account surplus, which in turn requires a reduction in imports.

A country's economic structure also helps explain its tax capacity. The shares of agriculture and industry in GDP, population size (such as population density and dependency ratio), and urbanization reflect the county's economic structure. The share of agriculture in GDP is important due to the general difficulties of taxing agriculture and government deliberately providing tax exemptions and/or subsidies to the sector. The share of the agricultural sector therefore has an inverse relationship with government revenue mobilization. Partly, this is because in most LDCs the agricultural sector is dominated by small farmers who are notoriously difficult to tax, especially when a large share of agriculture is subsistence. Moreover, most agricultural activities organized in small-scale farming generate limited taxable surpluses (Davoodi and Grigorian, 2006; Suliman, 2005; Agbeyegbe et al. 2006; Khattry and Rao, 2002; Teera and Hudson, 2004)). Generally, as the share of agriculture in GDP increases, less revenue is collected. However, the relationship may be positive in countries with a large share of agricultural products in total exports (Agbeyegbe et al. 2006).

Industrial activities are easier to tax because business owners keep better records, and their activities are concentrated in towns. Manufacturing industry can generate larger surpluses positively affecting the tax base (Teera and Hudson, 2004; Tosun and Abizadeh, 2005). The share of the mining sector is also said to exhibit a positive relationship with tax revenue (Agbeyegbe et

al. 2006). But the relationship can also be negative in cases where resources are associated with a higher risk of conflict (Agbeyegbe et al. 2006; Ndikumana, 2004).

Population density controls for the scale effect of the economy. The economic intuition is that if there are economies of scale in tax collection, due to fixed administration costs, then the higher the population density the higher will be the taxes collected for a given tax base and tax ratio (Khattry and Rao, 2002; Teera and Hudson, 2004).

There share of urban population captures the process of urbanization in a country. Both on the demand and supply sides, urbanization is positively linked to tax revenue. On the demand side, greater urbanization leads to a greater need for public services, whereas on the supply side, urbanization leads to a large taxable base as economic activities tend to be concentrated in urban areas. The economic intuition is that as an economy grows; it generally becomes more urbanized, which increases both the need for tax revenues and the capacity to tax (Tanzi, 1987; 2000; Khattry, and Rao, 2002, Teera and Hudson, 2004; Tosun and Abizadeh, 2005).

GDP per capita and GDP control for the level of economic development and scale effects. It is assumed that higher per capita GDP indicates a higher capacity to pay taxes, as well as a greater capacity to levy and collect those taxes (Teera and Hudson, 2004; Tosun and Abizadeh, 2005; Gupta, 2007). The economic intuition is based on the premise that the higher the per capita GDP, the more monetized is the economy, and the better the tax administration, hence the better the overall performance of revenue collection (Tosun, 2003; Agbeyegbe et al. 2006; Suliman, 2005).

Growth rates of real GDP and per capita GDP account for the business cycles. This captures previous failures in the adjustment process and its implications on government revenue mobilization. It also directly affects the tax bases, particularly due to economy-wide fluctuations in outputs, income and consumption. The fiscal impact of real GDP growth and per capita GDP growth is typically positive (Tosun, 2003).

3.3 Revenue Trends in East Africa

Based on the review of policy reforms presented in chapter two, a number of policy episodes are relevant for the East African countries. This is worth noting as it has direct bearing on government revenue trends and fiscal consequences. Tanzania's and Kenya's policy reform episodes can be divided into five policy reform regimes, and Uganda is into four periods (see Table 3.2). However, to capture the overall net effects of the changes of trade policies on government revenue, two broader periods can be distinguished: the pre-reform (1970-1986) and post-reform (1987-2005) periods (see Table 3.1). The year 1986 is taken as a benchmark to separate the two periods since this is the time when all three countries initiated significant economic policy reforms. There are several key variations in the trends that emerge when looking at the patterns, performance and composition of different taxes in total government revenue and tax revenue for the three countries.

3.3.1 Tanzania

Table 3.1, 3.2 and Figure 3.1 illustrate the trends, patterns and composition of tax revenue over the period between 1970 and 2005. A close examination of Tables 3.1 and 3.2 and Figure 3.1 show that in Tanzania tax revenue and its components have been decreasing throughout the entire period. The revenue/GDP ratio has declined significantly from 1970-80 period to 1993-95, with a slightly improvement in the period between 1996 and 2005. On average the share of government revenue to GDP declined from 23.4 percent in the pre-crisis period (1970-80) to 19.1 percent during the crisis period (1981-85), declining further to 15.3 percent during the economic recovery program (1986-92).

During the 1993-95 policy reforms, the revenue collection deteriorated further to 11.2 percent, with some slight improvement to more than 12.0 percent during the second generation recovery reforms period, 1996-2005 (see Table 3.2). This declining trend can be linked to the declining trends in sales and excise tax revenue and income tax revenue. Strong supported is by

the declining trends of sales and excise and income in Figure 3.1. Table 3.3 and Figure 3.1 depict the time trend of the share of government revenue, and tax revenue and its components in GDP. Generally speaking it can be noticed that they all show the same pattern: a declining trend across all tax revenue categories. The declining trend of government revenue/GDP ratio could be attributed to changes of trade and tax policies implemented between 1970 and 2005. Throughout this period, the government of Tanzania pursued a number of economic policy reforms. During this period the government raised and/or lowered the tax rates and introduced new taxes.

It has also been reported that the low levels of government revenue have been due to lower tariffs on international trade as a result of tariff reform; stagnant trade due to the economic recession of the 1980s and 1990s (this is also reflected in Figure 3.1); and low output growth due to inappropriate tax policies and tax structure. Tanzania's tax system had been reported to comprise high tax rates which had adverse effect on output growth through its impact on the growth of investment, saving and competitiveness of the economy (Osoro, 1994; World Bank, 1996). Low levels of government revenue/GDP ratio have been also due to low imports and inflows of foreign funds which caused shortages of intermediate inputs and low productivity in the manufacturing sector; overvalued exchange rate which hindered the countries competitiveness; reliance on only a few sources of taxes; and the enlargement of the informal economy (Fjetdstad and Rakner, 2003; World Bank, 1996), thus lowering tax revenue generation.

Other factors that explain low government revenue in Tanzania include widespread corruption in the revenue authority and different sectors of the economy and politics; lack of administrative capacity in mobilizing domestic resources; widespread tax exemption and evasion; and embezzlement of collected taxes (URT, 1996; Fjeldstad, 2002; Fjeldstad and Semboja, 2000; Morrissey, 1995; Levin, 2005).

Table 3.2 demonstrates that the composition of tax revenue has changed significantly in the period between 1970 and 2005. The share of trade taxes in total tax revenue decreased from 20.0 percent in the pre-crisis period (1970-80) to 7.6 percent in the crisis period (1981-85) and

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increased to 23.0 percent during the economic recovery reform period (1987-92). During the 1993-95 policy reform, the share of trade tax in total tax revenue rose from 23.0 percent during the period of economic recovery program to 27.2 percent and then increased further to 37.4 percent during the period of recovery reforms (1996-2005).

The fluctuations in the components of total tax revenue during the period 1970-2005 reflect the changes in tax and trade policies implemented during this period. Throughout the period between 1970 and 2005, a number of policy changes were made. Trade reforms that were implemented during the period include: increasing export taxes of agricultural commodities and import duties between 1980 and 1985; reducing customs duties and abolishing export taxes on agricultural commodities in the period 1986-95; and abolishing exemptions on capital goods and import duties during the period 1996-2005.

Tax policy reform involved increasing sales tax, abolishing cumbersome sales taxes in the period 1980-83; reducing the differential sales tax rates for goods and services, unifying tax rates for similar domestic and imported goods. In the period 1996-2005, the government introduced VAT, replacing sales tax. In addition, tax reforms involved changes in income tax. Specifically, the changes in income tax that were implemented during the period included: limiting the marginal tax rate to between 5.0 and 30.0 percent, introducing six income brackets for personal income; wages, salaries and all allowances were taxed; abolishing differentiation in levying corporate income from similar sources; and waiving tax incentives for public enterprises and new investors.

Despite a number of attempts by the Tanzanian government to improve tax revenue collection in the 1980s and 1990s, through tax reforms, changes in the tax rates, adoption of the VAT and customs reforms, revenue mobilization has remained very low in the country. The low tax revenue collection in Tanzania has been linked to lack of fundamental tax reform in the tax system. It was until the mid 1990s when radical tax and trade reforms were implemented that provided a turning point for Tanzania's government revenue performance (see Tables 3.2 and

3.3). In 1996 the government established the Tanzania Revenue Authority (TRA) and in 1998 sales taxes were replaced by the introduction of VAT. The aim was to expand the consumption tax base, increase government revenue and remove inefficient protection structure. Despite all these efforts, VAT revenue has remained modest, suggesting the existence of tax leakages and exemptions. The delays in undertaking policy reforms also contributed to the lower government revenue and tax revenue collection.

3.3.2   Kenya

Tables 3.1, 3.2 and 3.3, and Figure 3.2 illustrate the trends of revenue in Kenya. Unlike the Tanzanian case, the revenue/GDP ratio for Kenya shows an increasing trend over the entire period under investigation. On average, Kenya's revenue/GDP ratio rose from 14.1 percent during the pre-crisis period (1970-79) to 20.5 percent during the period between 1997 and 2005. An important component of the increase in the Kenya's revenue/GDP ratio over the entire period under study could be linked to stringent trade and fiscal policies implemented in the country between the reform periods 1987-91 and 1992-1996, when the Kenyan government made deliberate efforts to broaden the tax base and reduce reliance on trade taxes. This is reflected by the declining trend of trade taxes in Figure 3.2, quadrant 2. This is also reflected by the observed increase in the income tax revenue/GDP and sale and excise (VAT) revenue/GDP ratios, suggesting Kenya's relatively successful shift from trade taxes to domestic taxes (See Tables 3.1 and 3.3). This has also been reported by Moyi and Ronge (2006) and Karingi (2001). The increasing trend of Kenya's revenue/GDP ratios may be explained by the country's relatively competitive, well-developed manufacturing, and service sectors, as compared to those of Tanzania and Uganda.

The impressive performance of revenue yield in Kenya, despite a significant reduction in the tariff rates, has been attributed to the increase in import volumes, decrease in duty exemptions on imports, increased effective duty rates, a shift from imports subject to *ad valorem* rates

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towards imports in the high duty rate group, and changes in trade and administrative policy (i.e. introduction of pre-shipment and secondary destination inspection programs and customs control programs) (Glenday, 2000; Moyi and Ronge, 2006). Nonetheless, there have been notable fluctuations in the revenue/GDP ratios over time, suggesting a considerable vulnerability to changes in policy regimes, policy reversal and delays in policy reforms as described in chapter two. It is also reported that Kenya would have been able to collected more government revenue, but because of tax leakages, due to wide spread corruption, weaknesses and inefficiencies in tax administration and tax collection, tax exemptions, tax evasion, tax avoidance and taxpayers non-compliance has not been able to do so (Kelly, 2000; Glenday, 2000; Castro et al., 2004; Moyi and Ronge, 2006; Karingi, 2002).

With regard to the Kenya's tax revenue composition, income taxes have consistently continued to represent more than one-third of total tax revenue. Another important source of Kenya's revenue has been sale and excise taxes (VAT), on average contributing approximately about one-third of the total tax revenue. This has also been reported by Okello (2001), Karingi (2001) and Moyi and Ronge (2006). The contribution of trade taxes in total tax revenue has been declining over the entire period under study, reflecting that there has been a shift from trade taxes to domestic taxes. However, the composition of taxes in tax revenue has been fluctuating throughout the period under study. As shown in Table 3.2, the share of trade taxes in tax revenue was decreasing from the pre-crisis period until a turning point during the 1997-2005 economic policy reforms. The ratio of trade tax/total tax revenue ratios increased in 1997-2005 reform period to 19.6 percent from 14.9 percent.

On the other hand, the proportions of both sales and excise taxes and income taxes in total tax revenue have been increasing throughout, with the exception of a slight decrease during the period 1997-2005. During this period the contribution of sales and excise taxes in total tax revenue increased during the crisis period to 43.0 percent from 34.7 percent in the pre-crisis

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period. Then the share increased further to 48.6 percent during ERP period and rose to 49.2 percent during the period 1992-96. It then declined to 43.63 percent in 1997-2005.

Correspondingly, the share of income taxes in total tax revenue, decreased from 39.6 percent in the pre-crisis period to 32.4 percent in the crisis period, then slightly declined further to 31.15 percent during the 1987-91 economic recovery program and increased to 38.3 percent during the 1992-96 reform period before it went down to 35.68 percent during the 1997-2005 reform period. (see Table 3.2)

The variations and fluctuations of the contributions of the various tax components in total tax revenue reflects the changes in the government policies as described in chapter two and in the performance of the economy in general. In the period 1970-2005, the Kenyan government undertook a number of tariff and tax reforms that help to explain these fluctuations in the share of the various taxes in total tax revenue. These include the introduction of the export compensation scheme, relaxation of import controls, introduction of VAT, and abolishment of tax exemptions and export taxes.

3.3.3 Uganda

Over the past 25 years, the trend of the revenue/GDP ratio and the composition of tax revenue in Uganda have changed dramatically. Tables 3.1, 3.2, 3.3 and Figure 3.3 illustrate the changing patterns and composition of revenue, in which two trends stand out. The first is the increase in the overall total revenue/GDP and trade tax ratios, with the exception of a decline of trade tax revenue from 4.0 percent of GDP during the crisis period (1980-86) to 2.8 percent during the SAP (1987-91) period. The second fact is the high proportions of trade tax in the composition of total tax revenue, constituting more than half of total tax revenue on average.

The overall trend depicts an increasing trend for Uganda's government revenue/GDP ratio over the period under investigation. On average the revenue/GDP ratio rose from 6.4 percent during the pre-reform period (1977-86) to 15.3 percent during the post reform period (1987-

2005). The revenue/GDP ratio has increased significantly from the period 1977-79 to 1987-1992, with a very impressive performance between the period 1987-91 and 1992-2005. On average, the share of government revenue to GDP increased from 6.3 percent in the pre-crisis period (1970-79) to 6.5 percent during the crisis period (1980-86), increasing further to 8.3 percent during the economic recovery program (1987-91) and then to 17.7 percent in the period 1992-2005 (Table 3.2). The improvement in revenue collection during this period is attributed to the creation of the Uganda Revenue Authority (URA) in 1991 and the introduction of VAT in 1996 (Kangave, 2005; Kayizzi-Mugerwa, 2002).

Despite an impressive performance in revenue collection, the Uganda's revenue/GDP ratio has remained fairly low as compared to Tanzania and Kenya. The factors that have been advanced to explain the Uganda's paltry tax revenues include: weak tax administration, poor tax culture among citizens, rampant corruption that pervaded the Uganda Revenue Authority (URA) and the civil service, and the resultant prevalence of tax evasion (Kangave, 2005; Teera, 2003; Kayizzi-Mugerwa, 2002).

Table 3.2 shows mixed trends and patterns of the ratios of tax revenue and its components in relation to GDP. The tax revenue/GDP and trade tax revenue/GDP ratios increased during the crisis period to 6.3 percent and 4.0 percent from 5.9 percent and 3.9 percent during the pre-crisis period (1977-79) respectively. Thereafter, both declined to 5.8 percent and 2.8 percent respectively during the economic recovery program period, before they rose to 11.1 and 5.3 percent during Uganda's second generation reforms (1992-2005). Sales and excise tax revenue/GDP and income tax revenue/GDP ratios show the same pattern. They both declined from 1.9 percent and 0.6 percent in the pre-crisis period to 1.6 percent and 0.4, respectively percent during the crisis period. Thereafter, both were increasing from the pre-crisis period throughout the economic reform and complete reform periods (Table 3.2).

Table 3.2 also shows that despite the Ugandan government's commitment to tariff reform, the share of trade taxes in total tax revenue remains high, though showing a decreasing

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trend. Taxes from international trade have slightly declined in relative importance as a proportion of total tax revenue in recent years. However, trade taxes remain the primary source of revenue in Uganda as compared to Tanzania and Kenya. The share of trade taxes in total tax revenue fell from 58.4 percent in the pre-crisis (1977-97) to 47.8 percent during the complete reform (1992-2005) period respectively.

The share of sales and excise taxes and income tax in total tax revenue show a mixed pattern. The proportion of sales and excise tax in total tax revenue declined from the pre-crisis period from 29.7 percent to 20.9 percent in the crisis period, then decreased further during the economic recovery program period to 19.1 percent. It then increased to 19.9 percent in the reform period 1992-2005. The share of sales and excise tax in total tax revenue has remained relatively constant, though showing a slight declining trend.

3.4 Econometric Analysis

3.4.1   Methodology

The econometric analysis employed in this chapter builds on existing theoretical and empirical studies on the fiscal impact of trade liberalization (Suliman 2005; Baunsgaard and Keen, 2005; Khattry and Rao 2002; Adam et al. 2001; Rao, 1999; Teera and Hudson, 2004; Tosun and Abizadeh, 2005). The basic estimation equation to analyze the fiscal consequences of trade liberalization is formulated as follows:

$$GRV_t = \beta_0 + \beta_1 OP_t + \delta_k \mathbf{Z}_t + \varepsilon_t \qquad\qquad (3.1)$$

Where GRV is government revenue as a share in GDP, OP is openness as a proxy for trade liberalization[1] (openness-measured as the share of imports plus export in GDP), $\mathbf{Z_t}$ is a vector of control variables, and ε_t is an unobservable random idiosyncratic error term-representing a time-variant unsystematic effect and is independently and identically distributed (i.i.d).

The control variables included in the equations are real per capita GDP (in natural logarithmic form), population size (in natural logarithmic form), domestic taxes (as a percentage of sales and excise taxes plus income to GDP) and the inflation rate. Trade volume (the sum of exports and imports as a percentage of GDP) is included as a measure of openness so as to capture the effects of trade liberalization on government revenue. A dummy controlling for time-specific effects is included so as to capture the effect of civil war on the performance of government revenue in Uganda. The inclusion of these variables in the equation was reached via a stepwise regression approach, adding and dropping variables one at a time while retaining those that are significant. After a tentative step-wise regression analysis, a final model was estimated; variables that were excluded at earlier stages were tested repeatedly for inclusion, to minimize the possibility of misspecification problems due to omitting important variables. The inclusion of variables in the model is also based on whether the variable are co-integrated of order 0 or 1 and availability of data[2].

The central aim of this study is to assess short- and long-run dynamic effects of trade liberalization on government revenue. In order to capture the dynamics of the changes in trade reforms, one starts by estimating the general autoregressive distributed lagged model:

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[1] It was envisaged that several openness measured would be used to proxy for trade liberalization. However, due to unavailability of data for some measures of openness (such as average applied tariff rate-a measure of trade restriction), only one measure (trade volume-the share import plus export in GDP) was adopted for which data were readily available.

[2] Data on average applied tariff, interest rate payments and debt servicing were only available for few years, running between the 1990s and 2005 for all three countries. The series for Uganda were available for the years between 1977 and 2005 and that for Tanzania and Kenya were available for the period running between 1970 and 2005.

$$GRV_t = \beta + \gamma GRV_{t-1} + \theta_1 OP_t + \theta_2 OP_{t-1} + \delta_1 \mathbf{Z}_t + \delta_2 \mathbf{Z}_{t-1} + \varepsilon_t \qquad (3.2)$$

Estimating equation (3.2) can generate spurious results when time-series are not stationary. With non-stationary time-series data, the best alternative to explain the dynamics of changes in policy reforms is the error-correction model. This involves the re-parameterization and re-arrangement of equation (3.2), which gives the following error-correction model:

$$\Delta GRV_t = \alpha + \theta_1 \Delta OP_t + \delta \Delta \mathbf{Z}_t + \eta \varepsilon_{t-1} + \Omega_t \qquad (3.3)$$

Where $\eta = (\gamma-1)$, is the adjustment coefficient (i.e. the estimated coefficient on the error-correction term). The expected value of adjustment coefficient is negative, which implies that there are dynamic stability in the long-run within the error-correction estimation model; $\varepsilon_{t-1} = (GRV_{t-1} - kOP_{t-1} - h\mathbf{Z}_{t-1})$ is the error correction term (which can also be obtained directly from the co-integration regression equation (3.2)), $k = \theta_1 + \theta_2 / (1 - \gamma)$ and $h = (\delta_1 + \text{---} + \delta_4)/ (1 - \gamma)$. The error-correction term captures long-run equilibrium changes of government revenue following the implementation of trade reform policies in the short-run.

3.4.2   Estimation Results

With time-series data it is meaningless to estimate the error-correction model with variables which are not co-integrated. Therefore, the first step before embarking on estimating the error-correction model is to ascertain the stationarity, order of integration and whether the variables under scrutiny are co-integrated.

Unit Root Test

A unit root test was performed for each variable for the period spanning 1970 to 2005. First, a unit root test was performed for each variable in their levels. For the variables in which

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the null hypothesis of non-stationary was rejected, their first differencing was tested for stationarity. To minimize the possibility of falsely rejecting the true null hypothesis or accepting the null hypothesis which is false, both the augmented Dickey Fuller Test (ADF) and Pillips-Perron (P-P) non-parametric test were used to test for the presence of unit root. The ADF and P-P unit root tests are summarized in Table 3.4. The results show that after taking the first differences most of the variables became integrated of order 1. Other variables were integrated of order 0 (i.e. inflation rate, external debt and per capita GDP for Kenya) and 2 (i.e. per capita GDP for Uganda). Variables integrated of order 0 were also included in the estimation of the error-correction estimation after taking their first differences so that all variables are of the same order of integration and interpretation purposes.

Co-integration Analysis

Since more than one variable was included in the co-integration regression equation, critical values generated by the Mackinnon (1991) and Ericsson and Mackinnon (2002) method were used for co-integration analysis. This is because ADF and P-P do not take into account finite samples and asymptotic distribution properties (Mackinnon, 1991). Results for co-integration analysis (unit root test for the residuals-the error-correction term) are summarized in Table 3.5. An examination of unit root tests for the residuals 5 fail to reject the null hypothesis of non-stationary series, suggesting that the variables in the co-integration regression equation are co-integrated. This warrants the use of the error-correction model to examine short-run and long-run dynamic changes in government revenue in Tanzania, Kenya and Uganda.

Error-Correction Model Results

Tables 3.6, 3.7 and 3.8 report both the co-integration (column 1) and error-correction (columns 2_{ODA}, 2_{GRANT} and 2_{LOAN} for ODA, grants and loans respectively) estimation results for trade tax revenue and total government revenue for the respective countries. In all cases, the

results suggest that there exists a long-run relationship between total government revenue and its determinants included in the co-integration equation. This is supported by the negative and statistically significant adjustment coefficient (error-correction term). The results also show that there are significant differences among the three countries, and these are worth noting.

Tanzania

In the case of Tanzania, the only significant variables are one-period lagged dependent variable (GRV_{t-1}), openness (TRADE), inflation rate, industry as a share in GDP, per capita GDP and time trend in the co-integration regression, and openness measure, per capita GDP and the error-correction term in the error-correction regression model. As expected, the adjustment coefficient-error-correction term (ECM_{t-1}) is negative and statistically significant, indicating the existence of dynamic stability. That is, any discrepancies in the changes in government revenue are corrected by the extent the Tanzanian economy is open to the rest of the world, and the changes in the inflation rate, per capita GDP and share of industry in GDP toward the equilibrium. This is an indication of the existence of a long-run relationship between government revenue and extent of openness to the rest of the world, changes in inflation rate, per capita GDP and growth of the industrial sector. This suggests that continued trade and tax reforms, promoting the manufacturing sector, promoting the growth of GDP per capita and creating macroeconomic stability should be at the fore to ensure sustainable government revenue mobilization in Tanzania. The results in Table 3.6 show that there are partial adjustments in government revenue and trade tax revenue over time in Tanzania. The evidence is supported by the significant coefficients on the lagged dependent variable in the co-integration regression (column 1).

It is evident from Table 3.6 that there are positive significant long-run effects of trade reforms on government revenue in Tanzania. This is evidenced by a positive estimated long-run coefficient 0.67; that is, greater openness to trade by a percentage point, contributed to an increase of 0.67 percentage points in government revenue in Tanzania, implying that Tanzania

has been recovering revenue lost due to cuts in international trade taxes. Based on this finding, it can be concluded that trade reforms implemented in Tanzania have not contributed to the observed decline in the share of government revenue in GDP. The declining trend in the share of government revenue in GDP can be attributed to weaknesses and inefficiencies in the Tanzania's tax system, particularly in tax administration and collection as well as tax leakages due to tax evasion, tax exemption, rent-seeking and embezzlements of collected taxes (Fischer, 2006; Fjeldstad, 2002; Fjeldstad and Semboja, 2000; Morrissey, 1995; Levin, 2005). This explanation will be supported by findings in Chapter 4, which demonstrates that tax revenue generation has been sluggish as evidenced by less-than-one tax buoyancy across all tax categories and the tax system as a whole.

Contrary to prior expectation, the coefficient on the share of industry in GDP is negative and significant, suggesting that the share of industry in GDP is inversely correlated with revenue mobilization in Tanzania. In contrast, economic theory suggests that the rise of the share of industry in GDP is associated with increases in government revenue mobilization. Similarly, though insignificant, the coefficients on external debt across the regressions are negative. It is often argued that as the share of external debt in GDP rises, the government is pressurized to collects more revenue to service the debt. However, based on the results in Table 3.6 it is not the case for Tanzania.

As expected, positive scale effects are evident in Tanzania, as increasing per capita GDP is significantly and positively correlated with the share of government revenue in GDP. This is expected because as per capita income rises, the government revenue/GDP ratio increases. That is, the higher the per capita income, the high the income of the populace and the more are willing and able to pay taxes. The results show that the inflation rate is inversely and significantly associated with government revenue collection in Tanzania.

Although insignificant, the share of agriculture in GDP is negatively correlated to government revenue in Tanzania. The results reveal that the overall effect of aid (ODA) on

government revenue is positive, though not significant. This is not surprising because Tanzania is one of the most aid recipient countries in sub-Saharan Africa. The country has been receiving substantial amount of foreign aid as general budget support. However, when ODA is separated into its components, as expected although not significant, the share of grants as a percentage of GDP has a negative effect and the share of loans in GDP has a positive effect on government revenue. This suggests that grants reduce incentives for the government's commitment to adopting good policies and to maintain efficient institutions to enhance revenue collection. In the case of loans, the government has an obligation to repay, and thus has incentives to collect more revenue in order to pay back the loan.

Kenya

Table 3.7 displays co-integration and error-correction regression results of the determinants of government revenue in Kenya. The results show that there exists a long-run relationship between government revenue as well as trade tax revenue and agriculture and industry. Strong support for dynamic stability is provided by a significant negative adjustment coefficient (ECM_{t-1}). That is, government revenue in Kenya moves towards the equilibrium due the changes in the structure of the economy as reflected by the changes in there share of agriculture and industry in GDP. This suggests that continued trade and tax reforms, promoting the manufacturing sector, commercialization of the agricultural sector, promoting the growth of GDP per capita and creating macroeconomic stability can provide the base for sustainable government revenue mobilization for the Kenyan government. The results also demonstrate that there are partial adjustments over time in government revenue and trade tax revenue in Kenya. This is supported by the significant positive coefficients on the lagged dependent variable.

The results reveal that there seem to be significant positive long-run effects of trade reform on trade tax revenue. A long-run impact coefficient of trade liberalization on trade tax revenue collection is estimated at 1.75 and short-run coefficient is 0.57. That is, in the long-run

and short-run, increased openness of the Kenya economy to the rest of the world by a percentage point, contributed to 1.75 and 0.57 percentage points increase in trade tax revenue, respectively. This may suggest that in the long-run trade tax revenue has been improving as a result of increased trade volumes in Kenya. Although these positive effects are statistically insignificant, it is evident from the results in Table 3.7 that trade reforms did not adversely affect government revenue mobilization in Kenya.

It is evident from the results that there are significant positive short-run effects of the changes in the share of external debt and industry in GDP on government revenue in Kenya. The positive and significant effect of the increase in the share of industry in GDP on government revenue in Kenya is not surprising because Kenya has a well developed manufacturing sector as compared to its neighbor counterparts-Tanzania and Uganda. Additionally, Kenya has been more successful in designing an efficient, less-distortinary and buoyant domestic tax system as compared to Tanzania and Uganda. Strong support is evidenced by higher levels of the share of VAT and income tax in total tax revenue in Kenya as compared to Tanzania and Uganda (see Tables 3.1 and 3.2).

Contrary to expectation, the results show that there are negative effects of economies of scale on government revenue mobilization in Kenya, as indicated by negative correlation between rising per capita income and the share of government revenue in GDP, though statistically insignificant. This is an indication of the existence of structural and institutional weaknesses and inefficiencies in tax administration in Kenya. Though not significant, the results indicate that overall aid (ODA) has a positive effect on government revenue. However, when ODA is split into its components, as expected, the share of grants in GDP has a negative effect on government revenue mobilization, whilst the share of loans in GDP has positive effects on government revenue.

Uganda

Table 3.8 summarizes co-integration and error-correction estimation results of the determinants of government revenue in Uganda. The results show that there is a long-run dynamic relationship between government revenue and greater openness to trade, inflation, agriculture, and total external debt. This suggests that continued trade and tax reforms, and creating stability are important for the sustainability of government revenue mobilization in Uganda. Dynamic stability is implied by significant negative coefficients of the error-correction term (ECM_{t-1}) across all specifications. That is, short-run changes in inflation, total external debt and greater openness to trade equilibrates the movement of government revenue towards the equilibrium point. The co-integration regression results suggest that there are partial adjustments of government revenue and trade tax revenue in Uganda over time. The evidence is provided by a positive and statistically significant coefficient on the lagged dependent variables.

The results show that there are significant negative short-run and long-run effects of trade reforms on government revenue in Uganda. Strong support is provided by a negative statistically significant long-run coefficient on the openness measure (TRADE), estimated at -1.05. That is, greater openness to trade by a percentage point has been associated with a decline in government revenue by 1.05 percentage points in Uganda. This indicates that Uganda has not been recovering revenue lost due to cuts in trade tax revenues. This is noteworthy because despite the observed increasing trend of the share of government revenue in GDP in Uganda, the regression results indicate that trade liberalization led to lower levels of government revenue. The conclusion that can be drawn from this finding is that trade reforms depressed share of government revenue in GDP in Uganda, unlike in its neighbors Tanzania and Kenya.

It is evident from the regression analysis that short-run changes in inflation rate and official development assistance had significant effects on government revenue in Uganda. The results indicate that overall aid (ODA) has a negative effect on government revenue. This may be because grants make up a larger proportion of the foreign aid that has been provided to the

Ugandan government (Table 2.10). This is also supported by the by the regression results whereby after splitting ODA into its components, the share of grants in GDP has a significant inverse relationship with government revenue mobilization. The plausible interpretation is that grants reduce incentives for the government's commitment to adopting good policies and to maintain efficient institutions to enhance efficiencies in revenue mobilization. Somewhat surprisingly, the share of loans in GDP too has a negative effect on government revenue, though statistically insignificant. The inverse relationship between loans and government revenue mobilization in Uganda could be related to the volatility of loan disbursement to Uganda contributing to unpredictability of revenues for a general budget support (Antingi-Ego, 2006; Williamson, 2006). There seem no significant short-run effects of changes in external debt, agriculture, industry and civil war on government revenue.

Results in Table 3.8 show that short-run changes in the inflation rate contributed significantly to the decline of total tax revenue and trade tax revenues in Uganda. Strong support is provided by the negative and statistically significant coefficient on inflation. The results also reveal that short-run changes in the share of industry in GDP had positive and significant impacts on trade tax revenue mobilization in Uganda. Other variables seem to have no significant short-run effects on trade tax revenue mobilization in Uganda.

3.5 Conclusions

The results provide a clear picture that revenue consequences of trade reform have not been the same for the three East African countries under study. The regression results indicate that trade reforms led to lower government revenue in Uganda. Despite the observed declining trends of government revenue in GDP in Tanzania, the econometric results indicate that trade reforms have not contributed to the decline in government revenue.

Econometric results show that trade reforms had significant positive and negative impacts on government revenue in Tanzania and Uganda, respectively, implying that Tanzania has been

recovering revenue lost due to cuts in trade tax revenue whereas Uganda has not been able to do so. In the case of Kenya, though not statistically significant, the results show that trade reforms had not adverse effects on government revenue. These dissimilarities in the revenue consequences of trade reforms in the three countries support the argument made earlier that revenue consequences of trade reforms are country-specific, and cannot be derived from cross-country analysis as this may obscure the different ways in which any given country has been affected.

It is evident from the findings that changes in policy episodes have been part and parcel of observed variations and fluctuations of the trends of revenue/GDP ratios as well as in the changes in the ratio of the different tax components in GDP and tax revenue. Most prominent is the declining trend of the contribution of trade taxes. There has been a significant decline in the reliance on trade taxes as a source of revenue among the three countries, with the exception of Uganda where the proportion of trade taxes in GDP and tax revenue remains higher.

The results also reveal that in one way or on other, trade reforms have contributed to the variations and fluctuations of revenue in all three countries. This has been contributed to volatility and unpredictability of revenue generation, which may adversely affect the smooth financing of government budgets.

The findings demonstrate that the success of government revenue collection depends on the taxation potential of the individual countries as conditioned by the macroeconomic environment, economic structure and the level of development. For example, Kenya has been successful in designing relatively more efficient and buoyant tax system, as evidenced by collection of larger proportions of taxes from VAT and income taxes, which are considered to be less distortionary (Heady, 2004). Kenya has a higher government revenue/GDP ratio, consistent with its relatively higher literacy levels and well-developed manufacturing and service, sectors-easy-to-tax sectors, as compared to Tanzania and Uganda (see Tables 2.1, 2.6 and 2.10).

There is strong evidence that there are perverse weaknesses and inefficiencies in tax administration and collection. Institutional weaknesses and high incidences of tax revenue leakages due to tax evasion, tax exemptions, tax holidays and embezzlements of collected taxes have been reported to obstruct government revenue mobilization in all three countries (Fischer, 2006; Fjeldstad, 2002; Fjeldstad and Semboja, 2000; Morrissey, 1995; Levin, 2005; Kangave, 2005; Teera, 2003; Kayizzi-Mugerwa, 2002; Chen et al., 2001, Ayoki et al., 2005; Ndikumana and Nannyonjo, 2007; Kelly, 2000; Glenday, 2000; Castro et al., 2004; Moyi and Ronge, 2006; Karingi, 2002).

The following policy lessons can be drawn from these findings. First, all three countries have the potential for increasing government revenue mobilization. This is possible if these countries can rectify existing structural, institutional and administrative weaknesses in their tax systems. Improvement in revenue mobilization could be achieved through the computerization of tax administration and collection. This can help to monitor tax collection and control corruption because it makes harder to temper with records. This will also help to address issues related to tax revenue leakages and embezzlement.

Second, expansion of the tax base should be at the forefront in the ongoing tax reform in the three countries. Enlarging the tax net by bringing in more taxpayers into the tax bracket; provision of better incentives to taxpayers so as to improve tax compliance; abolishment unnecessary tax exemptions; and instituting and enforcing stringent laws to punish tax evaders and embezzlers are important issues that need to be addressed.

Third, the three countries should focus at providing incentives for the development of the manufacturing sector and commercialization of the agricultural sector, as means for the monetization and raising income and sales and excise taxes as well as trade taxes.

Table 3.1:   Tax Structure Pre- and Post-Reform in East Africa

Variable	Pre-Reform Period (1970-86)	Post-Reform Period (1987-2005)	Whole Period (1970-2005)
Tanzania		(As % of GDP)	
Total Revenue	21.61	15.54	18.41
Tax Revenue	20.12	11.68	15.67
Trade Tax Revenue	3.22	3.65	3.45
Sales & Excise/VAT	7.12	3.72	5.33
Income Tax Revenue	5.80	3.10	4.37
	(As % of Tax Revenue)		
Trade Tax Revenue	15.57	32.11	24.30
Sales & Excise/VAT	36.46	30.56	33.36
Income Tax Revenue	29.24	26.59	27.83
Other Taxes	18.73	10.74	14.51
Total Tax Revenue	100.00	100.00	100.51
Kenya		(As % of GDP)	
Total Revenue	14.95	18.98	17.07
Tax Revenue	12.83	16.60	14.82
Trade Tax Revenue	3.38	2.99	3.17
Sales & Excise/VAT	5.15	7.34	6.38
Income Tax Revenue	4.64	5.36	5.02
	(As % of Tax Revenue)		
Trade Tax Revenue	24.29	18.16	24.28
Sales & Excise/VAT	38.60	44.52	39.58
Income Tax Revenue	36.61	36.34	35.36
Other Taxes	0.50	0.98	0.78
Total Tax Revenue	100.00	100.00	100.00
Uganda		(As % of GDP)	
Total Revenue	6.44	15.26	12.22
Tax Revenue	6.29	9.70	8.52
Trade Tax Revenue	3.94	4.62	4.39
Sales & Excise/VAT	1.70	3.10	2.62
Income Tax Revenue	0.47	1.55	1.18
	As % of Tax Revenue)		
Trade Tax Revenue	57.23	47.71	51.00
Sales & Excise/VAT	31.88	31.69	31.75
Income Tax Revenue	9.09	14.92	12.91
Other Taxes	1.80	5.68	4.34
Total Tax Revenue	100.00	100.00	100.00

Table 3.2:   Tax Structure in Policy Reform Episodes in East Africa, 1970-2005

Variable	Tanzania					Kenya					Uganda			
	70-80	**81-85**	**86-92**	**93-95**	**96-05**	**70-79**	**80-86**	**87-91**	**92-96**	**97-05**	**70-79**	**80-86**	**87-91**	**92-05**
Government Revenue (as % of GDP)														
Total Revenue	23.36	19.01	15.19	14.74	16.00	14.14	16.10	17.00	18.64	20.45	6.25	6.53	8.33	17.73
Tax Revenue	21.25	18.61	13.74	10.07	11.08	11.78	14.32	15.24	16.55	17.54	5.85	6.25	5.82	11.08
Trade Tax Revenue	4.24	1.42	2.93	2.75	4.17	3.36	3.40	2.65	2.69	3.36	3.92	3.95	2.76	5.29
Sales & Excise/VAT	5.91	9.74	6.01	2.71	2.80	4.27	6.16	7.58	7.84	6.96	1.89	1.61	1.86	3.55
Income Tax Revenue	6.08	5.49	3.63	2.89	2.91	4.64	4.63	4.82	6.54	5.20	0.56	0.44	0.57	1.90
Taxes (as % of Total Tax Revenue)														
Trade Tax Revenue	19.98	7.65	23.02	27.17	37.42	26.12	23.71	18.87	14.22	19.57	58.41	56.73	47.57	47.76
Sales & Excise/VAT	28.06	52.55	42.15	26.99	25.34	33.71	43.04	48.64	49.19	43.63	31.96	31.85	31.75	31.66
Income Tax Revenue	29.23	29.41	26.32	28.83	26.27	39.57	32.38	31.15	36.31	34.68	9.59	8.88	9.74	16.77
Other Taxes	22.73	10.39	8.51	17.01	10.97	0.60	0.87	1.34	0.28	1.12	0.04	2.54	10.94	3.81
Total Tax Revenue	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 3.3:   Time Trend Coefficients of Government Revenue in East Africa

Country	Pre-Reform Period (1970-1986)	Post Reform Period (1987-2005)	Whole Period (1970-2005)
Total Government Revenue			
Tanzania	-0.559	0.165	-0.287
	(3.44)***	(1.75)*	(5.20)***
Kenya	0.204	0.283	0.231
	(2.92)**	(5.08)***	(10.64)***
Uganda	0.133	0.814	0.646
	(0.526)	(10.94)***	(13.00)***
Total Tax Revenue			
Tanzania	-0.371	-0.154	-0.412
	(2.98)***	(2.01)**	(10.60)***
Kenya	0.292	0.207	0.218
	(4.91)***	(4.32)***	(11.63)***
Uganda	0.334	0.467	0.304
	(0.93)	(9.52)***	(6.24)***
Trade Tax Revenue			
Tanzania	-0.333	0.132	-0.002
	(5.94)***	(3.50)***	(0.09)
Kenya	-0.030	-0.041	-0.013
	(0.75)	(0.98)	(0.88)
Uganda	0.308	0.228	0.108
	(1.20)	(5.48)***	(2.89)***
Sales and Excise Tax (VAT) Revenue			
Tanzania	0.414	-0.246	-0.134
	(4.17)***	(3.46)***	(3.09)***
Kenya	0.229	-0.068	0.103
	(5.36)***	(1.49)	(4.76)***
Uganda	-0.027	0.177	0.114
	(0.35)	(13.43)***	(8.56)***
Income Tax Revenue			
Tanzania	-0.008	-0.043	-0.120
	(0.15)	(2.25)**	(7.75)***
Kenya	0.019	0.001	0.032
	(0.94)	(0.01)	(2.26)**
Uganda	-0.005	0.156	0.094
	(0.24)	(13.82)***	(9.74)***

Notes: Absolute t-values are reported in parentheses; *** significant at 1% level, ** significant at 5 % level and * significant at 10 % level.
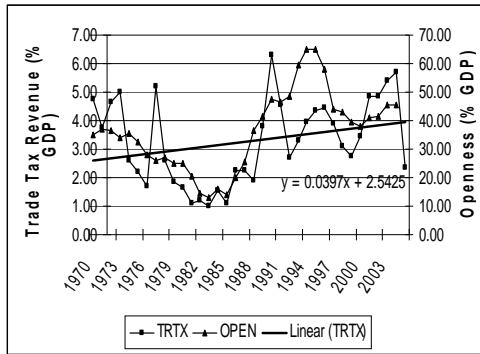
1: Trade Tax Revenue
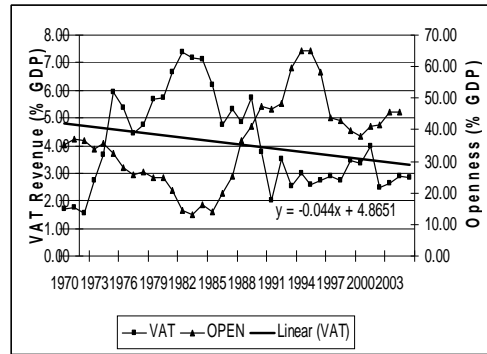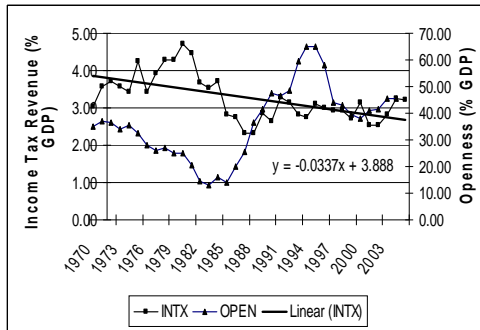
2: VAT Revenue

3: Income Tax Revenue
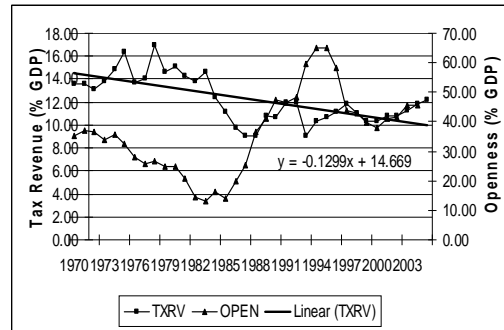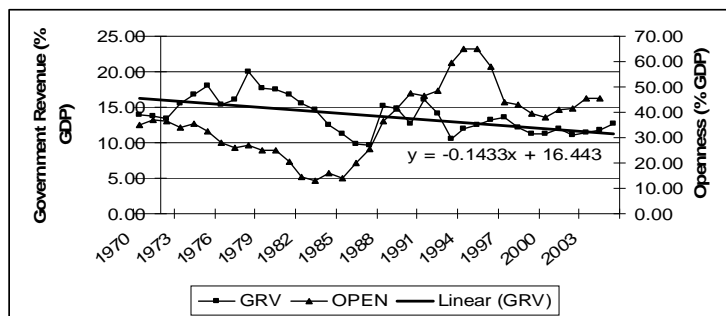
4: Total Tax Revenue

5. Total Government Revenue (As a Percentage of GDP)

Figure 3.1: Time Trends of Government Revenue in Tanzania
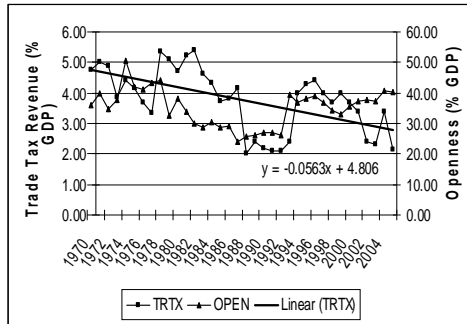
1: Trade Tax Revenue
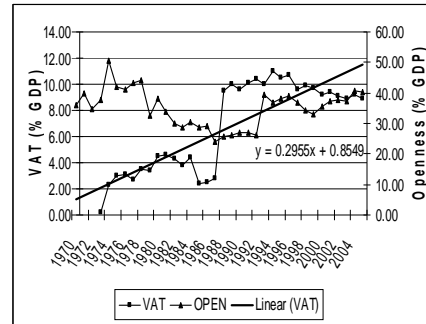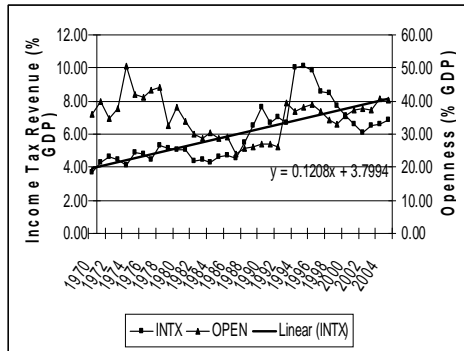
2: VAT Revenue

3: Income Tax Revenue
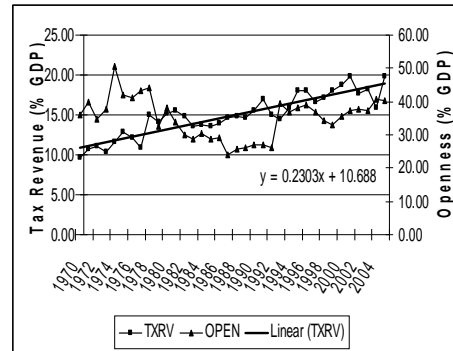
4: Tax Revenue
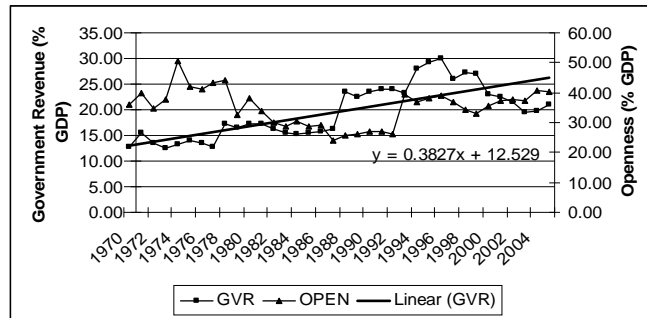
5: Total Government Revenue

Figure 3.2: Time Trends of Government Revenues in Kenya
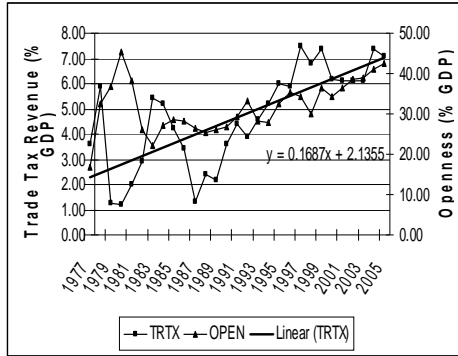
1: Trade Tax Revenue
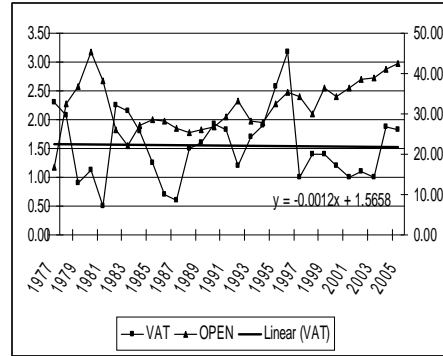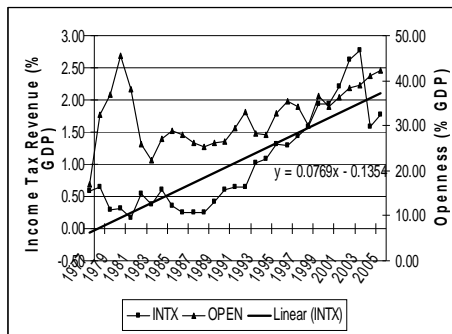
2: VAT Revenue

3: Income Tax Revenue
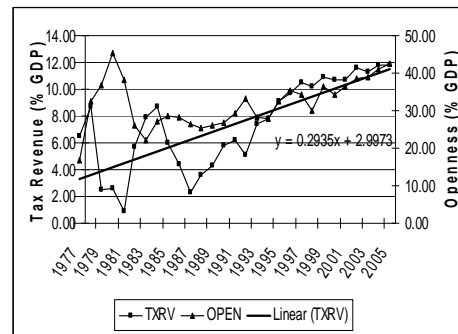
4: Total Tax Revenue
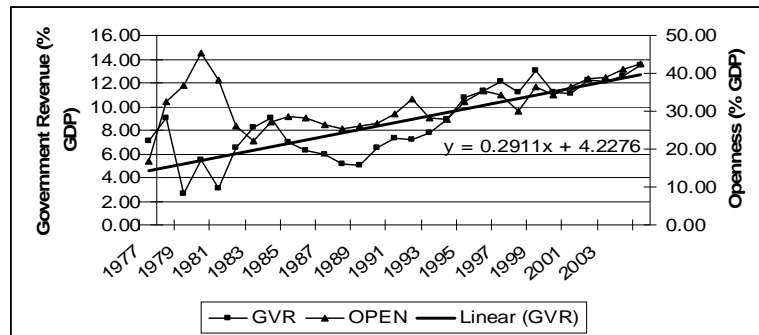
5: Total Government Revenue

Figure 3.3: Time Trends of Government Revenues in Uganda

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Table 3.4:   Unit Root Tests for Variables in the Regression Analysis

Variable	ADF Z(t) Value	PP Z(t) Value	Order of Integration
Tanzania			
Government Revenue	-4.618***	-7.134***	I(1)
Trade Volume (TRADE/GDP)	-2.507	-3.828***	I(1)
Inflation Rate	-2.995**	-5.383***	I(1)
External Debt Ratio to GDP	2.009	-8.016***	I(1)
Agriculture Ratio to GDP	-3.448***	6.923***	I(1)
Industry Ratio to GDP	-3.023**	-7.155***	I(1)
Per Capita GDP	-2.084	-3.689***	I(1)
Official Development Aid/GDP	-3.166**	-4.830***	I(1)
Grants (% of GDP)	-2.850*	-5.005***	I(1)
Loans (% of GDP)	-4.538***	-7.847***	I(1)
Kenya			
Government Revenue	-4.823***	-7.962***	I(1)
Trade Volume (TRADE/GDP)	-4.078***	-7.011***	I(1)
Inflation Rate	-3.006**	-4.354***	I(0)
External Debt Ratio to GDP	-3.167**	-5.322***	I(0)
Agriculture Ratio to GDP	-4.211***	-4.943***	I(1)
Industry Ratio to GDP	-4.246***	-5.835***	I(1)
Per Capita GDP	-2.331	-6.759***	I(0)
Official Development Aid/GDP	-2.541*	-6.247***	I(1)
Grants (% of GDP)	-1.625	-3.959***	I(1)
Loans (% of GDP)	-3.370**	-8.707***	I(1)
Uganda			
Government Revenue	-3.501**	-8.943***	I(1)
Trade Volume (TRADE/GDP)	-6.193***	-6.139***	I(1)
Inflation Rate	-2.889**	-5.555***	I(1)
External Debt Ratio to GDP	-1.814	-4.183***	I(1)
Agriculture Ratio to GDP	-2.121*	-6.949***	I(1)
Industry Ratio to GDP	-4.944***	-4.550***	I(1)
Per Capita GDP	-3.234**	-5.494***	I(2)
Official Development Aid/GDP	-3.115**	-6.877***	I(1)
Grants (% of GDP)	-4.143***	-4.605***	I(1)
Loans (% of GDP)	-1.652	-10.019***	I(1)

Notes: *** significant at 1% level, ** significant at 5 % level and * significant at 10 % level.

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Table 3.5:   Results for Co-integration Analysis

Equation	Without Constant			Without Trend			With Trend		
	Mackinnon Critical Values			**Mackinnon Critical Values**			**Mackinnon Critical Values**		
	Z(t)	**1%**	**5%**	**Z(t)**	**1%**	**5%**	**Z(t)**	**1%**	**5%**
Tanzania									
Government Revenue	-7.989***	-4.830	-3.917	-7.659***	-5.247	-4.293	-7.758***	-5.665	-4.660
Trade tax Revenue	-6.757***	-4.546	-3.685	-6.642***	-4.994	-4.283	-6.510***	-5.426	-4.487
Kenya									
Government Revenue	-4.985***	-4.204	-3.407	-4.911***	-4.696	-3.872	-4.845**	-5.144	-4.293
Trade tax Revenue	-7.050***	-4.204	-3.407	-6.928***	-4.696	-3.872	-6.831***	-5.144	-4.293
Uganda									
Government Revenue	-4.832***	-4.725	-3.736	-4.707**	-5.273	-4.170	5.120**	-5.729	-4.589
Trade tax Revenue	-6.162***	-4.362	-3.457	-6.027***	-4.909	-3.943	-5.930***	-5.418	-4.389

Notes: Z(t) *** significant at 1% level, ** significant at 5 % level and * significant at 10 % level, (Critical values at 1% and 5% level of significant are calculated using Mackinnon (1994) and Ericsson and Mackinnon (2002) method.

Table 3.6:   Determinants of Government Revenue Mobilization in Tanzania

Variables	Government Revenues				Trade Tax Revenues			
	1	2_{ODA}	2_{GRANT}	2_{LOAN}	1	2_{ODA}	2_{GRANT}	2_{LOAN}
GRV_{t-1}	0.341**					0.314**		
	(2.07)					(2.00)		
TRADE	0.444**	0.377*	0.399**	0.365*	0.099	0.274	0.254	0.319
	(2.53)	(1.91)	(2.03)	(1.91)	(0.36)	(0.47)	(0.44)	(0.56)
INFL	-0.145***	0.051	0.066	0.054		0.111	0.084	0.129
	(3.36)	(0.76)	(0.92)	(0.86)		(0.57)	(0.40)	(0.70)
EXD		-0.075	-0.070	-0.080	-0.340**	-0.113	-0.121	-0.106
		(0.60)	(0.57)	(0.65)	(2.34)	(0.31)	(0.33)	(0.29)
AGR		-0.299	-0.211	-0.261		0.375	0.205	0.455
		(0.60)	(0.38)	(0.50)		(0.25)	(0.13)	(0.30)
IND	-0.806**	-0.295	-0.271	-0.270	1.039**	0.880	0.814	0.887
	(2.50)	(1.12)	(1.01)	(1.02)	(2.12)	(1.15)	(1.04)	(1.13)
PCGDP	0.334**	0.532**	0.490**	0.567**		0.475	0.514	0.406
	(2.45)	(2.23)	(2.10)	(2.54)		(0.70)	(0.77)	(0.63)
ODA		0.006				0.085		
		(0.05)				(0.28)		
GRANT			-0.039				0.131	
			(0.39)				(0.45)	
LOAN				0.032				0.005
				(0.60)				(0.03)
TREND	-0.022***				-0.047*			
	(3.56)				(1.76)			
ECM_{t-1}		-0.881***	-0.862***	-0.907***		-0.765***	-0.762***	-0.752***
		(4.63)	(4.67)	(4.88)		(3.42)	(3.44)	(3.40)
Φ	0.674							
CONST.	1.793**	-0.029	-0.025	-0.031	-1.633	-0.044	-0.048	-0.039
	(2.04)	(1.00)	(0.89)	(1.12)	(1.09)	(0.52)	(0.54)	(0.47)
N	35	34	34	34	35	34	34	34
F-Value	15.89***	4.17**	4.22**	4.28**	14.08***	2.08*	2.10*	2.06*
Adj-R^2	0.7243	0.4349	0.4382	0.4428	0.6580	0.2073	0.2110	0.2048

Notes: GVR: the natural logarithm of the ratio of government revenue to GDP; TRADE: the natural logarithm of the ratio of trade volume (export plus import to GDP) to GDP; INF: the natural logarithm of inflation rate; EXD: the natural logarithm of total external debt to GDP; AGR: the natural logarithm of the share of agriculture in GDP; PCGDP: the natural logarithm of real per capita GDP; ODAID: the natural logarithm of the ratio of oversea development aid to GDP; ECM_{t-1}: the residual of the regression of co-integrated variables lagged one period, Φ: is the coefficient capturing long-run effects of trade reform on government revenues.

Absolute t-values are reported in parentheses; *** significant at 1% level, ** significant at 5 % level and * significant at 10 % level.

Table 3.7:   Determinants of Government Revenue Mobilization in Kenya

Variables	Government Revenues				Trade Tax Revenues			
	1	2_{ODA}	2_{GRANT}	2_{LOAN}	1	2_{ODA}	2_{GRANT}	2_{LOAN}
GRV_{t-1}	0.498***				0.676***			
	(3.83)				(4.67)			
TRADE	0.075	-0.024	0.040	-0.005	0.568*	-0.057	-0.032	-0.009
	(0.60)	(0.19)	(0.32)	(0.04)	(1.72)	(0.14)	(0.08)	(0.02)
INFL		-0.011	-0.005	-0.010		-0.032	-0.031	-0.026
		(0.73)	(0.35)	(0.64)		(0.61)	(0.64)	(0.53)
EXD		0.012	0.014*	0.011		-0.003	-0.002	0.000
		(1.51)	(1.76)	(1.44)		(0.11)	(0.10)	(0.00)
AGR	-0.340*	-0.111	0.166	-0.151	0.683	0.459	0.482	0.422
	(1.95)	(0.32)	(0.49)	(0.45)	(1.36)	(0.41)	(0.45)	(0.39)
IND	-0.776***	1.136**	1.045**	1.049**	-0.345	0.541	0.549	0.551
	(3.39)	(2.20)	(2.02)	(2.05)	(0.63)	(0.34)	(0.35)	(0.36)
PCGDP		-0.709	-0.571	-0.530		-0.104	-0.149	-0.128
		(1.35)	(1.13)	(1.07)		(0.061)	(0.09)	(0.08)
ODA		0.065				-0.001		
		(1.01)				(0.00)		
GRANT			-0.057				-0.080	
			(0.47)				(0.21)	
LOAN				0.032				-0.043
				(0.90)				(0.37)
ECM_{t-1}		-0.387*	-0.368*	-0.342*		-0.737***	-0.738***	-0.726***
		(1.95)	(1.84)	(1.73)		(3.10)	(3.21)	(3.13)
Φ					1.753			
CONST.	4.578***	0.017	0.778	0.016	-3.264*	-0.012	0.075	-0.012
	(3.50)	(1.26)	(0.56)	(1.24)	(1.89)	(0.28)	(0.18)	(0.29)
N	35	34	34	34	35	34	34	34
F-Value	31.89***	3.53**	3.32**	3.48**	13.33***	1.35	1.36	1.38
Adj-R^2	0.7842	0.3799	0.3604	0.3750	0.5919	0.0783	0.0799	0.0634

Notes: GVR: the natural logarithm of the ratio of government revenue to GDP; TRADE: the natural logarithm of the ratio of trade volume (export plus import to GDP) to GDP; INFL: the natural logarithm of inflation rate; EXD: the natural logarithm of total external debt to GDP; AGR: the natural logarithm of the share of agriculture in GDP; PCGDP: the natural logarithm of real per capita GDP; ODA: the natural logarithm of the ratio of oversea development aid to GDP; ECM_{t-1}: the residual of the regression of co-integrated variables lagged one period; Φ: is the coefficient capturing long-run effects of trade reform on government revenues.

 Absolute t-values are reported in parentheses; *** significant at 1% level, ** significant at 5 % level and * significant at 10 % level.

Table 3.8:   Determinants of Government Revenue Mobilization in Uganda

Variables	Government Revenues				Trade Tax Revenues			
	1	2_{ODA}	2_{GRANT}	2_{LOAN}	1	2_{ODA}	2_{GRANT}	2_{LOAN}
GRV_{t-1}	0.285**				0.429***			
	(2.12)				(3.12)			
TRADE	-0.750**	-0.305	-0.267	-0.416	-0.147	0.952	0.821	0.705
	(2.51)	(1.14)	(0.90)	(1.26)	(0.44)	(1.53)	(1.25)	(1.11)
INFL	-0.165***	-0.168***	-0.173***	-0.146***	-0.189***	-0.192**	-0.165*	-0.151*
	(4.25)	(4.78)	(4.40)	(3.40)	(3.84)	(2.29)	(1.83)	(1.81)
EXD	0.224***	0.105	0.013	-0.024	-0.112	0.203	0.032	0.148
	(3.04)	(0.79)	(0.10)	(0.15)	(1.03)	(0.60)	(0.10)	(0.45)
AGR	-0.876**	-0.383	-0.492	-0.831		0.799	0.210	0.452
	(2.89)	(0.77)	(0.92)	(1.44)		(0.64)	(0.16)	(0.39)
IND		0.243	0.241	0.294		0.880*	0.939*	0.959*
		(1.16)	(1.06)	(1.15)		(1.81)	(1.84)	(1.96)
ODA		-0.349**				-0.343		
		(2.73)				(1.08		
GRANT			-0.192**				0.019	
			(2.02)				(0.08)	
LOAN				-0.015				-0.139
				(0.20)				(0.98)
CIWAR		0.061	0.045	0.043		-0.021	-0.028	-0.019
		(1.00)	(0.69)	(0.59)		(0.14)	(0.18)	(0.13)
ECM_{t-1}		-0.796***	-0.847***	-0.827***		-0.934***	-0.846**	-0.871***
		(3.71)	(3.63)	(3.16)		(3.29)	(2.84)	(3.15)
Φ	-1.049							
CONST.	7.309***	0.018	0.018	0.006	2.411*	-0.002	-0.019	-0.015
	(3.74)	(0.48)	(0.45)	(0.14)	(1.84)	(0.02)	(0.20)	(0.16)
N	25	24	24	24	25	24	24	24
F-Value	66.90***	9.17***	7.51***	5.53***	19.78***	2.55*	2.23*	2.49*
Adj-R^2	0.9321	0.7397	0.6937	0.6117	0.7578	0.3508	0.3002	0.3419

Notes: GVR: the natural logarithm of the ratio of government revenue to GDP; TRADE: the natural logarithm of the ratio of trade volume (export plus import to GDP) to GDP; INFL: the natural logarithm of inflation rate; EXD: the natural logarithm of total external debt to GDP; AGR: the natural logarithm of the share of agriculture in GDP; PCGDP: the natural logarithm of real per capita GDP; ODA: the natural logarithm of the ratio of oversea development aid to GDP; CIWAR: the dummy variable for the occurrence of civil war in Uganda; ECM_{t-1}T: the residual of the regression of co-integrated variables lagged one period; Φ: is the coefficient capturing long-run effects of trade reform on government revenues.

Absolute t-values are reported in parentheses; *** significant at 1% level, ** significant at 5 % level and * significant at 10 % level.

CHAPTER 4

ANALYSIS OF TAX PERFORMANCE

4.1 Introduction

Like many other developing countries, Sub-Saharan African countries have undergone economic reforms at varying rates of implementation and commitment. The primary motivation for undertaking economic reforms has been the need to achieve key economic objectives, including: promoting economic growth, achieving macroeconomic stability, reducing fiscal vulnerability and, of late, alleviating poverty. Although some remarkable performances have been achieved, in the form of high economic growth rates and lower inflation rates, a remaining challenge is to address fiscal imbalances. The persistent increase of fiscal deficits in Tanzania, Kenya and Uganda despite implementing economic reforms suggests that revenue generating capacity of these three countries has not been commensurate with the growth of their expenditures. Since a large proportion of finance for expenditures comes from tax revenue, the lagging behind of revenues could be linked to the sluggishness of the tax system in generating adequate revenues.

Tanzania, Kenya and Uganda have implemented similar economic reforms, but the previous chapter demonstrates that the impact of reforms across these countries is not identical. The findings reveal that economic liberalization has contributed to the decline of government revenue in Uganda and had positive impact on government revenue in Kenya and Tanzania. The previous chapter also demonstrates that trade liberalization has contributed to the variations and fluctuations of government revenue in the three East African countries. This may reflect a combination of factors, including the inherent features of their tax systems; the resilience of the tax systems to changes in trade and tax policies and differences in macroeconomic conditions, economic structure, level of development and institutional framework.

The failure to generate adequate revenue, the varied revenue impact of trade liberalization in these countries, and the variations and fluctuations of government revenue call into question the effectiveness of the tax system in mobilizing revenue. This chapter examines the performance of the tax systems in Tanzania, Kenya and Uganda. The main focus is to determine factors affecting revenue mobilization in these countries. The findings emanating from this chapter are important from different perspectives. First, they have potential to provide information that can be used in revenue forecasting. This information is essential for budget planning and management purposes. Second, this information is crucial for design, formulation and execution of sound fiscal and macroeconomic policies.

The rest of this chapter is organized as follows. The review of the theoretical and empirical studies on tax performance is presented in the next section. It presents the theoretical, conceptual and measurements issues on tax performance as well as determinants of tax performance. Section three describes the trends of tax buoyancy of the tax systems of each country. This is followed by a presentation of an econometric analysis in section four. Concluding remarks are presented in section five.

4.2 Literature Review

4.2.1 Theoretical, Conceptual and Measurement Issues

The most basic characteristic of an effective tax system is that it generates sufficient revenues to finance government expenditures and development (Stepanyan, 2003; Indraratna, 2003; Teera and Hudson, 2004). The capability of the tax system of a country to raise adequate resources to finance government spending is determined by the policy tax structure, efforts by the government to collect taxes or effectiveness of tax administration, prevailing macroeconomic conditions, the level of development and the structure of the economy (Steenekamp, 2007; Teera

and Hudson, 2004). Tax performance is a function of the available tax base, the tax rates applied to the tax bases available, and the probability of collecting a specific levy.

A number of approaches have been used to assess tax performance. Among notable approaches are the tax effort approach, the regression approach, the average effective tax rate approach, tax elasticity approach and tax buoyancy approach. Others include the revenue adequacy, economic efficiency, equity and simplicity approaches (Osoro, 1993; Ahmed, 1994; Stotsky and Wolde-Mariam, 1997; Ghura, 2002; Steenekamp, 2003; Teera and Hudson, 2004; Gupta, 2007; Davoodi and Grigorian, 2007; Begum, 2007).

There are two methods that can be used to estimate the tax effort index. The first one is the tax revenue/GDP ratio. This is determined by taking the ratio of taxes in a country to a measure of the tax base, the GDP. It is assumed that the tax base is a proper measure of taxable capacity. However, the tax revenue/GDP ratio as a measure of tax performance is not a sufficient measure of taxable capacity because it may not capture all taxes linked to income, and does not take into account the distribution of income and how the income is earned from different sources, such as agriculture and the informal sector which also affect the country's tax system (Stotsky and Wolde-Mariam, 1997). The tax revenue/GDP ratio also does not provide insight into what other factors; such as economic structure, level of economic development and the administrative and political capability affect a country's tax performance (Begum, 2007).

The regression approach is another tax effort approach that has been extensively used to examine tax performance. Recent studies that have used the regression approach to assess tax performance are Teera and Hudson (2004), Agbeyegbe et al. (2006), Baunsgaard and Keen (2005); Khattry and Rao (2002), Stotsky and Wolde-Mariam (1997), Gupta (2007); Davoodi and Grigorian (2007), Ebrill et al. (1999), Ghura (2002); Indraratna, 2003; Begum, 2007). The regression approach involves regressing tax revenue/GDP ratios across countries against factors that are deemed to proxy for tax bases with explanatory variables that represent different elements

of taxable capacity and affect the country's ability to generate adequate tax revenues. The functional form of the regression is expressed as follows:

$$T/Y = f(X, Z) \qquad\qquad\qquad (4.1)$$

Where, T is tax revenue, Y is the tax base (GDP), X is a vector of factors that proxy for tax base and Z is vector of other explanatory variables that affect the country's ability to raise tax revenues. The actual tax ratio of an individual country is compared with the tax ratio predicted from the regression equation. The predicted tax ratio from the regression is then taken as a measure of taxable capacity, and the regression coefficients on **X** are interpreted as the average effective rates of the tax base in question. Then the ratio of the actual to the predicted tax ratios is computed and used as an index of tax performance. This measure of tax effort index is considered relatively better than a simple tax ratio analysis; in that it takes into account the differences among countries in their capacity to raise taxes (Stotsky and WoldeMariam, 1997; Begum, 2007). However, this regression approach has its own limitations as a measure of tax performance. The approach uses the predicted taxable capacity, which is based on average values for the sample which may have no relevance for a given country, making it is a poor normative indicator of taxable capacity (Ahmad and Stern, 1989; Addison and Levin, 2006).

Furthermore, both the tax revenue/GDP ratio and regression approach are generally static in nature. They only describe tax revenue at a given point in time (Begum, 2007; Steenekamp, 2008; Rajaraman et al., 2005). They can not explain plausible short-run and long-run dynamic changes in the tax system. It is important to use measures that are able to capture dynamic changes in a system for revenue forecasting purposes, and to help assess the progressiveness of a tax system (Indraratna, 2003). Tax elasticity and buoyancy are measures which can capture short and long-run dynamic changes in a tax system (Indraratna, 2003; Begum, 2007; Steenekamp, 2008; Rajaraman et al., 2005).

Tax elasticity is defined as the percentage change in total tax or individual taxes associated with a given percentage change in GDP. The use of the tax elasticity typically is based on the assumption that there are no changes in the tax base, in the statutory rates of existing taxes, in administrative efficiency and in the type of taxation used. That is, there are no changes to the tax structure and tax system (Osoro, 1993; Steenekamp, 2008; Rajaraman et al., 2005; Indraratna, 2003; Begum, 2007 Creedy and Gemmell, 2001; Kusi, 1998; Chipeta, 1998; 2002; Ariyo, 1997; Ayoki, et al. 2005; Murith and Moyi, 2003). If so, it is assumed to capture automatic or natural responsiveness of tax yields to changes in income.

Tax elasticities can be estimated using two methods. The first, involves estimating the ratio of the weighted sum of elasticities of individual taxes to changes in income. Overall tax elasticity for the individual tax is determined by:

$$E_{TY} = \frac{T_1}{T^*_t}\left(\frac{\Delta T_1}{\Delta Y}\cdot\frac{Y}{T_1}\right) + \frac{T_k}{T^*_t}\left(\frac{\Delta T_k}{\Delta Y}\cdot\frac{Y}{T_k}\right) + ... + \frac{T_n}{T^*_t}\left(\frac{\Delta T_n}{\Delta Y}\frac{Y}{T_n}\right) \qquad (4.2)$$

where: E_{TY} = elasticity of tax revenue to income (GDP); T^*_t = adjusted total tax revenue; ΔT = changes in adjusted tax revenue; T_k, T_n = adjusted tax revenue from k^{th} and n^{th} taxes in a system of n taxes; Y = income (GDP) and ΔY = changes in GDP.

The second approach involves estimating a double natural logarithm regression equation for adjusted tax revenues on national income (GDP) (Teera and Hudson, 2004; Osoro 1993; Indraratna, 2003; Begum, 2007; Steenekamp, 2008; Creedy and Gemmell, 2001; Kusi, 1998; Chipeta, 1998; 2002; Ariyo, 1997; Ayoki, et al. 2005; Murith and Moyi, 2003). It is estimated from the following Cobb-Douglass regression equation:

$$T^* = \gamma Y^\beta \varepsilon \qquad (4.3)$$

where T* is annual adjusted tax revenue, Y is annual nominal gross domestic product (GDP), ε is the multiplicative error term, β provides the estimates of tax elasticity and $\ln\gamma = \alpha$ is a constant. The logarithmic transformation gives the following linear form:

$$\ln T^*_t = \alpha + \beta_1 \ln Y_t + \varepsilon_t \qquad\qquad (4.4)$$

where β_1 is tax elasticity. A value less than one suggests low tax elasticity, which implies that the tax system is incapable of meeting growth in fiscal expenditures. Whereas a value greater than one suggests increased responsiveness and demonstrates the efficacy of the tax system, hence suggesting that tax revenue collections are able to meet rising expenditures (Creedy and Gemmell, 2001; Kusi, 1998; Chipeta, 1998; 2002; Ariyo, 1997; Ayoki, et al. 2005; Murith and Moyi, 2003).

However, where tax policy instruments are subject to change from time to time, the elasticity of tax revenue may be difficult to estimate with appreciable degree of accuracy (Rajaraman et al., 2005). In countries such as Tanzania, Kenya and Uganda that have experienced many changes in their tax policies, it may be difficult to identify and separate all discretionary tax policies that have been undertaken in the country. In this context, where tax policy parameters are in a state of constant flux, the tax buoyancy provides an alternative approach to evaluating tax performance. Tax buoyancy estimates the revenue response with endogenized tax policy. Tax buoyancy measures the total response of a tax to a change in income and it shows the growth that result from the automatic growth of the base caused by an increase in GDP and from discretionary tax changes. Unlike tax elasticity, the estimation of tax buoyancy does not require that discretionary changes in tax policy be controlled (Osoro, 1993, 1994; Greedy and Gemmell, 2001; Kusi, 1998; Chipeta, 1998; 2002; Ariyo, 1997; Ayoki, et al. 2005; Murith and Moyi, 2003; Teera and Hudson, 2004; Indraratna, 2003; Begum, 2007; Steenekamp, 2007).

Tax buoyancy similarly can be estimated in two ways. First by calculating the ratio of percentage change in tax revenue to percentage change in GDP as follows:

$$b_t = \%\Delta T_t / \%\Delta Y_t \qquad\qquad (4.5)$$

Where: $\%\Delta T_t = [(T_{i+1}-T_i)/T_i]100$ is the percentage change in tax revenue between year i and year i+1 and $\%\Delta Y_t = [(Y_{i+1}-Y_i)/Y_i]100$ is the percentage change in GDP between year i and year i+1. Second, is using a double natural logarithm regression equation, in which case tax revenue is regressed against the tax base (GDP) as follows:

$$\ln T_t = \beta + \delta \ln Y_t + \varepsilon_t \qquad\qquad (4.6)$$

Where: T is unadjusted tax revenue, Y is nominal GDP, β is the constant, δ is the tax buoyancy and ε is a stochastic disturbance term.

There are conceptual similarities and differences between tax elasticity and buoyancy approaches. They are both estimated as a ratio of the percentage change in tax revenue to a given percentage change in GDP. The interpretation of the tax elasticity and buoyancy coefficients is the same. That is, a coefficient of one indicates a commensurate growth of both revenue and GDP, while a coefficient less than one indicate lagged revenue growth compared to GDP growth. A coefficient of more than one is an indication of a higher revenue growth than GDP growth (Kusi, 1998; Chipeta, 1998; 2002; Ariyo, 1997; Ayoki, et al. 2005; Murith and Moyi, 2003; Osoro 1993; 1994).

The differences between tax elasticity and buoyancy is that tax elasticity measures the built-in response of revenues to changes in income, while tax buoyancy quantifies the total change in revenue accompanying changes in income. That is, tax elasticity measures the responsiveness of tax revenue without taking into account the effects of discretionary changes in

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tax policy, assuming that no changes have taken place within the tax structure of the tax system over time. Therefore, the estimation of tax elasticity requires an adjustment to the actual revenue series so as to separate the growth of revenue arising from discretionary changes from that due to automatic changes. Tax buoyancy on the other hand, measures the responsiveness of revenues including changes in the tax system and its estimation does not require adjustments to the actual tax revenue (Creedy and Gemmell, 2001; Kusi, 1998; Chipeta, 1998; 2002; Ariyo, 1997; Ayoki, et al. 2005; Murith and Moyi, 2003; Osoro 1993; 1994; Indraratna, 2003; Steenekamp, 2008).

Therefore, in developing countries such as Tanzania, Kenya and Uganda, where tax policies, tax structure and tax systems have significantly changed, tax elasticity of tax revenue would not provide the best tax performance indicator. Instead, tax buoyancy would be an appropriate measure of tax performance. In light of the above discussion, the tax buoyancy approach is adopted to evaluate the responsiveness of the tax system in Tanzania, Kenya and Uganda.

4.2.2 Determinants of Tax Performance: Empirical Evidence

The empirical literature on determinants of tax performance is vast. The most recent studies on this area are Ghura (2002); Teera and Hudson (2004); Khattry and Rao, (2002); Gupta (2007); Steenekamp (2007); Agbeyebe et al. (2006); Davoodi and Grigorian (2007); Stotsky and WoldeMariam (1997); Baunsgaard and Keen (2005). However, most of these studies have used a static measure of tax performance, the revenue/GDP ratio, rather than examining short-run and long-run dynamic changes taking place in the tax system of a country over time.

Exceptions are studies by Creedy and Gemmell, (2001); Kusi, (1998); Chipeta, (1998); (2002); Ariyo, (1997); Ayoki, et al. (2005); Murith and Moyi, (2003); Osoro (1993); Indraratna, (2003); Begum, (2007). These studies have employed the dynamic indicators of tax performance, tax elasticity and tax buoyancy. A limitation of these studies, however, is that they have used very short time series data. With short time-series one cannot sufficiently capture and separate short-

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term and longer-term dynamics (Ericsson and Mackinnon, 2002; Baunsgaard and Keen, 2005; Agbeyegbe et al., 2006). This is important since economic reforms may take a long time to exert their potential impacts in the economic system (Blejer and Cheasty, 1990).

These studies have all used more or less the same explanatory variables as determinants of the responsiveness of a tax system. In addition to the level of development of a country proxy by per capita income, level of literacy, communication, extent of urbanization and population size and density, other factors include openness of the economy, structure of the economy reflected by the size of manufacturing/industry, agriculture and informal sector in GDP and the macroeconomic environment reflected by inflation rate, size of the fiscal deficit and the debt size. How these factors affect revenue generation capacity was explained in chapter three.

Other factors affecting the revenue generating capacity of a tax system include: the administrative and political constraints on the fiscal system, social and political values, indigenous institutional arrangements, popular demand for government spending and other factors which condition overall willingness to pay taxes. Ultimately, the taxable capacity of the country's tax system depends on the willingness and ability of people to pay taxes and the willingness and ability of the government to collect taxes. The willingness and ability of people to pay taxes depends, among other things, on the types of goods and services provided by the government, which varies with the degree of participation of the people acting as citizens (Teera and Hudson, 2004; Steenekamp, 2007).

This study makes a contribution to the existing literature on tax performance in three ways. First, it examines the performance of the tax system using a dynamic index measure of tax performance-the tax buoyancy, and also employs a dynamic econometric approach – an error correction regression analysis. This approach allows capturing both short-run and long-run tax performance. Second, the study seeks to explain observed differences in the performance of tax systems of the three East African countries by analyzing key determinants of these differences. Third, the study uses a longer time-series (data from 1970-2005) compared to other studies that

have been conducted in the region. With a relatively longer time series, this study is able to identify short-run and long-run dynamic tax performance.

4.3 Tax Revenue Performance in East Africa

Tax revenue performance will be assessed based on the trends of buoyancy coefficients of the different tax categories and the overall changes in total tax. The aim is to trace and evaluate the changes in the tax buoyancy coefficients over the different policy episodes through which Tanzania, Kenya and Uganda have passed. In addition, the trends in tax buoyancy are compared between the pre-reform and post-reform period, in order to capture the overall impact of economic reforms on the performance of the tax system as a whole.

It is important to provide a postmortem on the evolution of tax performance in these different policy episodes as this has important implications for identifying effective policy packages and determinants of tax revenue performance. The analysis shows that the performance of the tax system in Tanzania, Kenya and Uganda has been generally improving since the initiation of economic reforms in the three countries, though varying over time. Tables 4.1, 4.2, 4.3, 4.4, and 4.5 demonstrate this observation. This suggests that tax policy reforms undertaken during the period under study have contributed to the improvement of tax revenue performance in al three countries. However, overall the analysis shows that tax performance has not been impressive in Tanzania as compared to Kenya and Uganda.

4.3.1 Tanzania

The evolution of Tanzania's tax revenue and overall tax system performance is depicted in Tables 4.1 and summarized in Tables 4.4 and 4.5. As pointed out earlier the tax revenue performance in Tanzania has been sluggish though with some slight improvement over time. This is substantiated by the overall tax buoyancy coefficient of total tax revenue and its tax components, which generally are less than one. This suggests that the responsiveness of the tax

revenue and tax system to changes in the level of economic activity and discretionary tax policies implemented in Tanzania for the period under study has been sluggish.

Although overall Tanzania's tax system paints a poor performance, there are some gains in tax revenue performance for some individual taxes and for the tax system as whole over time. The tax buoyancy of the tax system (i.e. total tax revenue) rose from an average of 0.91 in 1987-92 to 0.98 during the period 1993-95, before it tapered to 0.87 in 1996-2005. This development can largely be attributed to the improved performance of sales and excise taxes (VAT), and income taxes. The support for this observation is linked to increasing buoyancy coefficients of the individual taxes. The buoyancy coefficient of sales and excise tax (VAT) increased from an average of 0.88 in 1970-80 to 0.92 in 1987-92, and rose further to 0.98 in 1993-95, before dropping to 0.87 in 1996-2005. Similarly, the buoyancy coefficient of income tax increased from an average of 0.88 in 1970-80 to 0.92 in 1986-92, and 1993-95, before falling to 0.87 in 1996-2005. This could provide an indication that tax policy reforms implemented in the mid-1980s and 1990s explain this improvement in tax revenue and tax performance in Tanzania.

It is also worth noting that during the pre-crisis period the tax system performed better than during the crisis period and post reform period, except for trade taxes. During the pre-crisis period the tax buoyancies for sales and excise taxes (VAT) and income taxes are greater than one, suggesting that during this period the tax system was buoyant. The less than one tax buoyancy for trade tax during the pre-crisis period could be attributable to the fact that during this period Tanzania followed an inward-looking import-substitution strategy and therefore international trade was less important to the country.

A comparison between the pre- and post-reform period, Table 4.4 shows that tax buoyancy of tax revenue improved slightly from 0.87 to 0.90. The tax buoyancy of trade tax remained almost constant, averaging at 0.999. However, the overall performance of the tax system and its tax components has not been impressive for the entire period under investigation as indicated by a tax buoyancy of less than one in all cases.

4.3.2   Kenya

Kenya's tax revenue and tax system performance has responded to changing tax policy implemented in the country. This observation is supported by the increasing trends of buoyancy coefficients of the overall tax system and individual taxes throughout much of the period under investigation as depicted in Tables 4.4 and 4.5. That is, the tax buoyancy has improved since 1987-91, the period when economic reforms were initiated. There has been a slight decline in the period 1997-2005.

The improvement in the performance of the Kenyan tax system can be seen on the buoyancy coefficient of sales and excise tax, rising from an average of 1.05 in the pre-crisis period to 1.10 during the reform period (1987-91). It then decreased slightly to 1.02 in 1992-96 and rose to 1.09 in 1997-2005. The improvement in the Kenya's tax revenue performance coincides with the period during which the government undertook tax reforms (i.e. in the mid-1980s and 1990s) to improve the tax system. The decline in the tax buoyancy for international trade taxes on the other hand, could be associated with the fact that the Kenyan government reduced the tariff rates as part of its commitment to various international trade agreements.

Comparing the performance of the Kenyan tax system between the pre-reform and post-reform periods, Table 4.4 shows that the Kenyan tax system has become responsive to changes in economic activities following the implementation of tax reform programs in the mid-1980s and 1990s as described in chapter two. The tax system has become more responsive after the 1987 tax reform. Overall the tax buoyancy improved slightly from 1.05 in the pre-reform period to 1.06 during the post-reform period. A reasonable explanation for this result is that tax reform implemented in the country led to the improvement of the domestic tax structure, thus increase in revenue collection from sales and excise and income taxes. This is also attributed to the reduction in tax exemptions, the inclusion of many other commodities in VAT brackets, and the increase in the tax base.

Overall, the Kenya tax system has been impressive as indicated by the greater than one tax buoyancy for total tax revenue, VAT and income tax. That is the taxes revenue generating capacity has been growing at a high rate than the growth of the national output (GDP), despite the government's shift from trade taxes as a major source of revenue to domestic taxes. Less than one tax buoyancy for trade tax is an indication of the switch from trade taxes to domestic taxes as sources of government revenue in Kenya.

4.3.3   Uganda

Uganda's tax revenue and tax system shows a strong improvement of performance from negative values of buoyancy coefficients to greater than one. Tables 4.4 and 4.5 depict a summary of the evolution of buoyancy coefficients for Uganda's overall tax system and its tax components during different policy episodes over the period 1977-2005[3]. Overall, the tax buoyancy coefficient for the Uganda's tax system for the whole period under study-1977-2005 averaged at 1.1. That is, the revenue generating capacity of the tax system in Uganda was growing faster than the growth rate of the economy.

The figures in Table 4.5 show that the tax system during the pre-crisis period 1977-79 was buoyant as compared to the crisis period. The tax buoyancy coefficients of all the tax categories and total tax revenue are greater than the buoyancy coefficients during the crisis period. Comparing the performance of the tax categories for the period between 1980 and 1986, the performance is impressive except for sales and excise tax (VAT) and trade tax in which the tax buoyancy is less than one. Since the period 1980-86 the improvement of the Uganda's tax system performance has been remarkable. In all cases, the tax buoyancy was greater than one throughout the period between 1987 and 2005.

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[3] The series for Uganda is shorter than that for Tanzania and Kenya. The data for Uganda were available for the period 1977-2005 whereas that for Tanzania and Kenya were available for the period 1970-2005

Overall, a comparison of the Uganda's tax revenue and tax system performance between the pre-reform and post reform period shows that total tax revenue became more responsive to changes in economic activities as a result of economic reforms implemented in the country. That is, the revenue generating capacity of the tax system was growing relatively faster than the growth rate of the economy. The tax buoyancy of the trade tax, VAT and income tax declined during the post-reform period. The tax buoyancy for the Uganda's overall tax system improved slightly from 1.08 to 1.10.

4.4 Econometric Analysis

4.4.1 Methodology

The tax buoyancy approach is adopted to assess tax performance in this study. Tax buoyancy measures the changes in tax revenue due to changes not only in income but also in tax policy. It also sheds light how responsive the tax system was in terms of generating adequate revenue to offset revenue lost as a result of tariff cuts.

The first step was to estimate tax buoyancy coefficients of each tax and the overall tax system. The double natural log regression approach (equation 4.6) was used to estimate tax buoyancy coefficients of each tax. The estimated buoyancies for each tax and the overall tax system for the each country are presented in Tables 4.1, 4.2 and 4.3 respectively. Then to assess factors affecting tax performance, tax buoyancy coefficients of the different tax categories and total tax revenue are regressed against factors which are hypothesized to affect tax performance. The basic estimation equation is specified as follows:

$$b_t = \gamma + \beta_1 \mathbf{OP}_t + \delta_i \mathbf{X}_t + \varepsilon_t \tag{4.7}$$

Where b_t is the estimated tax buoyancy, OP_t is the measure of openness (trade liberalization), X_t is vector of determinants of tax buoyancy and ε_t is a stochastic disturbance term. Since the objective of this study is to examine short-run and long-run responsiveness of the tax system for the East African countries, a general autoregressive distributed lag-model is specified as follows:

$$b_t = \gamma + \eta b_{t-1} + \beta_1 \mathbf{OP}_t + \beta_2 \mathbf{OP}_{t-1} + \delta_{i1} \mathbf{X}_t + \delta_{i2} \mathbf{X}_{t-1} + \varepsilon_t \qquad (4.8)$$

Estimating equation (3.2) can generate spurious results when time-series are not stationary. With non-stationary time-series data, the best alternative to explain the dynamics of changes in policy reforms is the error-correction model. This involves re-arranging equation (4.8), which gives the error-correction model:

$$\Delta b_t = \alpha + \beta_1 \Delta OP_t + \gamma \varepsilon_{t-1} + \omega_t \qquad (4.9)$$

Where $\gamma = (\eta-1)$, is the adjustment coefficient (i.e. the estimated coefficient on the error-correction term). The expected value of adjustment coefficient is negative, which implies that there are dynamic stability in the long-run within the error-correction estimation model; $\varepsilon_{t-1} = (b_{t-1} - kOP_{t-1} + h\mathbf{X}_{t-1})$, is the error correction term, which can also be obtained directly from the residuals of the co-integration regression equation (4.8); $k = (\beta_1+\beta_2)/(1-\eta)$, and $h = (\delta_1 + \text{---} + \delta_5)/(1-\eta)$.

4.4.2   Estimation Results

Before proceeding to estimating the error-correction model it is important to test for the presence of unit root (i.e. whether the time-series data is stationary or non-stationary) and to ascertain whether the variables are co-integrated. This involves, first, determining the order of

integration for each of the variables under consideration; this involves differencing each series successively until stationary series are obtained. The second step is to estimate the co-integration regression with ordinary least squares, using variables with the same order of integration. The third is to test for stationary residuals of the co-integration regressions. The final step is to estimate the error-correction models.

Unit Root Test

Testing for stationary series, a unit root test was performed for each variable over the 1970 to 2005 time period. In their levels of the series, for some variables (i.e. growth of agriculture for Tanzania and growth of manufacturing and public fiscal deficit for all countries) the null hypothesis of non-stationary of the series was rejected and other with no rejection of the hypothesis of non-stationary of the series at the 1 percent and 5 percent level. For those variables which were not stationary in their levels, after differencing we reject for each series the null hypothesis of non-stationary of the series at 1 or 5 percent levels. To minimize the possibility of falsely rejecting the true null hypothesis or accepting the null hypothesis which is false, both the augmented Dickey Fuller Test (ADF) and Pillips-Perron (P-P) non-parametric test were used to test for the presence of unit root. ADF test results are sensitive to different lag lengths of the dependent variable, thus biased towards non-rejection of unit roots when structural breaks are incorporated in the data (Indraratna, 2003; Li, 2001). The ADF test was therefore supplemented by the P-P test to confirm for the presence of unit root. The ADF and P-P unit root tests are summarized in Tables 4.6. The results show that after taking the first differences most of the variables became integrated of order 1. Other variables were integrated of order 0 (growth of agriculture for Tanzania and growth of manufacturing and public fiscal deficit for all countries) and 2 (growth of urban population for Kenya). Variables integrated of order 0 were also included in the error-correction estimation equation after taking their first differences so that all variables included in the regression were of the same order of integration and for interpretation purposes..

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Co-integration Analysis

Table 4.7 reports results for co-integration analysis (unit root test for the residuals-the error-correction term). Co-integration regression for each tax category and total tax revenue for Tanzania, Kenya and Uganda respectively are presented in Tables 4.8, 4.9 and 4.10 under column 1. Since more than one independent variable is included in the co-integration analysis, the ADF and PP tests are not appropriate (Mackinnon, 1991). The critical values generated by Mackinnon, (1991) and Ericsson and Mackinnon (2002) were used to test for the stationarity of the residuals from the co-integration regression. The unit root tests for the residuals in Table 4.7 fail to reject the null hypothesis of non-stationary series, suggesting that the variables are co-integrated. Therefore, we proceed with the final stage of estimating the error-correction model to examine the dynamics of revenue performance in Tanzania, Kenya and Uganda.

Error-Correction Estimation Results

Based on co-integration analysis, the error-correction estimation is valid and therefore we can proceed to examine short-run and long-run relationships of the different tax categories and overall tax system and its determinants. The error-correction results for each tax category and the overall tax system are presented under column 2 of Tables 4.8, 4.9 and 4.10 for Tanzania, Kenya and Uganda respectively. The interesting observation to note is the negative and statistically significant coefficient of the error correction term for all the tax categories and overall tax system, with exception of sales and excise tax (VAT) for Tanzania, but it has the expected negative sign. This suggests that in almost all types of taxes, tax revenue tends to move towards the equilibrium as a result of the changes in the variables included in the co-integration regression. A close examination of results in Tables 4.8, 4.9 and 4.10 suggests that there are differences among the three countries which are worth noting.

Tanzania

Table 4.8 reports both the co-integration (column 1) and error-correction (column 2) regression results for all tax categories and overall tax system in Tanzania. The results show that there are short-run and long-run relationships between total tax revenue and growth of GDP, openness to international trade, official development aid as well as total external debt; between trade tax collection and growth of GDP, inflation, openness to international trade and total external debt; and between income tax revenue collection and per capita GDP, inflation, growth of urban population and openness. This is strongly supported by the adjustment coefficients (error-correction term), which in all cases are negative, suggesting short-run and long-run dynamic stability. That is the changes in tax revenue collection from all tax categories are equilibrated by the growth of GDP, changes in the inflation rates, total external debt, official development aid, growth of urban population and the more the country is open to the rest of the world. The coefficients on a lagged dependent variables for the sales and excise tax (VAT) and income tax are positive and statistically significant. This is an indication that there are partial short-run and long-run adjustments in sales and excise and income tax revenue generation over time in Tanzania.

It is also worth noting significant short-run effects on some of the variables included in the error-correction model. In the short-run, changes in total external debt positively and significantly bolster tax revenue collection. This suggests that with a larger public debt the government is pressurized to collect more revenue in order to service that debt. There seem to be no significant short-run effects of the growth rate of GDP, changes in the inflation rate, growth of agriculture and manufacturing, growth of the urban population, growth of the public budget deficit and greater openness to trade on overall tax performance.

Trade tax revenue collection is statistically associated with the growth of GDP, changes in the inflation rate and trade openness. In the short-run, the growth of GDP seems to discourage revenue collection from trade taxes, as indicated by a negative coefficient. This is expected,

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because economic theory suggests that as the level of development of the country rises, the importance of trade tax as sources of government revenue diminishes. Therefore, the higher the growth of GDP the less important trade taxes becomes as a source of government revenue.

Inflation displays a positive relationship with trade tax, suggesting that high inflation rates boosts revenue generation from trade taxes. In the short-run openness to trade has resulted to decline in revenue generation from trade taxes. This reflects the significance of the changes that have been undertaken to liberalize trade in Tanzania. Other remaining variables do not show any significant short-run relationship with trade tax revenue mobilization. The growth of agriculture is inversely associated with sales and excise tax revenue generation. This is supported by a significant negative coefficient on agriculture. Results in Table 4.8 show that most of the variables in the VAT and income tax error-correction regressions had no significant short-run influence of revenue generation. The growth of the manufacturing and ODA show a significant negative correlation with the generation of revenue from other taxes and the growth of urbanization is positively correlated with revenue generation from other taxes in Tanzania.

Kenya

The estimation regression results of co-integration and error-correction equations for Kenya are presented in Table 4.9 under column 1 and 2, respectively, for all tax categories except other taxes[4] and total tax revenue. A close examination at the results indicate that there exist short-run and long-run relationship between revenue collection in all tax categories as well as total tax revenue and growth of GDP, openness to international trade, official development aid, inflation and growth of the manufacturing sector. Strong support for the existence of dynamic stability is provided by the statistically significant negative sign of the adjustment coefficients

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[4] The other taxes categories regression was not estimated because there were not sufficient observations to estimate the dynamic error-correction model. The Kenyan government has been abolishing other taxes from time to time, thus empty entries for many years.

(error-correction term) for total tax revenue and its components. That is in the long-run revenue generation tends to move towards the equilibrium in response to the growth of GDP, and changes in the openness to international trade, official development aid, inflation and growth of the manufacturing sector.

The results also show that there are partial adjustments in revenue generation across all tax categories and overall tax system in Kenya over time. This is substantiated by significant positive coefficients on lagged dependent variables in all co-integration regression equations (see Table 4.9, column 1). There is no evidence for the existence of significant long-run effects of trade reforms on tax revenue generation in Kenya.

In the short-run, changes in official development aid inhibit revenue generation in Kenya. This is substantiated by a negative statistically significant coefficient of ODA. The bulk of foreign aid that has been flowing in Kenya is in the form of grant (see Table 2.6). A plausible explanation is that grants reduce incentives for government to adopt good fiscal policies and maintain efficient institutions in tax administration. Short-run changes in the government budget deficit and ODA significantly affect trade revenue collection in Kenya. The growth in the government budget deficit negatively affects trade revenue collection, whereas ODA is positively associated with trade revenue generation.

Short-run changes in inflation are associated with a decline in income tax revenue generation in Kenya, as indicated by a negative and statistically significant coefficient on inflation. Growth of the urban population and openness to international trade contribute to revenue generation from sales and excise taxes.

Uganda

Table 4.10 summarizes both the co-integration (column 1) and error-correction (column 2) estimation results for Uganda from 1977 to 2005. The results demonstrate that there are short-run and long-run relationships between tax performance and growth of GDP, openness to

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international trade, official development aid, inflation and growth of the manufacturing sector in Uganda. This is substantiated by the significant and negative coefficient of the error-correction term in all tax categories. This implies that in the long-run revenue generation tends to move towards the equilibrium due to changes in the growth rate of GDP, openness to international trade, official development aid, inflation and growth of the manufacturing sector. Coefficients on lagged dependent variables are negative and statistically significant in the co-integration regression for overall tax system and trade tax. This is an indication that there are partial adjustments over time in total tax revenue and trade tax revenue generation in Uganda. It can be noticed from the results that there are no strong evidence to support the existence of long-run effects of trade reforms on tax revenue generation in Uganda.

The results indicate that in the short-run, increases in inflation rates negatively affect revenue generation from trade taxes, income and sales and excise tax. This is substantiated by negative coefficients of inflation on these taxes. However, the results show that inflation rate has been associated with overall revenue mobilization in Uganda, suggesting compensating shift in the composition of taxes. Strong support is provided by the positive and statistically significant coefficient on inflation with total tax revenue. Results in Table 4.10 reveal that in the short-run the growth of the manufacturing sector, growth of urban population, openness to trade and total external debt contribute to less revenue generation in Uganda, as indicated by significant and negative coefficients. In the short-run, the results show that the growth of manufacturing, openness to international trade and total external debt bolster revenue collection from trade, income and sales and excise taxes. This is substantiated by the positive sign and statistically significant coefficients on these taxes.

4.5 Conclusions

The empirical results of this chapter corroborate and extend the results presented in Chapter Three. In that chapter, it was demonstrated that trade liberalization depressed government revenues in Uganda, as opposed having no significant effect in Kenya, and a positive impact in Tanzania despite the observed declining trend in government and tax revenue. The findings in this chapter paint a similar picture. The results suggest that economic reforms implemented in the three countries have contributed to improvements in tax performance. However, the response of the tax system in Tanzania has remained relatively sluggish compared to its counterparts in Kenya and Uganda, whose tax performances have been strong since the implementation of economic reforms despite some downs and ups from year to year.

This chapter confirms that the observed decline in the share of government revenue in GDP in Tanzania described in Chapter Three was due to the failure of the tax system to generate adequate revenue. This is supported by a less-than-one tax buoyancy of the overall tax system (total tax revenue) and its tax components. It is unambiguous at this point to attribute the observed decline in the share of government revenue and tax revenues in GDP to tax revenue leakages and weaknesses and inefficiencies in tax administration and tax collection of the tax system in Tanzania.

The results suggest that the differences in tax revenue performance among these countries are attributable, at least in part, to variations in their initial conditions. That is, macroeconomic environment, underlying economic structure, level of development and efficiency of tax administration have been fundamental to overall tax performance in the three countries. For instance, the negative impact of inflation on overall tax system (total tax revenue) in Tanzania can be contrasted to its positive impact in Kenya and Uganda. Similarly, the positive impact of growth of the manufacturing and agricultural sector on revenue generation in Tanzania and Kenya can be contrasted to their negative impacts in Uganda.

All three countries have a potential for generating more revenue, if and only if they can address underlying structural weaknesses in their tax systems and their economies as a whole. This is reflected by the negative impact of the growth of GDP and public budget deficit in Tanzania, and of the growth of the manufacturing sector and urban population in Uganda on tax revenue generation, as well as negative impact of the growth of manufacturing sector and GDP on sales and excise and income taxes in Kenya. Furthermore, the buoyancy of Uganda's tax system demonstrated in this chapter does not translate into the levels of government revenue/GDP ratio described in chapter three. This is an indication of existence of some structural and institutional problems related to weaknesses and inefficiencies in tax administration and tax collection, and tax revenue leakages due to tax evasion, tax exemptions, non-tax compliance and embezzlement of collected taxes that need to be addressed in order to exploit the full potential of revenue generation.

Based on this evidence, it is clear that all three countries need to address problems associated with tax revenue leakages, such as abolishment of unnecessary tax exemptions and reduce tax evasion. All three countries need to improve tax administration and institute strong legal frameworks in tax management.

The result suggest that East African governments should also focus at providing incentives for the development of the manufacturing sector and commercialization of the agricultural sector, as one of the strategy of raising income and sales and excise taxes as well as trade taxes.

Table 4.1:   Estimated Tax Buoyancies in Tanzania, 1970-2005

YEAR	Overall Tax Buoyancy	Tax Buoyancy for Trade Tax	VAT Buoyancy	Tax Buoyancy for Income Tax	Other Tax Buoyancy
1970	0.9597	0.9046	0.5786	1.0886	0.7703
1971	1.0137	0.9050	0.5927	1.0043	0.7866
1972	0.8811	0.9179	0.5602	0.9700	0.7608
1973	0.7599	0.9172	0.7655	0.9688	0.7519
1974	0.7527	0.9651	1.0831	0.7867	0.7883
1975	0.7970	0.9875	1.0596	0.8752	0.7809
1976	1.0335	1.0137	0.9459	0.8309	0.8431
1977	0.9126	1.0347	0.9296	0.8140	0.7843
1978	0.8567	0.9117	0.9519	0.8023	0.8345
1979	0.8906	0.9865	1.0074	0.7408	0.8394
1980	0.8641	1.0240	1.0142	0.7572	0.8020
1981	0.8788	1.0366	1.0843	0.8276	0.8276
1982	0.8464	1.0798	1.0802	0.8315	0.7963
1983	0.8260	1.0690	1.0806	0.7829	0.7999
1984	0.8966	1.0852	1.0939	0.7969	0.8928
1985	0.9233	1.0533	1.0413	0.9126	0.8082
1986	0.7637	1.0877	0.9827	0.8995	0.7543
1987	0.9271	1.0260	0.9760	0.9449	0.7901
1988	0.9070	1.0286	0.9734	0.9036	0.7885
1989	0.7889	1.0089	1.0876	0.8254	0.8106
1990	1.0055	0.9801	0.8799	0.9929	0.8182
1991	0.9364	0.9407	0.7474	0.9100	0.8144
1992	0.9190	0.9676	0.8757	0.9124	0.8032
1993	1.0358	1.0110	0.8361	0.9373	0.8061
1994	0.9591	0.9983	0.8732	0.9338	0.7947
1995	0.9288	0.9844	0.8530	0.8856	0.7964
1996	0.9018	0.9792	0.8203	0.8866	0.7845
1997	0.8647	0.9713	0.8445	0.8859	0.7825
1998	0.8699	0.9792	0.8587	0.8668	0.7845
1999	0.9069	0.9933	0.9031	0.8968	0.7967
2000	0.9051	0.9988	0.8949	0.8511	0.7985
2001	0.8732	0.9843	0.9321	0.9069	0.7991
2002	0.8695	0.9891	0.9381	0.9040	0.7962
2003	0.8464	0.9906	0.9527	0.8689	0.7962
2004	0.8193	0.9880	0.9763	0.8241	0.8089
2005	0.7960	0.9977	1.0057	0.7925	0.8143

Table 4.2: Estimated Tax Buoyancies in Kenya, 1970-2005

YEAR	Overall Tax Buoyancy	Tax Buoyancy for Trade Tax	Tax Buoyancy for Sales and Excise Tax (VAT)	Tax Buoyancy for Income Tax
1971	0.9979	0.9473	NA	1.1328
1972	0.9864	0.9554	NA	1.1840
1973	1.0197	1.0144	0.4325	1.1300
1974	0.9718	0.9788	1.0888	1.0353
1975	0.9366	0.9915	1.1591	1.2070
1976	0.9631	1.0190	1.1643	1.1555
1977	1.2261	1.0392	1.1171	1.0716
1978	1.0699	0.9275	1.1809	1.2295
1979	1.0966	0.9393	1.1695	1.1794
1980	1.0606	0.9551	1.2422	1.1519
1981	1.0464	0.9309	1.2389	1.1398
1982	1.0513	0.9231	1.2161	1.0043
1983	1.1049	0.9585	1.1819	1.0143
1984	1.0950	0.9728	1.2146	0.9793
1985	1.1163	1.0042	1.0637	1.0214
1986	1.1043	0.9984	1.0697	1.0285
1987	1.0777	0.9794	1.0978	0.9910
1988	1.0753	0.9838	1.1133	0.9995
1989	1.0780	0.9888	1.1169	0.9853
1990	1.0970	0.9884	1.0642	0.9982
1991	1.0999	1.0038	1.0947	1.0305
1992	1.0988	1.0044	1.0058	1.0451
1993	1.0955	0.9699	0.9958	0.9810
1994	1.0591	0.9327	1.0517	1.2759
1995	1.0780	0.8907	1.0203	1.2632
1996	1.0745	0.8877	1.0100	1.2322
1997	1.0963	0.8987	0.9812	1.1445
1998	1.0781	0.8829	1.0014	1.1664
1999	1.0730	0.8896	1.0239	1.1107
2000	1.0844	1.0317	1.0219	1.0335
2001	1.0860	0.9128	1.0419	0.9893
2002	1.0985	0.9268	1.1782	1.0117
2003	0.9339	1.0902	1.1767	1.1017
2004	0.9199	1.0692	1.1612	1.0869
2005	0.8985	1.0877	1.1841	1.1634

Table 4.3:   Estimated Tax Buoyancies in Uganda, 1977-2005

YEAR	Overall Tax Buoyancy	Tax Buoyancy for Trade Tax	VAT Buoyancy	Tax Buoyancy for Income Tax	Other Tax Buoyancy
1977	0.9931	1.3312	1.4512	1.5349	1.5141
1978	0.9571	1.4852	1.3776	1.5543	1.5402
1979	1.1515	0.9538	0.9653	1.1873	1.5160
1980	1.1436	0.9362	1.0558	1.1766	1.5191
1981	1.2804	0.4714	0.7363	0.8986	1.5083
1982	1.0593	1.1644	1.2840	1.2974	1.5047
1983	1.0284	1.3104	1.2433	1.1560	1.5115
1984	1.0272	1.2801	1.1654	1.2730	1.5894
1985	1.0779	1.2006	1.0233	1.0817	1.5522
1986	1.1137	1.1350	0.8473	0.9528	1.5357
1987	1.1748	0.9425	0.8125	0.9425	1.5268
1988	1.1427	0.6909	0.9561	0.9111	1.5548
1989	1.1318	0.8295	1.0267	1.0076	1.5489
1990	1.1127	1.0459	1.0621	1.0749	1.5368
1991	1.1096	1.0814	1.0449	1.0772	1.5290
1992	1.1254	1.0333	0.9534	1.0698	1.5335
1993	1.1015	1.0832	1.0595	1.1501	1.5334
1994	1.0997	1.0971	1.0641	1.1542	1.5285
1995	1.0911	1.1027	1.0990	1.1838	1.5333
1996	1.0873	1.1158	1.1389	1.1776	1.5272
1997	1.0834	1.1238	1.1300	1.1925	1.5321
1998	1.0856	1.1132	1.1470	1.2077	1.5258
1999	1.0824	1.1079	1.1641	1.2395	1.5269
2000	1.0838	1.1004	1.1655	1.2359	1.5270
2001	1.0845	1.0938	1.1717	1.2566	1.5193
2002	1.0799	1.0979	1.1715	1.2847	1.5269
2003	1.0822	1.0869	1.1648	1.2881	1.5258
2004	1.0807	1.1636	1.0247	1.1900	1.5305
2005	1.0816	1.1564	1.0392	1.2048	1.5292

Table 4.4:   Trends in Tax Buoyancies Pre- and Post-Reform in East Africa

Tax Category	Pre-Reform (1970-86)	Post-Reform (1987-2005)	Overall (1970-2005
Tanzania			
Tax Revenue	0.8739	0.8979	0.8866
Trade Tax	0.9988	0.9904	0.9944
VAT	0.9324	0.9068	0.9189
Income Tax	0.8641	0.8910	0.8783
Other Tax	0.8012	0.7991	0.8001
Kenya			
Tax Revenue	1.0521	1.0580	1.0552
Trade Tax	0.9719	0.9694	0.9705
VAT	1.1099	1.0706	1.0873
Income Tax	1.0969	1.0847	1.0902
Other Tax	0.3246	0.3314	0.3261
Uganda			
Tax Revenue	1.0832	1.1011	1.0949
Trade Tax	1.1268	1.0561	1.0805
VAT	1.1149	1.0735	1.0878
Income Tax	1.2113	1.1499	1.1711
Other Tax	1.5291	1.5314	1.5306

Table 4.5:   Trends in Tax Buoyancies in Different Policy Episodes in East Africa, 1970-2005

Tax Category	Tanzania					Kenya					Uganda			
	70-80	81-86	87-92	93-95	96-05	70-79	80-86	87-91	92-96	97-05	70-79	80-86	87-91	92-05
TXRVB	0.884	0.856	0.914	0.975	0.865	1.031	1.083	1.086	1.081	1.030	1.034	1.104	1.134	1.089
TRTXB	0.961	1.069	0.992	0.998	0.987	0.978	0.963	0.989	0.937	0.977	1.257	1.071	0.918	1.505
VATB	0.863	1.061	0.923	0.854	0.913	1.045	1.175	1.097	1.017	1.086	1.265	1.051	0.980	1.107
INTXB	0.876	0.842	0.915	0.919	0.868	1.131	1.049	1.001	1.160	1.090	1.426	1.129	1.003	1.203
OHTX	0.795	0.813	0.804	0.799	0.796	0.325	0.314	0.213	0.315	0.335	1.523	1.532	1.539	1.529

Notes: TXRV: Tax buoyancy for total tax revenue; TRTXB: Tax buoyancy for trade tax; VATB: Tax buoyancy for sales and excise taxes (VAT); INTXB: tax buoyancy for income tax, OHTX: Other taxes.

Table 4.6:   **Unit Root Tests for the Variables in the Regression Analysis, 1970-2005**

Variable	Tanzania			Kenya			Uganda		
	ADF Z(t) Value	PP Z(t) Value	I (?)	ADF Z(t) Value	PP Z(t) Value	I (?)	ADF Z(t) Value	PP Z(t) Value	I (?)
TXRXB	-2.450	-4.779***	I(1)	-4.107***	-8.009***	I(1)	-5.576***	-6.501***	I(1)
TRTXB	-3.552***	-7.085***	I(1)	-2.229	-7.346***	I(1)	-4.867***	-6.063***	I(1)
VATB	5.780***	-4.837***	I(1)	-4.239***	14.914***	I(1)	-4.310***	-6.607***	I(1)
INCTXB	-4.336***	-8.644***	I(1)	-3.148**	-7.234***	I(1)	-4.362***	-7.114***	I(1)
GDPG	-5.234***	-8.886***	I(1)	-6.536***	-7.010***	I(1)	-5.372***	-4.976***	I(1)
INFL	-3.822***	-6.548***	I(1)	-3.782***	-6.099***	I(1)	-3.123**	-4.068***	I(1)
AGRG	-2.294	-5.277***	I(0)	-3.520***	-5.633***	I(0)	-5.226***	-3.886***	I(0)
MANG	-1.474	-5.044***	I(0)	-3.734***	-6.692***	I(1)	-2.766**	-9.011***	I(1)
URBG	-3.009**	-5.635***	I(1)	-2.760**	-5.333***	I(2)	-2.490	-4.850***	I(1)
TRADE	-2.344	-3.668***	I(1)	-4.277***	-6.871***	I(1)	-4.131***	-3.805***	I(1)
GBDEF	-2.958**	-4.028***	I(0)	-3.888***	-5.972***	I(0)	-4.361***	-5.791***	I(0)

Note: *** = significant at 1% level, ** = significant at 5% level

Table 4.7:   Results of Co-integration Analysis

Equation (Residual)	Without Constant Mackinnon Critical Values			Without Trend Mackinnon Critical Values			With Trend Mackinnon Critical Values		
	Z(t(	1%	5%	Z(t(	1%	5%	Z(t(	1%	5%
Tanzania									
TXRV	-4.353**	-4.830	-3.917	-5.909**	-6.025	-5.203	-5.808**	-6.434	-5.581
TRTX	-6.625***	-4.546	-3.685	-5.551**	-5.622	-4.826	-5.447**	-6.050	-5.227
VAT	-6.075***	-4.546	-3.685	-6.010***	-5.622	-4.826	-5.966**	-6.050	-5.227
INTX	-9.003***	-4.546	-3.685	-7.880***	-5.622	-4.826	-7.953***	-6.050	-5.227
OTTX	-6.888***	-5.087	-4.125	-6.754***	-5.482	-4.464	-6.553***	-5.879	-4.808
Kenya									
TXRV	-6.511***	-4.813	-3.912	-6.167***	-6.025	-5.203	-6.089**	-6.434	-5.581
TRTX	-5.425***	-4.532	-3.682	-7.311***	-5.622	-4.826	-7.189***	-6.050	-5.227
VAT	-5.043***	-4.813	-3.912	-5.939**	-6.025	-5.203	-5.952**	-6.434	-5.581
INTX	-5.656***	-4.813	-3.912	-6.821***	-6.025	-5.203	-6.759***	-6.434	-5.581
Uganda									
TXRV	-5.077***	-5.067	-3.977	-5.699**	-6.358	-5.408	-6.070**	-6.826	-5.827
TRTX	-4.774**	-5.067	-3.977	-5.686**	-6.358	-5.408	-5.989**	-6.826	-5.827
VAT	-4.943***	-4.725	-3.736	-4.710	-5.904	-4.998	-5.581**	-6.393	-5.439
INTX	-4.028**	-4.725	-3.736	-5.543**	-5.904	-4.998	-5.494**	-6.393	-5.439
OTTX	-4.492**	-5.067	-3.977	4.386	-6.358	-5.408	4.297	-6.826	-5.827

Notes: TXRV: tax revenue; TRTX: trade tax revenue; VAT: value-added tax (sales and excise tax) revenue; INTX: income tax revenue. Z(t) *** significant at 1% level, ** significant at 5 % level and * significant at 10 % level, (Critical values at 1% and 5% level of significant are calculated using Mackinnon (1991) and Ericsson and Mackinnon (2002) method.

Table 4.8:   Determinants of Tax Performance in Tanzania

Variables	Tax Revenue		Trade Tax		Sales and Excise Tax (VAT)		Income Tax		Other Taxes	
	1	2	1	2	1	2	1	2	1	2
TAXB1	0.144		0.093		0.544***		0.388**		-0.073	
	(0.78)		(0.57)		(3.58)		(2.29)		(0.40)	
GDPG	0.005	-0.002	-0.002	-0.005*	-0.007	0.012	0.007	-0.003	0.002	0.001
	(0.74)	(0.39)	(0.91)	(1.72)	(0.97)	(1.40)	(1.55)	(0.50)	(0.98)	(0.59)
INFL		-0.002	0.002***	0.002**	-0.001	0.004	0.002*	0.000		0.001
		(0.92)	(2.89)	(2.21)	(0.47)	(1.25)	(1.95)	(0.02)		(1.06)
AGRG		0.002		0.000		-0.015**		0.001		0.001
		(0.37)		(0.07)		(2.00)		(0.24)		(0.82)
MANG		0.003		0.000		-0.004		0.002		-0.001**
		(1.51)		(0.01)		(1.46)		(0.96)		(2.03)
ODA	0.040	-0.035		-0.009		0.025		0.045	-0.016	-0.031*
	(0.87)	(0.65)		(0.40)		(0.36)		(1.04)	(0.99)	(1.97)
EXD	0.031	0.198**	-0.013***	-0.034		-0.031		-0.003	0.069***	0.030
	(0.05)	(2.52)	(2.90)	(0.90)		(0.29)		(0.04)	(3.00)	(1.32)
URBG	-0.019	0.022		0.012	-0.001	-0.048	-0.002	-0.004	0.005	0.021*
	(0.68)	(0.61)		(0.76)	(0.14)	(0.98)	(0.51)	(0.14)	(0.43)	(1.98)
GBDEF		-0.000		-0.000		0.000		0.000		-0.000
		(1.07)		(0.44)		(0.27)		(0.38)		(0.14)
TRADE	0.065	0.155	-0.083***	-0.079*	-0.060	-0.073	0.022	0.004	0.042	-0.013
	(0.80)	(1.50)	(3.89)	(1.67)	(1.24)	(0.51)	(0.74)	(0.04)	(1.36)	(0.43)
TREND									0.014**	
									(2.78)	
ECM$_{t-1}$		-0.910***		-0.913***		-0.084		-1.009***		-1.038***
		(4.25)		(3.99)		(0.29)		(3.85)		(5.60)
Constant	0.518**	0.036*	1.179***	0.001	0.690**	-0.003	0.411***	-0.007	0.444*	0.012**
	(2.64)	(1.96)	(5.41)	(0.06)	(2.33)	(0.11)	(3.04)	(0.43)	(1.99)	(2.26)
N	33	32	33	32	33	32	33	32	33	32
F-Value	1.31	4.24**	13.31	3.20**	8.39***	1.47	4.07**	2.26*	2.31*	9.19***
Adj_R^2	0.0541	0.5107	0.6580	0.4149	0.5361	0.1309	0.3240	0.2885	0.2228	0.7254

Notes: TAXB1: Tax buoyancy lagged one period; GDPG: Real GDP growth rate; INFL: Inflation rate; AGRG: Agriculture Growth rate; MANG: Manufacturing growth rate; URBG: Growth rate of the urban population; GDEF: the change in public budget deficit; ODA: Natural logarithm of the share of official development aid in GDP; EXD: Natural logarithm of the share of external debt in GDP; TRADE: is the share of trade volume (percentage of import plus export) in GDP; ECM$_{t-1}$: the residual of the regression of co-integrated variables lagged one period. Figures in Parentheses are absolute t-values, *** = significant at 1% level, ** = significant at 5% level and * = significant at 10% level

Table 4.9:   Determinants of Tax Performance in Kenya

Variables	Tax Revenue		Trade Tax		Sales and Excise Tax (VAT)		Income Tax	
	1	**2**	**1**	**2**	**1**	**2**	**1**	**2**
TAXB1	0.484**		0.661***		0.262***		0.481**	
	(2.82)		(3.62)		(3.00)		(2.88)	
GDPG	0.002	0.008	-0.006	0.003	0.000	-0.102	-0.002	-0.002
	(0.38)	(1.02)	(1.45)	(0.55)	(0.06)	(1.50)	(0.31)	(0.24)
INFL	0.002	0.002	-0.000	0.001	-0.003*	-0.002	-0.002	-0.006***
	(0.02)	(1.00)	(0.09)	(0.93)	(1.97)	(1.19)	(0.73)	(3.09)
AGRG		-0.003		-0.001		-0.000		0.003
		(0.78)		(0.27)		(0.00)		(0.73)
MANG	0.003	0.003	0.004*	0.003	0.000	-0.001	-0.000	-0.002
	(1.05)	(0.76)	(1.71)	(1.26)	(0.07)	(0.27)	(0.05)	(0.50)
ODA	-0.077*	-0.092*	0.059**	0.093**	0.066	-0.012	-0.049	0.036
	(1.96)	(1.73)	(2.02)	(2.51)	(1.43)	(0.23)	(0.97)	(0.65)
EXD		0.002		-0.006		0.007		-0.004
		(0.23)		(1.15)		(1.09)		(0.51)
GBDEF		0.000		-0.000*		0.000		-0.000
		(1.33)		(1.85)		(0.86)		(1.16)
TRADE	-0.131	0.101	-0.093	-0.113	0.316**	0.252*	-0.049	0.020
	(1.17)	(0.73)	(1.14)	(1.16)	(2.59)	(1.86)	(1.47)	(0.14)
ECM$_{t-1}$		-0.539**		-0.651**		-0.358*		-0.815***
		(2.31)		(2.75)		(1.69)		(4.11)
Constant	1.034**	0.001	0.717**	0.003	-0.411	-0.021	-0.308	0.001
	(2.03)	(0.05)	(2.10)	(0.37)	(0.82)	(1.26)	(0.56)	(0.08)
N	34	31	34	31	32	29	34	31
F-Value	2.76**	1.33	4.38**	2.74**	3.49**	1.11	3.15**	3.31**
Adj_R^2	0.2423	0.0889	0.3805	0.3425	0.3252	0.0378	0.2813	0.4093

Notes: TAXB1: Tax buoyancy lagged one period; GDPG: Real GDP growth rate; INFL: Inflation rate; AGRG: Agriculture Growth rate; MANG: Manufacturing growth rate; GDEF: the change in public budget deficit; ODA: Natural logarithm of the share of official development aid in GDP; EXD: Natural logarithm of the share of external debt in GDP; TRADE: is the share of trade volume (percentage of import plus export) in GDP; ECM$_{t-1}$: the residual of the regression of co-integrated variables lagged one period. Figures in Parentheses are absolute t-values, *** = significant at 1% level, ** = significant at 5% level and * = significant at 10% level

Table 4.10: Determinants of Tax Performance in Uganda

Variables	Tax Revenue		Trade Tax		Sales and Excise Tax (VAT)		Income Tax		Other Taxes	
	1	2	1	2	1	2	1	2	1	2
TAXB1	0.336*		0.536***		0.122		0.191		0.109	
	(1.61)		(2.31)		(0.59)		(1.21)		(0.62)	
GDPG	0.007**	0.004	-0.021*	0.004	-0.09	-0.009	-0.010*	-0.006	-0.005***	-0.002
	(2.13)	(1.07)	(1.67)	(0.24)	(1.17)	(0.78)	(1.74)	(0.86)	(4.23)	(0.87)
INFL	0.001***	0.001***	-0.002**	-0.002***	-0.002***	-0.002***	-0.002***	0.001***	0.000	-0.000
	(2.87)	(3.79)	(2.91)	(3.79)	(3.28)	(4.07)	(4.57)	(5.15)	(0.59)	(0.97)
AGRG		-0.004		0.010		0.011*		0.004		-0.002*
		(1.47)		(1.16)		(1.61)		(0.95)		(1.72)
MANG	-0.004**	-0.004***	0.012**	0.012	0.005*	0.011***	0.005*	0.008***		-0.000
	(2.48)	(3.33)	(2.12)	(2.68)	(1.60)	(3.08)	(1.96)	(3.73)		(0.28)
URBG	-0.006	-0.027*	0.040	0.048		0.078*		0.044**	0.000	0.010
	(0.53)	(1.90)	(0.82)	(1.12)		(1.97)		(2.04)	(0.07)	(0.15)
ODA		0.032		-0.119		0.027	-0.059*	0.018		0.012
		(0.99)		(0.99)		(0.30)	(1.71)	(0.34)		(0.60)
EXD		-0.090**		0.450***		0.203*		0.102*		-0.016
		(2.35)		(3.34)		(1.85)		(1.60)		(0.61)
GBDEF		0.000				-0.000		-0.000		-0.000
		(0.70)				(1.21)		(0.61)		(0.01)
TRADE	0.068	-0.042*	-0.195	0.216**	-0.239**	0.099*	0.257	0.087**	-0.054*	0.010
	(0.97)	(1.86)	(0.75)	(2.61)	(2.00)	(1.56)	(1.32)	(2.43)	(1.85)	(0.74)
TREND								0.001*		
								(1.70)		
ECM$_{t-1}$		-0.668**		-0.430*		-0.545**		-0.918***		-1.051**
		(2.69)		(1.78)		(2.44)		(5.15)		(2.45)
Constant	0.495*	-0.061*	1.081	0.301**	1.845***	0.133	1.151***	0.123**	1.547***	0.023
	(1.79)	(1.92)	(0.84)	(2.60)	(3.69)	(1.49)	(5.21)	(2.44)	(4.97)	(1.00)
N	25	24	25	24	25	24	25	24	25	24
F-Value	5.75***	5.77***	5.47***	5.70***	7.16***	5.33***	11.02***	11.80***	3.71**	2.54*
Adj_R^2	0.5427	0.6747	0.5280	0.6478	0.5619	0.6531	0.6761	0.8245	0.4414	0.4017

Notes: TAXB1: Tax buoyancy lagged one period; GDPG: Real GDP growth rate; INFL: Inflation rate; AGRG: Agriculture Growth rate; MANG: Manufacturing growth rate; URB: Growth rate of the urban population; POPG: Growth rate of the population; TAX: Natural logarithm of the share of tax revenue and its components in GDP; GDEF: the change in public budget deficit; ODA: Natural logarithm of the share of official development aid in GDP; EXD: Natural logarithm of the share of external debt in GDP; TRADE: is the share of trade volume (percentage of import plus export) in GDP; ECM$_{t-1}$: the residual of the regression of co-integrated variables lagged one period. Figures in Parentheses are absolute t-values, *** = significant at 1% level, ** = significant at 5% level and * = significant at 10% level

CHAPTER 5

EFFECTS OF TRADE REFORMS ON PUBLIC INVESTMENT

5.1 Introduction

The objective of this chapter is to examine whether declines in government revenue, and inadequate and erratic tax revenue generation, have had adverse effects on public investment spending in Tanzania, Kenya and Uganda. This is emanating from the empirical findings in Chapters three and four. Chapters three and four demonstrated that economic reforms implemented in these three countries contributed to the lower levels of government revenue and erratic tax revenue generation in Uganda and erratic revenue generation in Kenya. It was also demonstrated in chapter three and four that the share of government and tax revenue in GDP has been declining and tax revenue performance has been sluggish throughout the period under study in Tanzania.

Declining, inadequate and erratic revenue generation may create unpredictability of revenues available to finance public capital expenditures, resulting in sub-optimal allocation of government resources. This is likely to have adverse consequences on long-run growth of the economy. It may also jeopardize macroeconomic stability and limit the speed of economic reforms and the extent to which their benefits can be achieved. The political economy of fiscal policy suggests that fiscal policy may either promote or inhibit economic growth through its effects on decisions regarding resource allocation on public investment spending in physical and human capital development. Investment spending on physical and human capital can bolster long-term growth. In turn, a higher rate of growth generates greater resources to finance spending on human capital development, further bolstering the dynamism of the economy (Clement et al., 2004; Ndulu, 2006; Palley, 2006). Therefore, if economic reforms have to enhance growth and reduce poverty, they must be accompanied by public investment in physical and human capital development.

This chapter investigates whether declines in government revenue, and inadequate and erratic revenue generation have had any adverse consequences for public investment spending in the three countries. Understanding the consequences of fiscal squeeze on public investment provides useful insights to improve the effectiveness of national poverty reduction strategies that will promote long-run economic growth and enhance human development outcomes provided by the United Nations sanctioned Millennium Development Goals (MDGs)[5].

The rest of this chapter is organized as follows. Theoretical and empirical evidence on the subject are reviewed in section 5.2. Section 5.3 describes the trend and patterns of selected public expenditures for the three East African countries. It also traces changes in the composition of public investment spending on physical infrastructure and human capital. Section 5.4 presents an econometric analysis of the effects of the decline in government revenue and erratic revenue generation on physical and human capital investment as well as investigating other determinants of physical and human capital investment. The conclusions are summarized in section 5.5.

5.2 Literature Review

5.2.1   Theoretical Issues and Empirical Evidence

The theoretical underpinning adopted in this chapter builds on the political economy theory of fiscal policy. The theory suggests that governments raise revenues and use the collected resources to finance public investment spending for the provision of public goods and targeted development projects. Policy decisions are made by the government, which decides on how best to allocate the collected limited resources into alternative competing sectors (Hassler et al., 2007; Battaglini and Coate, 2008). In developing countries, as in developed countries, governments play

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[5] The goals are directed at reducing poverty in all its forms; including halving poverty, achieving universal primary education, reversing the spread of HIV/AIDS, reducing child and maternal mortality, and ensuring environmental sustainability.

a key role in the provision of public goods. Choices have to be made how to allocate the limited resources, so governments face tradeoffs (Khattry, 2003).

Khattry (2003) succinctly summarizes the tradeoffs which governments often face in the process of public expenditure management. She identifies three tradeoffs. The first one involves the tradeoff between public spending on physical infrastructure and human capital. Because of substantial costs involved in capital investment, the involvement of the private sector is limited. Thus the government takes a large share of the burden to undertake such investment. But governments also put much emphasis on allocating substantial resources on human capital investment in order to maintain social cohesion and political legitimacy.

The second dilemma is allocating resources between defense spending and spending on physical and human capital investment. It is contended that governments in developing countries facing deteriorating political and social conditions tend to invest in military apparatus in order to maintain political authority, while compromising physical and human capital investment.

The third is the concern of allocating resources between public investment in both physical and human capital infrastructure and interest payments on accumulated debt. Developing countries that have accumulated large debts have reduced spending on capital investment in order to service the debt and qualify for new borrowing to meet spending obligations.

Economic reforms implemented in many developing countries entailed expenditure switching, expenditure reducing, and trade liberalization policy packages. Some countries that underwent fiscal adjustment marginally managed to reduce their fiscal deficits. However, this resulted in cuts in public expenditure, especially when economic reforms include policy measures that restrain government revenue, thus inducing increased budgetary pressure and diminished resources available for public spending on domestic capital investment (Patel et al. 1997; Rao, 1999; Palley, 2006; Drether, 2006; Tanzi, 1993; Basu and Morrissey, 1997; Khattry, 2003; Atolia, 2006; Roy et al. 2006, Palley, 2006; Winters, et al. 2004; Clement, et al. 2003; Roy, et al. 2006; Schade, 2005; Kumar et al. 2007; Gupta et al. 2002, 2005; Baldacci et al. 2004).

Empirical evidence demonstrates that in periods of restrictive fiscal policies and fiscal consolidation, public spending on infrastructure is often the first item to suffer from government expenditure compression (Tanzi, 1993; Basu and Morrissey, 1997; Patel et al., 1997; Atolia, 2006; Roy et al. 2006, Dreher et al., 2006; Palley, 2006; Winters, et al. 2004; Clement, et al. 2003; Roy, et al. 2006; Schade, 2005; Kumar et al. 2007; Gupta et al. 2002, 2005; Baldacci et al. 2004). This is partly due to the fact that deleterious effects of reduced public investment are felt with long lags, whereas other components of government budgets, such as transfers and public sector wage bill have higher and more immediate political costs. The extent of the effect of economic reforms on public investment spending may differ, given differences in macroeconomic conditions, structure of the economy, level of development and the size of the government (Randolph, 1996; Sturm, 2001; Clement, et al. 2003; Dreher, et al. 2006; Kumar, et al. 2007). Furthermore, it is acknowledged that the fiscal adjustment-public investment nexus depends on the extent of the change in and the means through which the fiscal budget balance is achieved (Gupta, et al. 2003; Gupta, et al. 2005; Mackenzie and Orsmond, 1996; Roy, et al. 2006; Dreher, et al. 2006; Kumar, et al. 2007).

5.2.2   Determinants of Public Investment Spending

Previous work has concluded that the principal determinants of public investment are the following: macroeconomic environment, underlying economic structure, level of development, and the size of the government. Macroeconomic conditions are reflected by the size of the public budget deficit and public debt as well as the inflation rate. In addition to reflecting the macroeconomic conditions of the country, the change and size of government budget deficit account for the effects of fiscal adjustment. The size of the fiscal deficit controls for initial fiscal conditions and any improvements in tax collection in the adjustment process. Empirical evidence on the relationship between fiscal adjustment and public investment is, however, inconclusive,

because it appears to depend on the magnitude, length and quality of adjustment (Gupta, et al. 2005; Clement, et al. 2003; Baldacci, et al. 2004; Kumar et al. 2007).

Higher government budget deficit in the previous period tends to lower the level of infrastructure expenditures. In the presence of high public budget deficits, governments may be forced to adopt restrictive fiscal policy measures by cutting back or postponing public capital spending, whilst maintaining other sensitive social spending in order to maintain political legitimacy (Randolph 1996; Sturm, 2001; Roy, et al. 2006; Rao, 1999; Ndikumana, 2004). Furthermore, high public deficits may cause high inflation which can create uncertain investment climate. This may force the government to increase infrastructure investment to compensate for or stimulate private investment (Randolph, et al. 1996). Generally, however, the relationship between public budget deficit and public investment depends on initial and accompanying macroeconomic conditions.

Like the public deficit, high public debt can lead to budget cuts on government investment spending on capital expenditure (Rao, 1999; Clement, et al. 2003; Sturm, 2001; Roy, et al. 2006; Schade, 2005). A high level of external debt reduces government incentives to carry out structural and fiscal reforms; because these reforms could intensify the pressure to repay the debt. It is argued that any strengthening of the fiscal position resulting from structural policy reforms intensify the pressures to repay foreign debt. The government may undertake distortionary policies in order to remain under the shadow so that don not repay the debts (Clements et al., 2004). Debt servicing depresses a country's resources available to finance budget expenditures, thus resulting in cuts in capital development expenditures. It is also argued that high debt overhang depresses public investment. That is, as the public debt increases, there is a growing concern about governments' actions and policies for servicing the debt obligations, and this tends to have adverse effects on both public and private investment. For example, with high stock of debt, there may be expectations that the government may decide to service the debt through distortionary measures, such as inflation tax (Agenor and Montiel, 1996). Higher

inflation rates reduce the real value of tax revenue, thus reducing government resources for spending on physical capital (Sturm, 2001; Aubin et al. 1988, McMahon and Schmidt-Hebbel, 2000). In certain circumstances, various public spending components may complement or substitute each other. For instance, defense and infrastructure spending are substitutes, higher spending on defense is associated with decreased spending on physical capital investment (Khattry, 2003; Looney, 1997); whilst there is some evidence that education and defense expenditures may complement one another. That is, military spending encourages modernization, supplies technological innovations to civilian industries, contributes to the building of physical infrastructure, provides modern education and health services to defense personnel (Marlow and Shiers, 1999; Mehrotra and Delamonica, 2007).

Furthermore, the ways in which the public budget deficit is financed may affect public investment spending. External financing of the budget deficit is socially desirable, provided it is invested in credit-worthy investment development projects with high economic returns. Deficit financing through domestic borrowing may be associated with inflationary pressures. Higher levels of inflation are associated with macroeconomic instability and often contribute to the decline in government revenues due to the fall in demand for money and decline of the real value of tax. Reduction in government revenue again limits the availability of resources required to finance budget capital expenditures (Weiss, 1995; Gupta, et al. 2005; Baldacci, et al. 2004; Kumar et al. 2007).

The ratio of tax revenue in GDP also controls for the initial fiscal conditions and the contribution of improvements in tax collection to fiscal adjustment effort (Gupta, et al. 2005). High tax revenue reflects the availability of resources required to finance government expenditure. Higher tax revenue is associated with increased public investment spending on physical and human capital development (Sturm, 2001; Khattry, 2003).

The level of development is reflected by levels of per capita GDP, and urbanization. The more the country is open to the rest of the world, the more it becomes vulnerable to foreign

competition and therefore competes for business by offering, among other things, adequate infrastructure. Similarly, in seeking to attract foreign direct investment, a government could increase public capital spending (Clement, et al. 2003; Rao, 1999; Sturm, 2001; Khattry, 2003). In addition to reflecting the level of development, the real GDP growth rate accounts for business cycle effects on public investment spending. Growth of GDP reflects previous failures in the adjustment process and the effects of exogenous growth shocks (Gupta, et al. 2002, 2005). Lower growth rates of GDP are associated with less government spending on capital investments (Dreher, et al. 2006). The relationship between per capita income and public investment spending depends on the type of public spending. For instance, higher levels of per capita income are associated with higher spending on physical and human development (Sanz and Velazquez, 2002, Randolph et al. 1996). However, lower levels of development are associated with relatively more spending on physical infrastructure. Per capita GDP can exhibit an inverse relationship with total spending on physical capital, because private investment in physical infrastructure is low in the least developed countries (Khattry, 2003).

There are two opposing arguments on the impact of urbanization on public investment. First, as a society becomes more urbanized, there is a shift from the family to the public sector for services provision, such as education and health care. In this case urbanization is predicted to be associated with increased public investment in social service provision. Secondly, most public capital spending concerns physical infrastructure, the need for which is relatively greater in rural areas. Hence greater urbanization may be associated with less public spending on infrastructure (Clement, et al. 2003; Sturm, 2001, Randolph et al. 1996). However, this may not be the case in some developing countries, particularly in sub-Saharan African countries where urban centers are not developed as compared to those in developed countries.

5.3 Trends and Patterns of Public Investment Spending in East Africa

The trends and patterns of government investment spending in different sectors of the economy have changed considerably over time for the period under study in the three countries (Tables 5.1-5.5). It is therefore important to trace the trends and patterns in the levels and composition of government expenditures and examine their determinants. The trends and patterns in the levels and composition of government investment spending reflects governments' spending priorities, including their commitment to achieving poverty reduction and economic growth goals as outlined in their Poverty Reduction Strategy Papers and the framework provided by the Millennium Development Goals (MDGs).

The focus of this section is to describe the changes in government spending between the pre-reform (1970-1986) and post-reform (1987-2005) periods, as well as across policy episodes through which the three countries have passed as described in chapter 2 (section 2.3). Tables 5.1, 5.2 and 5.3 depict the trends and patterns of government expenditures between 1970 and 2005. Table 5.4 summarizes changes in government expenditure between pre- and post-reform periods. Table 5.5 reports the changes in government expenditures in the different policy episodes. The tables show considerable heterogeneity in the trends and patterns of central government expenditures among the three countries for the period under investigation.

5.3.1   Tanzania

A close examination of Tables 5.1-5.5 generally illustrates that in Tanzania the trends and patterns of central government expenditure and its components have been declining during the period under investigation. The share of total government expenditure in GDP decreased dramatically from 27.9 percent during the pre-crisis period (1970-80) to 18.3 percent during the second phase of the economic recovery reform 1996-2005, a decrease by more than one-third. Comparing the trends of the ratio of total government expenditure to GDP between the period before and after policy reform, Table 5.4 shows that on average the share of total government

expenditure in GDP plummeted considerably from 27.4 percent to 19.3 percent, a decrease of 29.6 percent.

The shares of the different government expenditure categories in GDP depict the same trend, except for general public service expenditure. The share of general public service expenditure in GDP has been increasing throughout the entire period under study. On average, it rose from 3.3 percent in the pre-crisis period to 5.5 percent during the second phase of economic recovery reform period (1996-2005). Comparing the pre-reform and post-reform period, the composition of general public service expenditure in GDP rose from 3.6 percent to 5.0 percent. On the other hand, the proportion of defense expenditure in GDP has been declining throughout the period.

The shares of human capital development expenditure (education and health) and infrastructure reveal mixed trends. The ratios declined from the pre-crisis period (1970-80) to the crisis period (1981-85), continued to decelerate during the first phase of the economic recovery reform period (1987-92), before rising in 1993-95 when reforms went off-track, then declined again in the second phase of economic recovery reform period (see Table 5.5). However, overall, comparing the pre-reform and post-reform periods, Table 5.4 shows that spending on human capital development declined during the reform period.

Tables 5.4 and 5.5 also demonstrate that the composition of the constituents of government expenditure in total government expenditure have changed substantially over the period under investigation. The proportion of public spending in education in total government expenditure declined on average from 13.2 percent in the pre-crisis period-1970-80 to 10.5 percent in the crisis period (1981-85) and further declining to 6.6 percent during the economic recovery period-1987-92. Thereafter, it started rising, rose to 7.5 percent when the reform went off-track and increased further to 10.2 percent during the second phase of economic recovery (1997-2005), but remained lower than it was in the 1970s.

The shares of health and physical infrastructure expenditure in total government expenditure show the same trend. Both decreased during the crisis period through 1993-95 when reform went off-track. During the period the share of health and physical infrastructure spending increased, before decreasing during the second phase of economic recovery period. The share of defense expenditure in total government expenditure rose (from 11.9 percent to 13.3 percent) during the crisis period (1981-85), and then decelerated throughout during economic recovery program (10.0 percent) and off-track reform period (7.2 percent), before rising slightly (7.7 percent) during the second phase of economic recovery reform period. The proportion of general public service expenditure in total government expenditure has been rising throughout the entire period under study (Table 5.5).

Table 5.5 reveals the priorities of public spending in Tanzania. On average for the entire period under investigation, the top sectors receiving the highest priority in Tanzania, as reflected by the composition of total government expenditure, are general public service (19.9 percent), physical capital (infrastructure-10.7 percent), education (10.3 percent) and defense (10.3 percent). Overall, human capital development spending in Tanzania received 15.8 percent of total government expenditure, out of which 10.3 percent was education spending and 5.5 percent was allocated for health spending. This is mirrored in poor human capital development outcomes: higher adult illiteracy rate, lower enrolment rates in primary and secondary schools, higher infant mortality rates, higher crude death rates and lower life expectancy in Tanzania as compared to Kenya and Uganda (Tables 2.2, 2.7 and 2.11 in Chapter 2).

5.3.2 Kenya

Over the entire period under investigation, total government expenditure in Kenya shows an increasing trend. The share of total government expenditure in GDP during the crisis period (1980-86), rose from 18.8 percent to 23.0 percent during the pre-crisis period (1970-79) and increased further to 25.5 percent during economic recovery reform period (1987-91). It also rose

sharply to 28.9 percent during the 1992-96 reforms before it fell to 27.8 percent in the 1997-2005 (Table 5.5). Overall, comparing between pre-reform and post-reform period, the share of total government expenditure in GDP increased dramatically from 20.5 percent to 27.5 percent, an increase of more than one-third.

The share of human capital development spending in GDP has been rising throughout, except between the economic recovery programs of 1987-91 and 1992-96, when it dropped slightly from 5.9 percent to 5.6 percent, before rising to 6.6 percent in the period 1997-2005.

Spending on physical capital (infrastructure) shows a mixed trend. The share of infrastructure expenditure in GDP declined from 6.0 percent during the pre-crisis period to 5.1 percent during the crisis period. Then it declined to 3.4 percent in 1987-91 and further to 2.3 percent in 1992-96, before rising sharply to 4.9 percent in 1997-2005. The ratio of defense spending/GDP also shows a mixed trend. It increased from 1.5 percent in 1970-79 to 2.4 percent in 1980-86. Thereafter, it decreased to 2.1 percent in 1987-91 and further to 1.3 percent in 1992-96 before increasing slightly to 1.4 percent in 1997-2005. The share of general public service in GDP has been increasing throughout, except during the period between 1992-96 and 1997-2005 when it decreased slightly from 4.6 percent to 4.4 percent. Overall, Table 5.4 shows that spending on human capital development and general public service spending increased during post-reform period, whilst spending on infrastructure and defense plummeted during the reform period as opposed to pre-reform period. However, splitting human capital into its components, the results show that spending in education rose whereas spending in health declined.

The composition of spending in Kenya reveals mixed trends. The composition has fluctuated from year to year as well as from one policy episode to another. The proportion of education in total government expenditure declined from 18.2 percent in the pre-crisis period (1970-79) to 17.9 percent during the crisis period (1980-86). It then rose to 18.4 percent during economic recovery program (1987-91), before decreasing to 15.4 percent in the period 1992-96 and then rose to 19.4 percent during the period 1997-2005. Spending in health service has been

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declining throughout from the pre-crisis (6.5 percent) until 1992-96 reform period (4.2 percent), then increased to 4.5 percent in the reform period 1997-2005, though remained lower than it was between 1970-79 and 1987-91.

The share of physical capital (infrastructure) spending in total government expenditure has been declining throughout the period under study, except in the reform period 1997-2005 when it dramatically increased from 8.0 percent during 1992-96 to 17.7 percent, an increase of 121.3 percent. However, it remained lower than in 1970-79 and 1980-91. Defense spending as a share of total government expenditure rose from 7.7 percent during the pre-crisis period to 10.4 percent during the crisis period, and then dropped continuously to 8.3 percent during the economic recovery program period and to 4.5 percent in 1992-96, before rising to 5.2 percent in 1997-2005. The share of general public service expenditure in total government expenditure has been increasing throughout the entire period under study. The ratio increased from 13.1 percent in the pre-crisis period to 16.1 percent in 1997-2006, an increase of 22.9 percent.

Tables 5.4 and 5.5 reveal that the top priority sectors that constitute the largest shares in total government spending are physical capital (20.0 percent), education (18.1 percent) and general public service sector (14.6 percent). Spending on defense and health are respectively 7.2 and 5.4 percent. Overall, human capital development spending represents the largest share (23.4 percent) of total government expenditure in Kenya as compared to other spending categories (Table 5.4). The larger share of spending in human capital development is education (18.1 percent) as compared to health (5.4 percent). This is not surprising because Kenya has a higher quality of human capital in terms of education attainment as compared to its counterparts Tanzania and Uganda. This is also reflected in lower adult illiteracy levels; higher enrolment rates in primary and secondary schools; lower infant mortality and crude death rates (Table 2.7 in Chapter 2).

5.3.3 Uganda

Uganda's share of total government expenditure in GDP over the study period shows a mixed trend. The share of total government expenditure in GDP during the crisis period (1980-86) plummeted to 8.2 percent from 13.6 percent during the pre-crisis period (1970-79). It then increased slightly to 8.3 percent during economic recovery reform period (1987-91) and went up sharply to 18.6 percent during 1992-2005, an increase of 124.1 percent (Table 5.5). However, comparing the pre-reform and post-reform periods, Table 5.4 demonstrates that overall total government expenditure as a share in GDP rose sharply from 11.1 percent to 15.9 percent, an increase of almost 43.2 percent.

Spending on human capital development also shows a mixed trend. It decreased during the crisis period from 2.9 percent of GDP in the pre-crisis period down to 1.3 percent, a decline of 55.2 percent. It then declined slightly further to 1.0 percent in 1987-91 and then increased sharply to 3.6 percent during the period 1992-2005. Education and health spending as a percentage of GDP each follow the same trend. The share of physical capital (infrastructure) in GDP declined during the crisis period (1980-86) and thereafter it experienced an increasing trend throughout. Physical capital spending increased from 2.1 percent during the crisis period to 3.5 percent during the economic recovery program and rose further to 4.8 percent during the second generation reform period (1992-2005). Similarly, spending on public service and defense reveal mixed trends. They both fell during the crisis (1980-79) and economic recovery program (1987-91) and went up during the second generation reform period (1992-2005).

Overall, Table 5.4 shows that human capital development (education and health), physical capital and general public expenditure increased in the post-reform period from 2.1, 2.2 and 2.0 percent to 2.9, 4.5 and 2.1 percent respectively. Spending on defense declined from 2.4 percent in the pre-reform period to 1.9 percent in the post-reform period, a decline of 20.8 percent. We can attribute this decline in defense spending to fiscal adjustment coupled with

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changes in sector spending priorities in Uganda. That is, the Ugandan government has shifted emphasis to physical and human capital development.

The composition of spending in Uganda likewise shows mixed trends. The composition has fluctuated from year to year as well as from one policy episode to another. The proportion of education in total government expenditure declined from 15.5 percent in the pre-crisis period (1970-79) to 12.7 percent during the crisis period (1980-86). It then declined further to 9.8 percent during economic recovery program (1987-91), before rising to 13.8 percent in the second generation reform period 1992-2005. Spending on health services declined throughout from the pre-crisis (5.5 percent) up until the period 1987-91 (2.8 percent) and then rose to 4.9 percent during the second generation reform period 1997-2005 (Table 5.5).

The share of physical capital (infrastructure) spending in total government expenditure has been rising throughout the period under study, except during second generation reform 1992-2005. During this period spending on physical capital decreased sharply from 42.2 percent during economic recovery program period (1987-91) to 26.3 percent in the second generation economic reform period (1992-2005), a decrease of 37.7 percent. Defense spending as a share of total government expenditure rose from 20.1 percent during the pre-crisis period to 25.5 percent during the crisis period, and then dropped continuously to 21.0 percent during the economic recovery program period (1987-91) and to 10.9 percent in 1992-2005. The share of general public service expenditure in total government expenditure decreased from 23.0 percent during the pre-crisis period to 12.5 percent in 1992-2005.

Uganda's top priority sectors are physical capital (26.0 percent), defense (17.6 percent) and general public service (17.4 percent). Education and health spending received 13.4 percent and 4.5 percent respectively. Human capital development (17.9 percent) receives almost same share as defense (17.6) and general public service (17.4). High spending in defense could be explained by the fact that Uganda has been in a constant civil strife almost for entire period under investigation. Nonetheless, in the post-reform period the Ugandan government allocated more

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resources to education as a share of GDP than Tanzania. This is reflected in higher enrolment rates in primary and secondary schools in Uganda than Tanzania (Table 2.2 and 2.11 in Chapter 2).

5.4 Econometric Analysis

5.4.1 Methodology

Based on the theoretical and empirical evidence reviewed in section 5.2, the reduced-form equation for analyzing the effect of economic reforms on public investment spending is as follows:

$$PI_t = f\ (PI_{t-1},\ \mathbf{OP}_t,\ \mathbf{E}_t,\ \mathbf{M}_t,\ \mathbf{G}_t) \tag{5.1}$$

Where PI is the public expenditure category as percentage of GDP; **OP** is the index of openness measure (export plus import divided by GDP) capturing the effects of trade liberalization; **E** is a vector controlling for the structure of the economy; **M** is a vector controlling for macroeconomic conditions; and **G** is the size of the government measured by the change in tax revenues. The estimation equation is specified as follows:

$$PI_t = \beta + \gamma PI_{t-1} + \rho \mathbf{G}_t + \phi_q \mathbf{OP}_t + \delta_i \mathbf{E}_t + \eta_i \mathbf{M}_t + \alpha_t + \varepsilon_t \tag{5.2}$$

In order to capture short-run and long-run dynamic changes in fiscal adjustments as a result of economic policy reforms a general autoregressive distributed lagged model is specified:

$$PI_t = \beta + \gamma PI_{t-1} + \rho \mathbf{G}_t + \phi \mathbf{OP}_t + \delta_i \mathbf{E}_t + \eta_i \mathbf{M}_t + \rho \mathbf{G}_{t-1} + \phi \mathbf{OP}_{t-1} + \delta \mathbf{E}_{t-1} + \eta_i \mathbf{M}_{t-1} + \varepsilon_{it} \tag{5.3}$$

Estimating equation (5.3) while variables are in levels there is, however, a danger of encountering spurious regression; that is, obtaining significant regression results from unrelated data. An alternative approach is to estimate the error-correction regression equation. The error-correction model is obtained by re-parameterizing and re-arranging equation (5.3) as follows:

$$PI_t = \alpha + \phi\Delta OP_t + \rho\Delta G_t + \delta_i\Delta E_t + \eta_i\Delta M_t + \lambda\varepsilon_{t-1} + \Omega_t \qquad (5.4)$$

where $\lambda = (\gamma-1)$, is the adjustment coefficient (i.e. the estimated coefficient on the error-correction term). The expected value of adjustment coefficient is negative, which implies that there are dynamic stability in the long-run within the error-correction estimation model; $\varepsilon_{t-1} = (PI_{t-1} - hOP_{t-1} - kG_{t-1} - jE_{t-1} - lM_{t-1})$ is the error-correction term lagged one period, and $h = \phi/(1-\gamma)$; $k = \rho_1/(1-\gamma)$; $j = \delta_1/(1-\gamma)$; and $l = (\eta_1 + \eta_2 + \eta_3)/(1-\gamma)$. It is obtained directly from the residuals of the co-integration regression equation (5.2). This captures long-run equilibrium changes of public investment spending as a result of changes in trade policy reforms in the short-run. Equation (5.4) is estimated separately for physical capital and human capital and then separately for education and health investment spending.

5.4.2 Econometric Results

With time-series data it is meaningless to estimate the error-correction model with variables which are not stationary. Therefore, the first step before embarking on the error-correction estimation approach is to ascertain the stationarity, order of integration and whether the variables under scrutiny are co-integrated.

Unit Root Test

A unit root test was performed for each variable for the period spanning 1970 to 2005. First, a unit root test was performed for each variable in their levels. For the variables in which

the null hypothesis of non-stationarity was rejected, their first differencing was tested for stationarity. To minimize the possibility of falsely rejecting the true null hypothesis or accepting the null hypothesis which is false, both the augmented Dickey Fuller Test (ADF) and Pillips-Perron (P-P) non-parametric test were used to test for the presence of unit root. Table 5.6 summarizes results of the ADF and P-P unit root tests. The results show that after taking the first differences most of the variables became integrated of order 1. Other variables were integrated of order 0. Variables integrated of order 0 were also included in the estimation of the error-correction estimation after taking their first differences so that all variables included in the regression are of the same order and for interpretation purposes..

Co-integration Analysis

Since more than one variable was included in the co-integration regression equation, critical values generated by the Mackinnon (1991) and Ericsson and Mackinnon (2002) method were used for co-integration analysis. This is because ADF and P-P do not take into account finite samples and asymptotic distribution properties (Mackinnon, 1991). Results for co-integration analysis (unit root test for the residuals-the error-correction term) are summarized in Table 5.7. An examination of unit root tests for the residuals in Table 5.7 fail to reject the null hypothesis of non-stationary series, suggesting that the variables in the co-integration regression equation are co-integrated. This warrants the use of the error-correction model to examine short-run and long-run dynamic changes in public investment spending in Tanzania, Kenya and Uganda.

Error-Correction Estimation Results

Co-integration analysis results in Table 5.7 demonstrate that variables in the co-integration regression equation are co-integrated. This suggests that we can proceed to estimating the error-correction equation (5.4) to investigate short-run and long-run effects of economic reforms and macroeconomic environment, structure of the economy, size of the government and

level of development on public investment spending in Tanzania, Kenya and Uganda. Tables 5.8, 5.9 and 5.10 report both co-integration (column 1) and error-correction (column 2) estimation results for physical capital, human capital development, education and health spending for the three countries respectively. It is apparent from the results that there exist a long-run relationship between openness to the rest of the world, countries' economic conditions and public investment spending on physical capital (infrastructure), human capital development, education and health in Tanzania, Kenya and Uganda. This is supported by the negative and statistically significant adjustment coefficient (error-correction term). A close examination at the results in Tables 5.8, 5.9 and 5.10 suggests, however, that there are noticeable differences among the three countries as described below.

Tanzania

Table 5.8 reports the co-integration (column 1) and error-correction (column 2) regression results for physical capital and overall human capital development as well as its components: education and health for Tanzania. The results show that there are short-run and long-run relationships between external debt and public investment spending on physical and human capital development in Tanzania. Strong support is inferred by the negative signs on the adjustment coefficients (error-correction term) across capital development spending categories. This suggests that there are short-run and long-run dynamic stability. That is, the movement of changes in public investment spending on infrastructure, human capital development, education and health towards the steady state are partly explained great openness of the Tanzanian economy to the rest of the world; as well as its prevailing economic structure, macroeconomic environment and level of development. However, the speed of adjustment towards the equilibrium among the public investment spending category varied. Physical capital adjusted faster, followed by education, human capital development and lastly heath, as reflected by the absolute value of adjustment coefficients (Table 5.8).

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The coefficients on lagged dependent variables for each category of public investment spending are positive and statistically significant. This signals that there are partial short-run and long-run adjustments in physical capital, human capital development, education and health spending investment in Tanzania over time. Results in Table 5.8 also suggest that there are significant short-run effects of different variables included in the co-integration and error-correction regression models. In the short-run, contrary to the prior expectations, changes in total external debt positively and significantly contributed to increase spending on physical capital and health as well as on overall human capital development and education, though insignificant. The possible explanation for this could suggest that spending on the provision of social services was protected during fiscal adjustment in order to maintain social cohesion and political legitimacy.

The results also reveal that in the short-run, openness to the global economy is positively and significantly associated with increased spending on health investment and though insignificant is negatively associated with spending on physical capital, education and overall human capital development investment spending in Tanzania. As expected official development aid (ODA) is positively and significantly linked with increased public investment spending on overall human capital development and health as well as physical capital and education, although the estimated coefficients generally are not statistically significant.

Tax revenue positively and significantly contributed to increase spending by the Tanzanian government on overall human capital development as well as on education and health. It seems the government commits its meager resources to human capital development. This could be attributed to the commitment of the government to HIPC initiative conditionalities and MDGs framework. Although not significant, changes in tax revenues had negative impact on physical capital spending. This finding is consistent with the theoretical literature that during fiscal adjustment for a government facing a budget constraint spending on physical infrastructure suffers the most from expenditure cuts. This is also reflected by how each spending category behaved as a result of changes in tax revenue. In order to ascertain the responsiveness of

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government spending of each spending to changes in tax revenue, both short-run and long-run elasticities of public investment on physical infrastructure and human capital development (education and health) were estimated. Results of the estimated elasticities are reported in Table 5.11. The results show that government spending on physical infrastructure, education and health was less sensitive to changes in tax revenue as evidenced by the elasticity of less than one both in the short- and long-run in all cases. It can also be noted from the results that government spending on physical infrastructure was relatively less responsive to changes in tax revenue both in the short-run and long-run as compared to education and health spending.

Contrary to a prior expectation, urbanization negatively and significantly affects public investment spending on health, though insignificant on physical capital, human capital and education. In the short-run, the results demonstrate that inflation negatively and significantly affects public investment expenditure on overall human capital development and education.

Changes in the public fiscal deficit, contrary to expectations, display a positive correlation with physical capital, overall human capital development and health spending as well as education although not significant. As expected, per capita GDP is positively and significantly associated with increased public investment spending on overall human capital development, education and health spending, as well as on physical capital development, although not statistically significant.

Kenya

Co-integration and error-correction estimation results for Kenya are reported in Table 5.9 under columns 1 and 2, respectively, for all public investment spending categories under investigation. The results demonstrate that there exist short-run and long-run relationships between Kenya's openness to international trade, macroeconomic environment, size of government, structure of the economy and level of development and public investment spending on overall human capital development, infrastructure, education and health. This is evidenced by

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the negative and statistically significant adjustment coefficients (error-correction term) across all government expenditure categories. This implies that long-run government investment spending on overall human capital development; physical capital; education and health gravitate towards the equilibrium in response to changes in macroeconomic environment, economic structure, the size of the government and level of development. The speed towards the equilibrium varies among the public investment categories, physical capital investment moving faster, followed by health spending, then overall human capital development spending, and lastly education (Table 5.9).

Results in Table 5.9 also suggest that there are partial adjustments in Kenya's public investment expenditures on physical and human capital development as well as on education and health. Strong support is implied by the positive and statistically significant coefficients on lagged dependent variables in all co-integration regression equations (see Table 5.9, column 1). Table 5.9 reveals some important significant short-run effects of variables on government investment spending in Kenya which are worth mentioning at this point.

In the short-run, Kenya's openness to the rest of the world had significant adverse impact on public investment on overall human capital development, education and health. Spending on military apparatus seems to exert significant positive and negative effects on physical infrastructure development and education, respectively. Though insignificant, defense spending is also negatively and positively associated with public spending on human capital development and health respectively. Surprisingly, ODA seem to be statistically and negatively associated with health spending in Kenya in the short-run. However, ODA, though not significant is positively associated with other spending categories (Table 5.9).

Table 5.9 also demonstrates that in the short-run tax revenue in Kenya had a positive and significant impact on public spending on overall human capital development and education. Although not significant short-run changes in tax revenue has positive effects on Kenya's public investment spending on physical capital and health. Short-run and long-run elasticities of

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government spending on each spending category with respect to tax revenue were estimated to ascertain their responsiveness to changes in tax revenue. Table 5.11 displays the elasticities of each government spending category both in the short-run and long-run. The results show that both in the short-run and long-run, government spending on physical infrastructure, education and health was less responsive to changes in tax revenue as indicated by a less-than-unity elasticity coefficient. The results show that spending on health was relatively less responsive to changes in tax revenue both in the short-run and long-run as compared to spending on physical infrastructure and education. This suggests that fiscal adjustment in Kenya insofar as it was accompanied by rising tax revenue, had no adverse impact on public investment spending. However, adjustments in the public fiscal deficit adversely affected public investment spending in Kenya. The results in Table 5.9 reveal that public fiscal adjustment had significant adverse impact on physical and human capital development as well as on education in Kenya.

Inflation displays a significant negative correlation with physical capital development. Though, insignificant it is positively and negatively associated with public spending on overall human capital development, education and health spending respectively. Although not statistically significant, per capita GDP is negatively associated with physical capital development and positively related to overall human capital development spending.

Uganda

Table 5.10 depicts both co-integration (column 1) and error-correction (column 2) estimation results for Uganda for the period spanning from 1977 to 2005. It is apparent from the results that there are short-run and long-run relationships between public investment spending and Uganda's macroeconomic conditions, economic structure, level of development, size of government and openness to the rest of the world. Strong support is implied by the significant and negative coefficients of the error-correction term in all error-correction regression equations. This suggests that in the long-run, government spending on infrastructure, overall human capital

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development, education and health move towards the equilibrium in response to changes in macroeconomic conditions, economic structure, size of the government, level of development and openness to trade. The speed of convergence toward the steady state varies from one spending category to another; physical capital being the faster, followed by education, then human capital and lastly health. Coefficients on lagged dependent variables are not significant in the co-integration regressions, suggesting that there are no partial significant adjustments of public investment spending on physical capital, overall human capital development and its components-education and health.

The results in Table 5.10 suggest that in the short-run, as Uganda continued to open its economy to the rest of the world, the government increased spending on human capital development. This is implied by the positive and significant coefficients of the measure of openness (TRADE) on human capital and its components. Surprisingly, contrary to prior expectation, the coefficients of ODA on overall human capital development and education spending are negative and statistically significant. This could reflect the existence of inefficiencies in the targeting or the misuse of public resources in Uganda.

The results also demonstrate that tax revenue had positive and statistically significant effects on public investment in Uganda. This is supported by positive and significant coefficients across all spending categories. Since tax revenue seem to be an important determinant of public investment it is important to ascertain the responsiveness of public investment to changes in tax revenue. Table 5.11 depicts estimated short-run and long-run elasticities for each government spending category. The results reveal that spending on physical infrastructure was more responsive to changes in tax revenue in the long-run in Uganda, as indicated by the elasticity of greater than one. The results also show that spending in physical infrastructure, education and health was relatively responsive to changes in tax revenue in Uganda when compared to its counterparts. It is also evident from the results in Table 5.10 that the public fiscal deficit had no adverse impact on human capital development investment spending. Strong support is provided

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by positive and statistically significant coefficients on human capital and health, as well as on education though not significant, as opposed to an insignificant negative coefficient on physical capital development.

In the short-run, as expected, inflation displays significant negative impacts on human capital development investment and its components, as well as negative impacts on physical capital although not statistically significant. As expected, the results demonstrate that public debt had been associated with negative effects on public investment in Uganda. Spending on military had insignificant positive effects on physical capital and health spending and negative effects on overall human capital and education spending (Table 5.10).

5.5 Conclusions

This chapter analyzed the trends, composition and determinants of various categories of government spending in Tanzania, Kenya and Uganda. It is apparent from the results in this chapter that all the three countries have experienced declines in one or more of the public spending categories. However, it is difficult to conclude firmly that economic liberalization has contributed to the decline in public investment spending in these countries. This is because the trends are mixed as are the econometric results for various public investment categories. Nonetheless, a few unambiguous conclusions can be drawn.

The results unambiguously demonstrate that public spending on infrastructure; human capital and education have declined in the course of economic reforms in Tanzania and have increased in Uganda. For Kenya the results show unambiguous decreases in government spending on physical capital and health investment spending. It is also evident from the results that changes in tax revenue have strong impacts on public investment spending in the three countries. The findings of this chapter are consistent with both the empirical and theoretical literature that when the government is in short supply of resources to finance its budgets, physical infrastructure is the

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first expenditure item to suffer from government expenditure compression during fiscal adjustment. This is particularly, evident in Tanzania.

The results show that ODA had negative effects of health spending in Kenya and human capital development spending in Uganda. This is an indication of the diversion of foreign aid funds to other uses (McGillivary and Morrissey, 2004; O'Brien and Ryan, 2001).

The trends in the composition of the different government spending categories are mixed. Comparing the pre-reform and post-reform periods, all spending categories declined in Tanzania post-reform period. For Kenya, the story is different. Education spending increased in Kenya, but spending in health, infrastructure and defense declined during the post-reform period. In Uganda, all the spending categories increased, except for defense spending which declined during the post-reform period.

It is evident from the findings in this chapter that there are variations in the sectoral priorities spending in the three countries. The results indicate that spending on defense as share in total government expenditure has been reduced in all the three countries, but it has relatively remained higher in Uganda as compared to Tanzania and Kenya. Tanzania allocates most of its resources on general public services, followed by physical infrastructure. Education and defense get almost the same amount of resources. The priority sectors in Kenya are physical infrastructure, education and public services. Uganda's priority sectors are physical infrastructure, defense and general public service. Overall, the share of human capital development in total government spending is relatively lower in Tanzania as compared to its counterparts, Kenya and Uganda. This calls into question whether Tanzania will be able to achieve MDGs and PRSPs poverty reduction goals and overall economic development, given the meager resources the country spends on human capital development. Following the work on endogenous growth theory, it has been widely acknowledged that human capital development has large long-run economic growth and poverty reduction impacts. Higher economic growth in turn has positive

impact on human capital development outcomes and long-term solution to poverty. Therefore, low spending on human capital development is cause for concern.

Several policy lessons can be drawn from this chapter. First, increase in tax revenue has positive impacts on public investment spending in physical capital and human capital development as well as education and health in all the three countries. This suggests that governments in these three countries should continue to reform their tax system in order to bolster revenue generation and thus increase availability of public resources to finance budget expenditure. This in turn will help to reduce poverty and promote overall economic development in these countries. Revenue generation can be improved through improving tax administration, expanding tax bases, bringing in more taxpayers in the tax brackets, and reducing tax revenue leakages through tax exemption, noncompliance, evasion and embezzlement.

Second, the findings of this chapter have relevant policy implications for the achievement of the Millennium Development Goals (MDGs) and poverty reduction strategies' objectives. That is, the East African governments should strike a balance of the composition of government expenditure if they are to attain poverty reduction objectives as stipulated in the MDGs framework and in their Poverty Reduction Strategy Papers (PRSPs). This could be achieved by increasing spending on physical and human capital development and reducing their spending in unproductive sectors such as defense and general public services. Again, spending on physical and human capital development have direct long-run impacts on poverty reduction and economic growth. Utilizing resources more effectively and efficiency will enhance the achievements of MDGs and PRSPs objectives and long-run economic growth. Reprioritization of public expenditures into more productive sectors and achieving better governance should be at the fore in future institutional reforms in the three East African countries.

Table 5.1:   Trends in Central Government Expenditures in Tanzania, 1970-2005

Year	Central Government Expenditure (% of GDP)							Central Government Expenditures (% of Total Expenditure)					
	TTE	GPS	DFE	EDE	HEE	CAE	HCE	GPS	DFE	EDE	HEE	CAE	HCE
1970	23.30	3.23	1.38	3.15	1.29	5.24	4.44	13.85	5.94	13.52	5.52	22.51	19.05
1971	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1972	22.86	2.54	2.33	3.39	1.42	5.48	4.82	11.12	10.18	14.84	6.23	23.96	21.06
1973	24.28	3.09	2.20	3.23	1.58	4.78	4.81	12.73	9.05	13.29	6.51	19.67	19.80
1974	27.68	3.06	3.09	3.40	1.84	4.50	5.24	11.05	11.16	12.29	6.64	16.26	18.93
1975	32.54	3.41	3.83	3.98	2.24	4.72	6.22	10.48	11.78	12.24	6.89	14.50	19.12
1976	25.49	2.73	3.10	3.60	1.82	3.83	5.42	10.71	12.16	14.11	7.14	15.01	21.25
1977	25.65	3.25	3.15	3.49	1.81	3.08	5.30	12.65	12.29	13.60	7.06	11.99	20.66
1978	29.34	3.66	4.19	4.12	2.08	3.62	6.20	12.46	14.29	14.03	7.09	12.34	21.11
1979	37.93	4.39	8.80	4.06	1.90	4.84	5.95	11.57	23.21	10.70	5.00	12.77	15.69
1980	29.77	3.76	2.64	3.92	1.75	4.17	5.68	12.63	8.85	13.18	5.89	14.01	19.08
1981	29.73	3.49	3.79	3.63	1.66	3.92	5.28	11.73	12.76	12.21	5.57	13.18	17.78
1982	31.65	4.09	3.96	3.95	1.70	3.71	5.65	12.92	12.53	12.47	5.38	11.72	17.85
1983	27.36	3.20	3.63	3.61	1.39	2.96	5.00	11.70	13.26	13.18	5.10	10.81	18.28
1984	24.13	3.90	3.09	2.82	1.32	2.26	4.13	16.14	12.79	11.67	5.46	9.36	17.13
1985	24.50	5.24	3.27	1.60	1.19	2.11	2.79	21.40	13.34	6.54	4.84	8.60	11.39
1986	22.49	5.19	3.36	1.56	1.01	1.53	2.56	23.08	14.95	6.92	4.48	6.80	11.40
1987	24.39	4.97	3.53	1.56	1.11	1.81	2.67	20.38	14.48	6.42	4.54	7.41	10.96
1988	19.96	4.25	2.08	1.09	0.89	1.35	1.98	21.27	10.42	5.44	4.47	6.77	9.91
1989	19.51	4.02	1.78	1.08	0.88	1.35	1.96	20.60	9.12	5.55	4.51	6.93	10.06
1990	18.29	4.29	1.57	1.20	0.90	1.21	2.11	23.45	8.59	6.58	4.92	6.61	11.51
1991	20.29	3.85	1.73	1.63	1.20	1.38	2.83	18.99	8.53	8.05	5.92	6.82	13.97
1992	19.96	3.48	1.70	1.54	1.17	1.65	2.71	17.45	8.53	7.72	5.85	8.27	13.57
1993	23.99	5.15	1.63	1.79	1.36	3.36	3.15	21.45	6.79	7.46	5.65	14.02	13.12
1994	22.41	4.72	1.09	1.69	1.61	3.29	3.30	21.07	4.88	7.55	7.16	14.68	14.72
1995	15.11	NA	1.49	NA	NA	NA	NA	NA	9.86	NA	NA	NA	NA
1996	14.49	3.29	1.19	0.99	0.54	0.61	1.52	22.69	8.19	6.80	3.70	4.19	10.50
1997	17.07	3.53	1.23	1.68	0.62	0.80	2.30	20.67	7.23	9.86	3.62	4.70	13.49
1998	15.91	4.98	1.51	0.92	0.72	0.91	1.64	31.30	9.46	5.78	4.50	5.73	10.28
1999	15.61	4.51	1.38	0.90	0.76	1.58	1.67	28.90	8.85	5.80	4.88	10.11	10.67
2000	17.59	4.18	1.32	2.39	0.95	1.67	3.34	23.74	7.51	13.58	5.39	9.52	18.97
2001	18.26	3.89	1.38	2.69	1.09	1.33	3.78	21.28	7.56	14.71	5.99	7.30	20.70
2002	19.35	4.21	1.51	2.83	1.12	1.26	3.96	21.74	7.82	14.64	5.81	6.53	20.45
2003	21.72	4.18	1.47	4.17	1.51	1.54	5.68	19.24	6.78	19.20	6.96	7.08	26.16
2004	19.35	10.01	1.50	1.09	0.73	1.76	1.82	51.70	7.75	5.64	3.75	9.11	9.39
2005	23.55	12.40	1.30	1.32	0.82	0.84	2.14	52.66	5.53	5.60	3.47	3.59	9.08

Notes: TTE: share of total expenditure in GDP; GPS: share of general public service expenditure; DFE: share of defense spending; EDE: share of education expenditure; HEE: share of health spending; ECA: share of spending economic activity; HCE: share of human capital development spending (education and health); CAE: share of physical capital (transport, communication, roads, fuel and energy) expenditure.

Table 5.2:   Trends in Central Government Expenditures in Kenya, 1970-2005

Year	Central Government Expenditure (% of GDP)							Central Government Expenditures (% of Total Expenditure)					
	TTE	GPS	DFE	EDE	HEE	CAE	HCE	GPS	DFE	EDE	HEE	CAE	HCE
1970	15.40	3.50	0.72	2.22	1.01	4.45	3.23	22.72	4.69	14.44	6.54	28.92	20.98
1971	17.94	3.48	0.74	3.16	1.16	6.30	4.31	19.41	4.13	17.59	6.45	35.11	24.04
1972	18.42	4.08	0.95	3.44	1.25	5.77	4.68	22.14	5.15	18.66	6.77	31.31	25.43
1973	17.73	1.06	1.05	3.55	1.12	5.61	4.68	5.99	5.93	20.05	6.34	31.63	26.39
1974	16.72	0.94	1.04	3.35	1.05	4.96	4.40	5.63	6.20	20.04	6.27	29.69	26.31
1975	19.40	0.97	1.22	3.97	1.31	5.94	5.28	5.00	6.31	20.48	6.75	30.61	27.23
1976	19.77	0.99	1.09	3.81	1.27	6.93	5.07	5.01	5.52	19.25	6.41	35.04	25.67
1977	16.98	2.61	1.78	3.35	1.23	5.17	4.58	15.35	10.47	19.72	7.21	30.46	26.94
1978	22.13	3.46	2.98	3.54	1.38	7.43	4.93	15.62	13.45	16.01	6.25	33.58	22.26
1979	23.58	3.36	3.57	3.69	1.46	7.20	5.14	14.23	15.15	15.64	6.18	30.54	21.82
1980	22.84	3.71	3.27	4.01	1.59	7.16	5.60	16.25	14.31	17.54	6.97	31.35	24.51
1981	24.46	4.16	2.28	4.44	1.66	7.64	6.10	17.01	9.33	18.17	6.78	31.23	24.95
1982	24.54	3.49	2.81	4.32	1.56	4.21	5.88	14.23	11.45	17.61	6.34	0.00	23.95
1983	22.97	2.70	2.66	3.98	1.34	6.35	5.33	11.74	11.57	17.34	5.85	27.65	23.19
1984	21.39	2.78	2.41	3.79	1.26	4.65	5.05	12.99	11.27	17.71	5.90	21.75	23.61
1985	23.33	3.16	1.70	3.96	1.22	3.32	5.17	13.54	7.28	16.95	5.21	14.23	22.17
1986	21.56	2.70	1.67	4.31	1.21	2.32	5.53	12.54	7.73	20.00	5.62	10.74	25.63
1987	24.40	3.75	1.95	4.65	1.29	3.80	5.94	15.35	8.01	19.04	5.30	15.59	24.34
1988	22.59	3.12	2.48	4.64	1.20	2.46	5.84	13.80	10.99	20.55	5.31	10.89	25.85
1989	26.43	3.54	1.80	4.78	1.25	3.35	6.02	13.40	6.81	18.07	4.71	12.69	22.78
1990	25.62	3.92	2.12	4.44	1.13	3.86	5.57	15.30	8.26	17.33	4.43	15.05	21.76
1991	28.48	3.89	2.05	4.77	1.20	3.44	5.97	13.68	7.21	16.76	4.22	12.09	20.98
1992	26.60	3.52	1.39	4.33	1.14	2.35	5.47	13.23	5.24	16.29	4.29	8.83	20.58
1993	29.08	3.54	1.34	4.10	1.12	1.85	5.22	12.19	4.61	14.11	3.83	6.35	17.95
1994	35.05	3.60	1.34	4.18	1.28	2.21	5.45	10.27	3.82	11.91	3.64	6.31	15.56
1995	27.13	7.90	1.04	4.67	1.16	2.36	5.83	29.11	3.83	17.21	4.27	8.71	21.49
1996	26.52	4.18	1.31	4.62	1.32	2.61	5.95	15.75	4.95	17.43	4.99	9.83	22.43
1997	23.70	4.66	1.36	4.35	1.37	2.03	5.72	19.68	5.74	18.34	5.79	8.57	24.13
1998	37.03	4.52	1.20	5.43	1.51	1.59	6.95	12.21	3.23	14.67	4.09	4.30	18.76
1999	26.79	4.56	1.18	5.30	1.11	1.36	6.40	17.03	4.39	19.76	4.14	5.08	23.90
2000	23.32	4.55	1.08	4.93	0.95	2.01	5.88	19.53	4.62	21.15	4.07	8.60	25.22
2001	26.12	6.16	1.39	4.86	1.16	3.22	6.02	23.58	5.32	18.61	4.44	12.34	23.05
2002	29.95	3.40	1.57	5.35	1.46	10.20	6.81	11.37	5.23	17.87	4.88	34.07	22.75
2003	27.22	3.94	1.85	5.85	1.23	6.94	7.08	14.46	6.78	21.49	4.50	25.48	25.99
2004	29.55	3.51	1.84	6.13	1.20	9.02	7.34	11.89	6.22	20.76	4.07	30.54	24.83
2005	26.21	4.04	1.45	5.85	1.13	7.85	6.97	15.43	5.52	22.31	4.29	29.94	26.60

Notes: TTE: share of total expenditure in GDP; GPS: share of general public service expenditure; DFE: share of defense spending; EDE: share of education expenditure; HEE: share of health spending; HCE: share of human capital development spending (education and health); CAE: share of physical capital (transport, communication, roads, fuel and energy) expenditure.

Table 5.3:   Trends in Central Government Expenditures in Uganda, 1977-2005

Year	Central Government Expenditure (% of GDP)							Central Government Expenditures (% of Total Expenditure)					
	TTE	GPS	DFE	EDE	HEE	CAE	HCE	GPS	DFE	EDE	HEE	CAE	HCE
1972	21.40	NA	4.97	3.28	1.12	2.44	4.40	NA	23.21	15.32	6.09	11.41	21.41
1973	16.25	NA	1.84	2.74	0.99	3.22	3.73	NA	11.33	16.89	4.72	19.82	21.62
1974	16.87	NA	3.05	2.57	0.72	2.88	3.29	NA	18.07	15.24	3.47	17.04	18.71
1975	14.79	3.90	2.69	2.11	0.60	2.62	2.71	26.35	18.21	14.25	3.58	17.70	17.83
1976	14.27	4.06	2.57	2.15	0.80	2.22	2.95	28.48	17.98	15.07	4.47	15.55	19.55
1977	9.71	2.04	2.22	1.50	0.78	1.65	2.28	21.03	22.85	15.43	8.06	16.96	23.49
1978	9.26	1.85	2.20	1.36	0.76	1.33	2.12	19.94	23.74	14.68	8.25	14.40	22.93
1979	6.17	1.17	1.56	1.08	0.32	1.36	1.40	19.02	25.28	17.43	5.18	22.03	22.61
1980	5.35	1.35	1.23	0.80	0.27	0.66	1.07	25.13	23.04	14.90	5.08	12.34	19.97
1981	4.37	1.36	1.08	0.55	0.26	0.67	0.81	31.10	24.63	12.59	5.87	15.38	18.46
1982	9.87	1.62	3.06	1.22	0.42	2.87	1.64	16.41	31.03	12.37	4.28	29.04	16.65
1983	10.18	1.47	3.38	1.12	0.40	2.63	1.51	14.47	33.16	10.97	3.88	25.86	14.86
1984	11.06	1.85	2.58	1.29	0.28	3.48	1.57	16.71	23.31	11.68	2.53	31.50	14.21
1985	8.64	1.33	2.00	1.09	0.30	3.05	1.38	15.42	23.18	12.58	3.42	35.31	16.00
1986	7.61	1.88	1.55	1.07	0.17	1.54	1.24	24.75	20.35	14.10	2.24	20.31	16.35
1987	5.21	1.37	1.23	0.41	0.10	1.85	0.51	26.24	23.58	7.78	1.94	35.42	9.72
1988	5.38	1.82	1.23	0.76	0.14	2.70	0.90	33.88	22.78	14.12	2.51	50.10	16.63
1989	7.79	1.81	1.67	0.80	0.24	3.34	1.04	23.24	21.49	10.27	3.14	42.91	13.41
1990	11.17	1.39	2.26	0.93	0.34	4.45	1.27	12.42	20.21	8.37	3.04	39.87	11.41
1991	12.09	1.20	2.02	1.00	0.38	5.20	1.37	9.90	16.70	8.25	3.10	43.00	11.35
1992	14.84	1.34	1.48	0.37	0.13	4.77	0.49	9.04	9.99	2.47	0.86	32.13	3.33
1993	18.26	2.93	1.54	1.17	0.42	5.74	1.59	16.04	8.41	6.39	2.30	31.42	8.69
1994	16.77	2.59	1.66	0.93	0.37	4.17	1.30	15.42	9.90	5.55	2.23	24.89	7.78
1995	15.45	2.89	1.91	1.90	0.74	4.30	2.64	18.71	12.33	12.31	4.81	27.84	17.11
1996	16.50	2.30	1.94	1.78	0.89	4.30	2.67	13.94	11.75	10.80	5.38	26.08	16.18
1997	16.98	2.15	2.07	2.35	0.68	3.82	3.03	12.67	12.16	13.82	4.03	22.51	17.85
1998	15.74	2.45	1.76	2.73	0.69	4.64	3.42	15.55	11.17	17.32	4.38	29.50	21.70
1999	16.86	1.57	2.59	3.14	0.78	5.81	3.92	9.31	15.35	18.64	4.62	34.48	23.26
2000	19.27	2.07	2.37	3.45	0.85	5.84	4.30	10.72	12.27	17.89	4.40	30.28	22.29
2001	20.95	3.30	2.21	3.67	1.08	5.38	4.76	15.75	10.55	17.53	5.18	25.67	22.71
2002	22.97	2.78	2.18	4.22	1.51	4.99	5.72	12.12	9.48	18.36	6.56	21.74	24.92
2003	21.96	1.79	2.02	3.89	1.50	4.38	5.39	8.13	9.18	17.72	6.84	19.93	24.56
2004	22.39	2.18	2.22	3.65	1.47	4.84	5.12	9.72	9.91	16.32	6.55	21.63	22.87
2005	21.80	1.59	2.23	3.84	2.33	4.26	6.17	7.28	10.21	17.63	10.68	19.53	28.31

Notes: TTE: share of total expenditure in GDP; GPS: share of general public service expenditure; DFE: share of defense spending; EDE: share of education expenditure; HEE: share of health spending; HCE: share of human capital development spending (education and health); CAE: share of physical capital (transport, communication, roads, fuel and energy) expenditure.

Table 5.4:   Trends in Central Government Pre- and Post-Reform in East Africa

Variable	Pre-Reform Period (1970-86)	Post-Reform Period (1987-2005)	Whole Period (1970-2005)
Tanzania			
Composition of Expenditures (% of GDP)			
Social (Human Capital)	4.96	2.70	3.76
• Education	3.34	1.70	2.47
• Health	1.62	1.00	1.29
Infrastructure	3.80	1.54	2.60
Defense	3.49	1.60	2.46
General Public Service	3.64	4.99	4.36
Total Expenditure	27.42	19.31	23.01
Composition of Expenditures (% of Total Expenditure)			
Social (Human Capital)	18.09	13.75	15.80
• Education	12.17	8.69	10.33
• Health	5.92	5.06	5.47
Infrastructure	13.97	7.74	10.67
Defense	12.41	8.31	10.33
General Public Service	13.51	25.48	19.85
Other Expenditure	42.02	44.72	43.35
Total Expenditure	100.00	100.00	100.00
Kenya			
Composition of Expenditures (% of GDP)			
Social (Human Capital)	6.00	6.13	5.60
• Education	4.70	4.91	4.34
• Health	1.30	1.22	1.26
Infrastructure	5.61	3.82	4.66
Defense	1.88	1.56	1.71
General Public Service	2.77	4.23	3.54
Total Expenditure	20.54	27.46	24.19
Composition of Expenditures (% of Total Expenditure)			
Social (Human Capital)	24.41	22.58	23.44
• Education	18.07	18.09	18.08
• Health	6.34	4.49	5.36
Infrastructure	26.69	13.96	19.97
Defense	8.82	5.83	7.24
General Public Service	13.49	15.64	14.63
Other Expenditure	26.59	41.99	34.72
Total Expenditure	100.00	100.00	100.00
Uganda			
Composition of Expenditures (% of GDP)			
Social (Human Capital)	2.14	2.93	2.58
• Education	1.59	2.16	1.91
• Health	0.55	0.77	0.67
Infrastructure	2.17	4.46	3.45
Defense	2.40	1.92	2.13
General Public Service	1.99	2.08	2.04
Total Expenditure	11.05	15.92	13.77
Composition of Expenditures (% of Total Expenditure)			
Social (Human Capital)	18.97	17.05	17.90
• Education	14.23	12.71	13.38
• Health	4.74	4.34	4.52
Infrastructure	20.31	30.47	25.99
Defense	22.62	13.55	17.55
General Public Service	21.57	14.74	17.38
Other Expenditure	16.53	24.19	21.18
Total Expenditure	100.00	100.00	100.00

Table 5.5:   Trends in Central Government Expenditure in Different Policy Episodes in East Africa

Variable	Tanzania					Kenya					Uganda			
	70-80	**81-85**	**86-92**	**93-95**	**96-05**	**70-79**	**80-86**	**87-91**	**92-96**	**97-05**	**70-79**	**80-86**	**87-91**	**92-05**
Government Expenditures (% of GDP)														
Social (Human Capital)	5.80	4.24	2.37	3.22	2.79	4.63	5.53	5.87	5.58	6.58	2.86	1.32	1.02	3.61
• Education	3.63	2.86	1.35	1.74	1.90	3.41	4.12	4.66	4.38	5.34	2.10	1.02	0.78	2.65
• Health	1.17	1.38	1.02	1.48	0.89	1.22	1.41	1.21	1.20	1.24	0.76	0.30	0.24	0.96
Infrastructure	4.43	2.75	1.46	3.33	1.23	5.98	5.09	3.38	2.28	4.91	2.21	2.13	3.51	4.80
Defense	3.47	3.52	2.07	1.40	1.38	1.51	2.40	2.08	1.29	1.43	2.64	2.13	1.68	2.01
General Public Service	3.31	4.18	4.14	4.93	5.52	2.44	3.24	3.64	4.55	4.37	2.60	1.55	1.52	2.80
Total Expenditure	27.88	26.64	20.40	20.50	18.29	18.81	23.01	25.50	28.88	27.77	13.59	8.15	8.33	18.62
Government Expenditures (% of Total Expenditure)														
Social (Human Capital)	19.58	15.64	11.68	13.92	14.97	24.71	24.00	23.14	19.60	23.91	21.02	16.64	12.51	18.68
• Education	13.18	10.50	6.63	7.51	10.16	18.19	17.90	18.35	15.39	19.44	15.54	12.74	9.76	13.77
• Health	6.40	5.14	5.05	6.41	4.81	6.52	6.10	4.79	4.21	4.47	5.48	3.90	2.75	4.91
Infrastructure	16.30	10.08	7.13	14.35	6.78	31.69	19.56	13.26	8.01	17.66	16.86	24.25	42.24	26.26
Defense	11.89	13.27	9.95	7.18	7.67	7.70	10.42	8.26	4.49	5.23	20.08	25.53	20.95	10.90
General Public Service	11.92	16.16	20.36	21.26	29.39	13.11	14.04	14.31	16.11	16.13	22.96	20.57	21.14	12.46
Other Expenditures	40.31	44.85	50.88	43.29	41.19	22.79	31.98	41.03	51.79	37.07	19.08	13.01	3.16	31.70
Total Expenditure	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

Table 5.6:   **Unit Root Tests for Variables in the Regression Analysis**

Variables	Tanzania			Kenya			Uganda		
	ADF Z(t) value	**PP Z(t) Value**	**I(?)**	**ADF Z(t) value**	**PP Z(t) Value**	**I(?)**	**ADF Z(t) value**	**PP Z(t) Value**	**I(?)**
CAE	-2.852*	-3.905**	I(1)	-3.466***	-6.976***	I(1)	-3.783***	-5.184***	I(1)
HCE	-1.974	-6.487***	I(1)	-5.095***	-7.693***	I(1)	-7.703***	-7.414***	I(1)
EDE	-2.185	-6.572***	I(1)	-5.265***	-7.976***	I(1)	-3.491**	-8.046***	I(1)
HEE	-2.666*	-6.137***	I(1)	-4.801***	-6.464***	I(1)	-3.933***	-5.735***	I(1)
DFE	-5.004***	-9.254***	I(1)	-3.247**	-4.947***	I(1)	-4.978***	-4.424***	I(1)
EXD	-5.698***	-5.095***	I(1)	-3.167**	-5.322***	I(1)	-1.814	-4.183***	I(1)
TRADE	-2.344	-3.668***	I(1)	-4.277***	-6.871***	I(1)	-6.193***	-6.139***	I(1)
ODA	-3.254**	-5.654***	I(1)	-3.025**	-5.704***	I(1)	-3.736**	-6.877***	I(1)
TXRV	-4.681***	-6.989***	I(1)	-4.669***	-7.165***	I(1)	-5.103***	-6.342***	I(1)
URBAN	-2.494	-3.324**	I(1)	-	-	-	-	-	-
INFLT	-3.822***	-6.548***	I(1)	-3.782***	-6.099***	I(1)	-2.889**	-5.555***	I(1)
GBDEF	-2.958**	-4.028***	I(1)	-3.888***	-5.972***	I(1)	-4.361***	-5.791***	I(1)
PCGDP	-2.084	-3.689***	I(0)	-2.331	-6.759***	I(0)	-3.234**	-5.494***	I(0)

Notes: CAE: share of physical capital (transport, communication, roads, fuel and energy) expenditure, DFE: share of defense spending; EDE: share of education expenditure; HEE: share of health spending; HCE: share of human capital development spending (education and health); GBDEF: the change in public budget deficit; ODA: Natural logarithm of the share of the share of official development aid in GDP; EXD: Natural logarithm of the share of the share of external debt in GDP; TRADE: is the share of trade volume (percentage of import plus export) in GDP; TXRV: is the natural logarithm of the share of tax revenue in GDP; URBN: is the natural logarithm of urbanization (% of the urban population to the total population); INFLT: is the natural logarithm of inflation rate; PCGDP: is the natural logarithm of real per capita GDP.

*** = significant at 1% level, ** = significant at 5% level and * = significant at 10% level

Table 5.7: **Results for Co-integration Analysis**

Equation	Without Constant			Without Trend			With Trend		
	Z(t)	1%	5%	Z(t)	1%	5%	Z(t)	1%	5%
Tanzania									
CAE	-4.354**	-4.919	-3.939	-4.269	-5.362	-4.323	-4.182	-5.802	-4.699
HCE	-6.625***	-4.710	-4.174	-6.489***	-5.806	-4.542	-6.435***	-6.301	-4.917
EDE	-6.075***	-4.710	-4.174	-5.965***	--5.806	-4.542	-5.944**	-6.301	-4.917
HEE	-9.003***	-4.710	-4.174	-8.759***	-5.806	-4.542	-8.481***	-6.301	-4.917
Kenya									
CAE	-6.511***	-4.206	-3.407	-6.422***	-4.696	-3.872	-6.346***	-5.144	-4.293
HCE	-5.425***	-4.510	-3.602	-5.330***	-4.961	-4.091	-5.282**	-5.383	-4.480
EDE	-5.043***	-4.510	-3.602	-4.958**	-4.961	-4.091	-4.991**	-5.383	-4.480
HEE	-5.656***	-5.047	-4.109	-5.542***	-5.432	-4.454	-5.428**	-5.813	-4.794
Uganda									
CAE	-5.077***	-4.725	-3.736	-4.954**	-5.273	-4.170	-4.815**	-5.729	-4.589
HCE	-4.774**	-5.067	-3.977	-4.668**	-5.556	4.376	-4.552	-6.053	-4.771
EDE	-4.943**	-5.067	-3.977	-4.833**	-5.556	4.376	-4.729	-6.053	-4.771
HEE	-4.024**	-4.725	-3.736	-3.927	-5.273	-4.170	3.762	-5.729	-4.589

*** = significant at 1% level, ** = significant at 5% level and * = significant at 10% level (Critical values at 1% and 5% estimated using Ericsson and Mackinnon (2002) Method.

Table 5.8:   Determinants of Public Investment Spending in Tanzania

Variables	Physical Capital		Human Capital		Education		Health	
	1	2	1	2	1	2	1	2
CAP_{t-1}	0.503***		0.704***		0.583***		0.785***	
	(3.42)				(3.54)		(7.46)	
EXD	0.226***	0.322***		0.128		0.143		0.153**
	(3.14)	(3.49)		(1.54)		(1.28)		(2.40)
TRADE	0.047	-0.443	0.250	-0.069	0.228	-0.066	0.451**	0.282
	(0.33)	(1.26)	(1.26)	(0.19)	(0.85)	(0.14)	(2.69)	(1.10)
ODA	0.183	0.180	0.216	0.431*	0.306	0.406	0.074	0.346**
	(1.50)	(0.80)	(1.41)	(1.86)	(1.49)	(1.42)	(0.56)	(2.27)
DEFNS		0.014		-0.044		-0.079		0.071
		(0.09)		(0.30)		(0.40)		(0.68)
TXRV		-0.092	0.825**	0.566	1.153**	0.850*	0.756**	0.570**
		(0.22)	(2.38)	(1.39)	(2.48)	(1.69)	(2.62)	(2.13)
URBAN		-3.669		-2.636				
		(1.14)		(0.75)				
INFL		0.020	-0.135*	-0.084	-0.218**	-0.140	-0.016	-0.017
		(0.16)	(1.80)	(0.61)	(2.15)	(0.78)	(0.25)	(0.16)
GBDEF	0.008	0.027	0.015	0.027*	0.018	0.033	0.008	0.023*
	(0.55)	(1.50)	(1.05)	(1.67)	(0.94)	(1.48)	(0.69)	(1.92)
PCGDP		0.155	0.423*	0.896*	0.590*	0.807	0.325*	0.934**
		(0.32)	(1.76)	(1.76)	(1.78)	(1.24)	(1.64)	(2.71)
TREND	-0.023**							
	(2.40)							
ECM_{t-1}		-0.544*		-0.479*		-0.526**		-0.477*
		(1.71)		(1.85)		(2.02)		(1.85)
CONS.	-0.059	0.090	-5.033**	0.064	-6.754*	-0.020	-5.116**	-0.006
	(0.10)	(0.88)	(2.02)	(0.58)	(1.98)	(0.32)	(2.47)	(0.18)
N	29	27	29	27	29	27	29	27
F-value	34.87***	2.38*	16.60***	1.21	12.19	1.01	25.20***	3.35**
R^2Adj.	0.8789	0.3471	0.7959	0.0749	0.7366	0.0047	0.8581	0.4485

Notes: CAP_{t-1}: is the natural logarithm of the share of the respective capital expenditure in GDP lagged one period; GBDEF: the change in public budget deficit; ODA: Natural logarithm of the share of official development aid in GDP; EXD: Natural logarithm of the share of external debt in GDP; TRADE: is the share of trade volume (percentage of import plus export) in GDP; TXRV: is the natural logarithm of the share of tax revenue in GDP; DEFNS: is the natural logarithm of the share of defense expenditure in GDP; URBN: is the natural logarithm of urbanization (% of the urban population to the total population); INFL: is the natural logarithm of inflation rate; PCGDP: is the natural logarithm of real per capita GDP; TREND: is the time trend variable; ECM_{t-1} is the residual of the regression of co-integrated variables lagged one period.

Figures in Parentheses are absolute t-values, *** = significant at 1% level, ** = significant at 5% level and * = significant at 10% level

Table 5.9:   Determinants of Public Investment Spending in Kenya

Variables	Physical Capital		Human Capital		Education		Health	
	1	**2**	**1**	**2**	**1**	**2**	**1**	**2**
CAP_{t-1}	0.763***		0.402***		0.431***		0.351*	
	(6.60)		(3.82)		(4.60)		(1.82)	
DEBT		-0.158		0.011		0.023		-0.025
		(1.26)		(0.46)		(0.85)		(0.63)
TRADE	0.272	0.334	-0.169*	-0.334***	-0.268**	-0.354***	0.061	-0.263*
	(0.57)	(0.65)	(1.74)	(3.28)	(2.63)	(3.19)	(0.38)	(1.63)
ODA		0.186	-0.030	0.005		0.034	-0.074*	-0.125*
		(0.86)	(1.21)	(0.10)		(0.71)	(1.61)	(1.76)
DEFNS		0.995**		-0.094	-0.045	-0.143*	0.111*	0.071
		(2.81)		(1.42)	(1.54)	(1.98)	(1.61)	(0.68)
TXRV		0.589	0.349***	0.224*	0.433***	0.296**	0.334	0.013
		(0.92)	(3.95)	(1.78)	(4.22)	(2.17)	(1.40)	(0.06)
INFL	-0.126	-0.160**		0.003		0.002		-0.001
	(1.58)	(2.06)		(0.17)		(0.13)		(0.03)
GBDEF	-0.045	0.186	-0.015**	-0.011*	-0.016**	-0.011	-0.010	-0.013
	(1.45)	(0.86)	(2.69)	(1.68)	(2.69)	(1.56)	(0.89)	(1.22)
PCGDP		3.113		0.518		0.694		0.120
		(1.49)		(1.23)		(1.52)		(0.02)
TREND							-0.007*	
							(1.66)	
ECM_{t-1}		-0.876***		-0.667***		-0.521**		-
		(3.96)		(3.18)		(2.50)		0.729***
								(3.19)
CONS.	-0.591	0.013	0.791*	0.008	0.767	0.010	-0.834	-0.001
	(0.31)	(0.23)	(1.70)	(0.73)	(1.55)	(0.86)	(1.03	(0.07)
N	35	34	35	34	35	34	35	34
F-value	16.87***	2.24**	31.37***	3.24**	41.65***	2.69**	4.10***	2.76**
R^2Adj.	0.6513	0.2525	0.8170	0.3783	0.8567	0.3157	0.3894	0.32.44

Notes: CAP_{t-1}: is the natural logarithm of the share of the respective capital expenditure in GDP lagged one period; GBDEF: the change in public budget deficit; ODA: Natural logarithm of the share of official development aid in GDP; EXD: Natural logarithm of the share of external debt in GDP; TRADE: is the share of trade volume (percentage of import plus export) in GDP; TXRV: is the natural logarithm of the share of tax revenue in GDP; DEFNS: is the natural logarithm of the share of defense expenditure in GDP; URBN: is the natural logarithm of urbanization (% of the urban population to the total population); INFL: is the natural logarithm of inflation rate; PCGDP: is the natural logarithm of real per capita GDP; TREND: is the time trend variable; ECM_{t-1} is the residual of the regression of co-integrated variables lagged one period.

Figures in Parentheses are absolute t-values, *** = significant at 1% level, ** = significant at 5% level and * = significant at 10% level

Table 5.10:   Determinants of Public Investment Spending in Uganda

Variables	Physical Capital		Human Capital		Education		Health	
	1	2	1	2	1	2	1	2
CAP_{t-1}	-0.036		-0.098		-0.080		0.082	
	(0.35)		(0.58)		(0.50)		(0.36)	
DEBT		-0.077		-0.057		-0.060		-0.260
		(0.37)		(0.18)		(0.19)		(0.60)
TRADE	-0.604**	-0.147	1.359**	1.622***	-1.029*	1.383**	1.843**	1.830**
	(2.74)	(0.43)	(2.20)	(3.33)	(1.75)	(2.72)	(2.18)	(2.60)
ODA	0.536***	0.681***	-0.591***	-0.072	-0.641***	-0.090	-0.280*	0.186
	(6.10)	(3.83)	(3.63)	(0.29)	(3.88)	(0.36)	(1.63)	(0.54)
DEFNS		0.035		-0.042		-0.132		0.428
		(0.17)		(0.15)		(0.43)		(1.06)
TXRV	0.625***	0.658***	0.581***	0.812***	0.583***	0.842***	0.449*	0.518*
	(5.67)	(4.31)	(2.98)	(3.71)	(3.08)	(3.63)	(1.69)	(1.71)
INFL	0.029	-0.210	-0.140*	-0.149*	-0.115	-0.149*	-0.251**	-0.203*
	(0.61)	(0.40)	(1.73)	(1.89)	(1.42)	(1.84)	(2.33)	(1.87)
GBDEF		-0.002		0.047*		0.038		0.064*
		(0.09)		(1.80)		(1.39)		(1.80)
TREND			0.039*		0.047**			
			(1.80)		(2.08)			
ECM_{t-1}		-1.106***		-1.009***		-1.010***		-0.779***
		(4.19		(4.12)		(4.03)		(2.95)
CONS.	0.874	-0.014	-3.963*	-0.008	-3.237	-0.005	-6.508*	-0.003
	(0.92)	(0.43)	(1.71)	(0.17)	(1.44)	(0.10)	(1.90)	(0.04)
N	25	24	25	24	25	24	25	24
F-value	50.21***	16.37***	33.99***	11.20***	32.45***	11.00	26.60***	5.09***
R^2Adj.	0.9111	0.8425	0.8919	0.7801	0.8872	0.7767	0.8421	0.5871

Notes: CAP_{t-1}: is the natural logarithm of the share of the respective capital expenditure in GDP lagged one period; GBDEF: the change in public budget deficit; ODA: Natural logarithm of the share of official development aid in GDP; EXD: Natural logarithm of the share of external debt in GDP; TRADE: is the share of trade volume (percentage of import plus export) in GDP; TXRV: is the natural logarithm of the share of tax revenue in GDP; DEFNS: is the natural logarithm of the share of defense expenditure in GDP; URBN: is the natural logarithm of urbanization (% of the urban population to the total population); INFL: is the natural logarithm of inflation rate; PCGDP: is the natural logarithm of real per capita GDP; TREND: is the time trend variable; ECM_{t-1} is the residual of the regression of co-integrated variables lagged one period.

Figures in Parentheses are absolute t-values, *** = significant at 1% level, ** = significant at 5% level and * = significant at 10% level

Table 5.11: **Short- and Long-run Elasticities of Public Spending with Respect to Tax Revenue**

Country	Physical Infrastructure		Education		Health	
	Short-run	Long-run	Short-run	Long-run	Short-run	Long-run
Tanzania	0.297	0.931	0.425	0.968	0.368	0.989
Kenya	0.171	0.834	0.256	0.973	0.115	0.789
Uganda	0.737	1.007	0.480	0.972	0.419	0.991

CHAPTER 6

CONCLUSIONS

This dissertation has explored the short-run and long-run fiscal consequences of economic reforms on government revenue and public investment spending in Tanzania, Kenya and Uganda. It has questioned the applicability of cross-country regressions, and static empirical studies on fiscal impacts of trade liberalization suggesting that these cannot be extrapolated to individual developing countries for policy prescriptions.

The dissertation argues that countries' heterogeneity in terms of their macroeconomic conditions, economic structure, level of development and institutional frameworks matters, and need not be neglected. Most previous empirical studies on the fiscal impact of trade liberalization have ignored the short-run and long-run dynamic effects of trade reforms, hence failing to capture the full range of the potential revenue and public investment spending consequences. This is because the effects of economic reforms can take a long time to materialize. The empirical analyses of the three country case studies presented in this dissertation confirm this. The impact of economic reforms on government revenue, tax performance and public investment spending is not the same in the three countries. This is partly due to the fact that Tanzania, Kenya and Uganda differ significantly in their economic structure, level of development, macroeconomic environment, institutional framework, and fiscal structure and policies.

This dissertation has contributed to the literature on the fiscal impact of trade liberalization by resolving some of these issues by applying the co-integration and error-correction modeling framework to analyze the revenue and public investment spending consequences of economic reforms in Tanzania, Kenya and Uganda, using time-series data over the period 1970-2005. The strength of this approach lies in the fact that it is able to distinguish between short-run and long-run dynamic effects. These have important implications for revenue and expenditure forecasting and fiscal and macroeconomic policy formulation.

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This chapter summarizes the findings of the three empirical analyses undertaken in this dissertation on the fiscal impact of economic reforms in Tanzania, Kenya and Uganda. The chapter also provides some policy suggestions that have emerged from the three empirical analyses.

6.1 Summary of Findings

This dissertation has set out to provide an understanding of whether economic reforms, particularly trade liberalization, have had adverse impacts on government revenue mobilization, tax performance and public investment spending in East Africa, with particular emphasis on Tanzania, Kenya and Uganda. Although it is not possible to draw conclusive generalizations on the fiscal impact of economic reforms, there are nevertheless important conclusions that merit summarizing.

6.1.1 Impact on Government Revenues

Chapter Three attempted to analyze the effects of trade reforms on government revenue mobilization in the three East African countries. The major findings are:

- Surprisingly, despite the declining trends of the share of government revenue in GDP in Tanzania, econometric results demonstrate that trade reforms had a positive impact on government revenue. In the case of Uganda, while government revenues exhibited an increasing trend, the econometric results suggest a negative impact of trade reform on government revenue. The results are inclusive in the case of Kenya.

- This suggests that the declining trend of the share of government revenue in GDP in Tanzania was associated with the weaknesses and inefficiencies in tax administration and tax collections and existence of tax revenue leakages due to tax evasion, tax avoidance, tax exemptions and embezzlement of the collected taxes in the tax system.

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- Kenya has been successful at establishing a relatively more efficient, less distortionary and buoyant domestic tax system. It raises significant revenue from VAT and income taxes compared to Tanzania and Uganda. This contributes to Kenya's higher levels of government revenue and tax revenue and its components (particularly domestic taxes-sales and excise tax and income tax) in GDP. Partly, this can be attributed to the fact that Kenya has relatively a well-developed manufacturing sector, and a larger share of the service sector in GDP, since these are easy-to-tax sectors as compared to the underdeveloped manufacturing sector and higher share of the agricultural sector in Tanzania and Uganda.

- All the three East African countries have switched from international trade taxes to domestic tax sources (sales and excise and income taxes) as major sources of government revenue, as evidenced by the declining trend of the share of trade taxes in GDP and tax revenue. This is a result of reduced their tariff rates following trade and liberalization. However, the share of international trade tax in GDP remains higher in Uganda than in Tanzania and Kenya.

- Tax revenue leakages and weaknesses and inefficiencies in tax administration and tax collection remain major challenges limiting the realization of the full potential of revenue mobilization in Tanzania, Kenya and Uganda.

6.1.2   Impact on Tax Performance

Chapter Four set out to empirically explore the responses of the tax systems to changes in trade policies implemented in the three East African countries. The following findings merit highlighting:

- Tax reforms implemented in the three countries have contributed to the improvement in tax performance in these countries. However, the responsiveness of Tanzania's tax system has been relatively sluggish as compared to its neighbors Kenya and Uganda.

- The results suggest that the declining trends of the ratios of government revenue and tax to GDP in Tanzania described in Chapter Three was partly due to weaknesses and inefficiencies in tax administration and tax collection, and tax revenue leakages as a result of tax evasion, tax exemptions and embezzlement of collected taxes.

- Uganda's impressive tax performance described in this chapter can be contrasted with its lower levels of the share of government and tax revenue described in Chapter Three. This anomaly is an indication of the existence of tax leakages, partly, due tax evasion, tax exemption and embezzlement of collected taxes, which go unrecorded in official government reports.

- The findings of this chapter confirm and extend the results presented in Chapter Three that despite committing to tax reforms, there are still structural and institutional problems that limit tax revenue generation in the three countries. That is, weaknesses and inefficiencies in tax administration, weak tax laws and legal enforcements, widespread legal and illegal tax exemptions, tax evasion and embezzlement of collected taxes remain major challenges limiting revenue generation in Tanzania, Kenya and Uganda. These problems need urgent attention in order to boost revenue generation in these countries.

6.1.3   Impact on Public Investment Spending

Chapter Five was an attempt to investigate whether trade openness, notably through its effects on government revenue had an impact on public investment spending in the three East African countries. Some pertinent findings from Chapter Five are:

- Inadequate and erratic revenue generation has adversely affected public investment spending in the three East African countries. This is particularly evident Tanzania, where the declining trends in government and tax revenue have been accompanied with the declining public investment in almost all spending categories.

- Where government revenue declined and revenue generation was inadequate, public investment spending in physical infrastructure declined. This again is particularly visible in Tanzania. Where government revenue increased and tax revenue performance has been more impressive, public investment spending rose, as in Uganda.

- The findings are consistent with the theoretical and empirical literature that in periods of restrictive fiscal policies and fiscal consolidation, public investment in physical infrastructure often suffers the most from government expenditure compression.

- ODA had statistically significant negative impacts on health spending in Kenya, and negative impact on overall human capital investment in Uganda. This suggests that there have been misallocations of foreign aid funds in Kenya and Uganda.

- Heterogeneity in sectoral spending priorities has significantly changed in the three countries. Spending on defense has been reduced; however, it has remained relatively higher in Uganda than in Tanzania and Kenya. The priority sectors that have been receiving higher shares of government expenditures are general public services, human capital development, and physical infrastructure in Tanzania, Kenya and Uganda, respectively.

- Spending in human capital development has been relatively low in Tanzania compared to that in Kenya and Uganda. This creates some concerns on commitments of the Tanzanian government to achieving the MDG objectives, reducing poverty and overall economic development.

- There are clear indications from the results that the three countries allocate high proportions of their resources on unproductive sectors (e.g. defense and general public services), which limit the availability of resources for productive sectors (physical infrastructure and human capital development-education and health).

6.2   Policy Implications and Further Research Work

The findings emanating from this dissertation have potential policy relevance for the design and formulation of sound fiscal and macroeconomic policies for enhancing revenue mobilization and generation as well as for achieving the Millennium Development Goals (MDGs) and Poverty Reduction Strategies (PRSPs) objectives. Some of the policy suggestions that can be drawn from the findings of the three empirical studies are as follows:

It is evident from the findings of the empirical studies in Chapters Three and Four that low levels of government revenue, sluggish tax performance and erratic revenue generation in the three countries partly has been due to weaknesses and inefficiencies in tax administration; and tax revenue leakages as a result of pervasive tax exemption, tax evasion, tax avoidance and embezzlement of collected taxes. In Uganda, trade reforms appear to have exacerbated these problems. Therefore, the three countries have the potential for mobilizing and generating more revenue if they can address these structural and institutional weaknesses in their tax systems.

Computerization of tax administration and collection; expansion of the tax base by bringing more taxpayers in the tax bracket; addressing problems associated with tax revenue leakages such as abolishing unnecessary tax exemptions and strengthening of tax collection by preventing tax evasion and avoidance, instituting strong legal enforcements in order to punish those engaging in tax evasion, embezzlement of collected taxes and corruption should be at the fore in the ongoing tax reforms in the three countries so as to enhance tax revenue collection.

These countries should also focus at providing incentives for the development of the manufacturing sector and commercialization of the agricultural sector, as means for the monetization and raising income and sales and excise taxes as well as trade taxes. Tanzania and Uganda should learn from Kenya's success story for designing a more non-distortionary domestic tax structure.

In order to achieve MDG and PRSP objectives and overall economic development, reprioritization of public expenditures should be at the fore in the planning and management of the public budget in the three countries. This should also be accompanied with more effective and efficient utilization of available meager resources. The focus should be changing the composition of government expenditure by allocating more resources into productive sectors-that is, increasing spending on physical and human capital development, and reducing spending in unproductive sectors such as defense and general public services. Spending on physical infrastructure and human capital development has long-run impacts on poverty reduction and economic development.

No one study can be exhaustive, and this is also true for the empirical studies presented in this dissertation. Several questions and issues have been left unanswered, and these merit further exploration. How can the three countries raise sufficient resources to meet their budget requirements? What are the full implications of inadequate and declining public expenditures for human development outcomes? Future work on these questions could contribute further to this literature.

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