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World Development Vol. xx, pp. xxx–xxx, 2017
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http://dx.doi.org/10.1016/j.worlddev.2017.02.019

Distributional Effects of Growth and Public Expenditures in Africa: Estimates for Tanzania and Rwanda

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Summary. — In this paper we explore the effects of fiscal policies and growth on measures of household welfare across the distribution of expenditures for two African countries: Rwanda and Tanzania. We explore the effect of government expenditures on expenditure growth in each quintile of the expenditure distribution and the effect of growth for each group. We find that the benefits of growth are concentrated among the better-off sectors of the population in these two countries (perhaps to the detriment of the poorer sectors) by looking at the effects within a country and across different groups of households and administrative entities. We exploit variation in expenditures and growth across and within regions of each country to estimate the elasticities of expenditure with respect to fiscal expenditure and mean expenditure growth at different points of the expenditure distribution, using household survey data and government expenditure data at the district level. We find that, overall, mean expenditure growth benefits the top expenditure groups. The welfare spillovers are mostly present for top 20% of the expenditure distribution, with the middle of the distribution in Tanzania responding slightly to these spillovers. Public/social expenditures do not appear to affect inequality considerably, but do tend to work toward decreasing inequality. However, mean expenditure growth is related to increases in inequality in the sense that the richest sectors of the population benefit the most from growth. We find that the growth elasticity of expenditure is only above one for the top quintile in both countries. In Tanzania, a 1% increase in average household expenditure is related to a 1.96% expenditure growth in the top quintile and 0.43% in the third quintile. In Rwanda, a 1% increase in average household expenditure is related to a 1.93% increase in household expenditure in the top 20% of the distribution.
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Key words — Tanzania, Rwanda, growth, inequality, fiscal policy

1. INTRODUCTION

The potential of using fiscal policies as a way of reducing poverty and inequality cannot be understated. These policies, however, are often mismanaged and, when the final results are disappointing, many argue that the problem is intrinsically one of the weaknesses of fiscal policy as an instrument to achieve these goals. There is little dispute that overall growth can reduce poverty, but the potential for growth effects to be amplified or dampened by complementary fiscal policies is less understood. We explore these linkages and how their effects are reflected in the expenditure distribution, bringing attention not only to the power of growth and fiscal policies as poverty reduction tools, but also to the kind of effects on inequality these have; namely, the extent to which fiscal policies in developing countries can decrease inequality.

The literature on the efficiency of government expenditures in developed countries is nuanced—depending on the types of expenditures analyzed, results point to different, but mostly positive, levels of inefficiency (Arjona, Ladaique, & Pearson, 2003; Folster & Henrekson, 2001; Schaltegger & Torgler, 2006). However, the case for developing countries might be very different. In contrast to developed countries, government expenditures in developing countries may be more easily influenced by powerful interest groups, or suffer from political volatility. These, and other factors, make it more likely for public and social expenditures to suffer from inefficiencies in targeting. Benefits aimed at the poor may instead reach non-poor or powerful social classes (World Bank, 2006). For example, Bose, Haque, and Osborn (2003) find that only capital expenditures and education outlays are significantly correlated with growth in a sample of developing countries, suggesting that more direct forms of aid may not reach their intended recipients.

In this paper we explore the effects of fiscal policies and growth on measures of the household welfare across the distribution of household expenditure for two African countries: Rwanda and Tanzania. We look at effects within each country as well as across different groups of households and administrative entities. We prefer this method in lieu of estimating parameters at the mean across different countries, since it can provide a better picture of which groups are driving the dynamics of inequality and growth, while simultaneously allowing heterogeneity across countries.

Rwanda and Tanzania present exceptional cases for studying these issues. Both have gone through a decentralization process, where more responsibilities in the provision of public goods and general administration have been transferred to regional and communal institutions. This is key to our identification strategy because we exploit variation in expenditures and growth across and within regions of each country to estimate the elasticities of expenditure with respect to these fiscal outlays at different points of the expenditure distribution. In addition, East Africa has been on a solid growth path in the last years; in Rwanda average per capita GDP growth between 2000 and 2005 was above 4.5% and above 3% in Tanzania. However, in Rwanda and Tanzania, growth has been accompanied by budgetary deficits and increasing in government expenditures from 11% of GDP in 2000 to 18% in Rwanda and to 16% in Tanzania (World Bank, 2016). This paper looks to provide evidence as to what type of budgetary allocation can compensate for the effects growth has across different income groups to improve equity.

The paper presents the results for each country separately using a common framework and the specific fiscal outlays

* Final revision accepted: February 12, 2017.

Please cite this article in press as: Almanzar, M., & Torero, M. Distributional Effects of Growth and Public Expenditures in Africa: Estimates for Tanzania and Rwanda, *World Development* (2017), http://dx.doi.org/10.1016/j.worlddev.2017.02.019

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reported in each country. Given this, the exercise in this paper looks to describe the implications of the framework for each country and not quantitatively compare and contrast the results across countries.

We use household survey data to characterize the distribution of expenditure of each country. For Tanzania we use the Household Budget Survey (HBS) for 2000–01 and 2007, while for Rwanda we use the Household Living Conditions Survey for 2000–01 (EICV1) and 2005–06 (EICV2). We use administrative data on public expenditures to characterize the government sector's expenditures. These consist of budget reports that describe the amount and the types of projects to which the government has made outlays. For Tanzania we use data from district-level budget reports for the 2001–07 period, and for Rwanda we use provincial- and regional-level budget reports for the 2004–05 period. While more recent household-level data are available, we used these waves to mirror the period for which the budget data were available and for which the changes in public expenditures are plausibly related to the changes observed in the household sector.

Typical evaluations focus on single measures of inequality such as the GINI coefficient or the poverty headcount ratio. In contrast, we first estimate a model within a comprehensive distributional framework, and subsequently evaluate the distributional impact of public expenditures. We separate government expenditures into two large groups: public/social goods expenditures, which include health, education, and infrastructure; and other expenditures, which include administrative expenses and expenditures in sectors where positive social externalities are limited or nonexistent. We further disaggregate these variables as a function of the source of financing (for example, development grants) and/or by the type of sector within each group of expenditure. This separation is largely determined by the availability of budget data at the regional or district level in each country. Having different categories in each country serves to illustrate the flexibility of the distributional framework we use and allows us to explore if there are different implications depending on the source of financing and the purpose of government expenditures. We part from the premise, considered especially true for developing countries, that an essential part of a government's responsibility is to provide public goods targeted to the poor. The accuracy of this premise is an empirical question that we address in this paper.

This paper tries to fill some gaps in the literature by applying a common theoretical framework to examine how the benefits of economic growth spill into the household sector and how such benefits affect the distribution of income within the household sector and to what extent fiscal policy makes a contribution to increase social equity and to decrease poverty in Rwanda and Tanzania.

2. PREVIOUS LITERATURE

In theory, proper public expenditure can be effective in promoting economic growth within an endogenous growth framework (Barro, 1990; Jones, Manuelli, & Rossi, 1993; Stokey & Rebelo, 1993). Since governments can provide a large array of goods and services such as national defense, justice services, public infrastructure, primary education, etc., the allocation of public expenditure is what determines whether the public expenditure is productive or not (Agénor & Neanidis, 2011; Devarajan, Swaroop, & Zou, 1996). Measuring the impact of public expenditure on economic growth allows us to evaluate the effectiveness of certain public expenditure strategies. More importantly, measuring the impact of public expenditure on different income groups can provide valuable information on the effectiveness of public expenditure to improve the living conditions of those in the bottom of the income distribution (that is, pro-poor public expenditure).

Studies that link aggregate public expenditure to economic growth, in general, have not yielded consistent results and have focused on developed economies. Some have found that aggregate public spending is associated negatively with economic growth (Folster & Henrekson, 2001; Landau, 1986; Levine & Renelt, 1992; Schaltegger & Torgler, 2006), while others have found the opposite (Bose et al., 2003; Ram, 1986; Sattar, 1993), or claim a neutral relationship (Kormendi & Meguire, 1985). A similar trend is found in studies testing the effects of particular components of public expenditure (public investment, education expenditure, defense expenditure, etc.) on economic growth. Again, some suggest that public sector consumption is negatively related with economic growth (Barro, 1991; Kneller, Bleaney, & Gemmell, 1999; Levine & Renelt, 1992), while others find the opposite (Devarajan et al., 1996). Even though many assume public investment to axiomatically have a positive impact on private productivity, some studies agree (Aschauer, 1989; Barro, 1991; Easterly & Rebelo, 1993; Kneller et al., 1999) while others find evidence to contradict this claim (Devarajan et al., 1996). Education indicators also yield conflicting results. Barro (1991), Mankiw, Romer, and Weil (1992), and Easterly and Rebelo (1993) all find a positive association between human capital investment and economic growth; in contrast, Islam (1995) and Caselli, Esquire, and Lefort (1996) use panel data to address endogeneity problems, and find a negative relationship between economic growth and measures of human capital. These contradictory results may be partly explained by scholars ignoring the impact of other economic policies which coincide with fiscal policy, differences in each study's set of explanatory variables (Levine & Renelt, 1992), or the omission of government budget constraints (Kneller et al., 1999).

Though the relationship between government expenditure and economic growth may be contested, most scholars contend that economic growth is a key factor in poverty reduction. However, the rate at which poverty falls with growth, and the extent to which different income groups benefit from economic growth remains an open question.

Some consensus exists regarding the power of economic growth to reduce poverty among developing countries (Dollar & Kraay, 2002, 2004), less agreement exists about the role of economic growth on other aspects of income distribution, in particular its effect on the welfare of the middle class (Chen & Ravallion, 1997; Deininger & Squire, 1996). Earlier studies have mainly focused on the effect of growth on the poor, but there are no empirical studies that systematically look at the effects of growth on the complete distribution of income. The need for fiscal policy as a complementary instrument to reduce inequality in a growing economy is, in general, not well understood.

Ravallion (2004) found that, depending on the initial level of inequality, a 1% increase in income levels could result in poverty reductions ranging from 0.6% (with high inequality) to 4.3% (with low inequality). Similarly, David Dollar and associates show that economic growth is good for the poor, meaning that the elasticity of the level of per capita income of the poor *vis-à-vis* the level of per capita GDP is about one or even higher; the incomes of the poor rise at the same rate as average incomes (Dollar, Kleineberg, & Kraay, 2016; Dollar & Kraay, 2002; Gallup, Radelet, & Warner, 1999). These results are an average for a large number of countries, from very poor to

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