LOCALIZED PUBLIC INVESTMENT AND AGRICULTURAL PERFORMANCE IN MALAWI: SYNOPSIS

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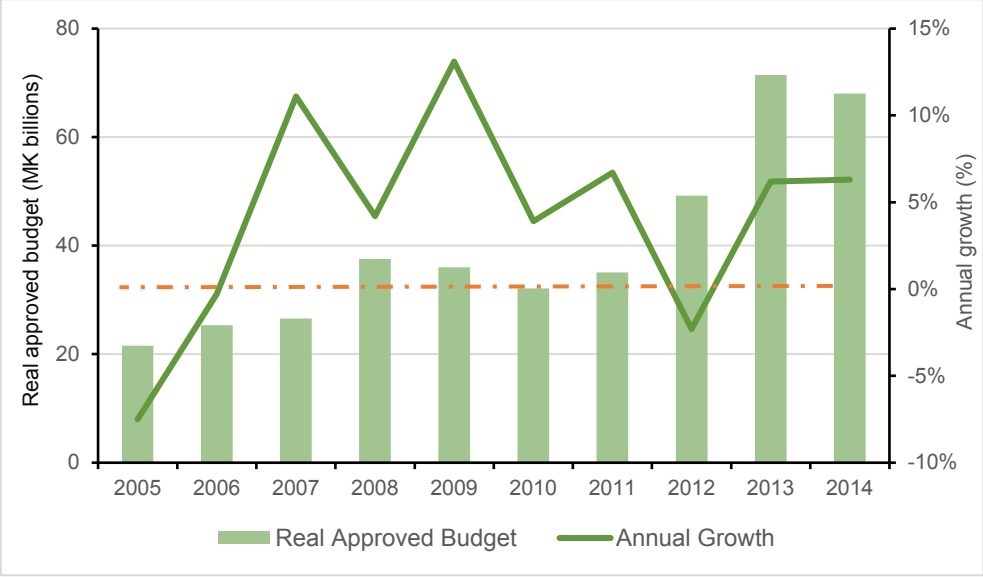
PUBLIC SPENDING AND MALAWI'S AGRICULTURE SECTOR

The contribution of public investment to agricultural productivity is well recognized as a key determinant of agricultural growth. The emerging focus on national commitments to the sector under the Comprehensive Africa Agriculture Development Program (CAADP) similarly reflects the importance of public investment in agriculture.

Malawi is one of the few countries on the continent that has surpassed the CAADP commitment of spending at least 10 percent of its national budget on agriculture. Malawi's total agriculture sector budget increased substantially between 2005 and 2014 (Figure 1), and accounted for an average 19 percent of the national budget between 2010 and 2013. However, although agriculture is the main driver of economic growth in the country, agricultural sector growth in this period averaged only 4.4 percent, significantly below the CAADP target of 6 percent. Agricultural sector growth has also been volatile, exceeding 10 percent per year in 2007 and 2009 but registering contractions in 2005 and 2012. Consequently, the country recorded low GDP growth of about 4.0 percent over the 2011-2014 period (GoM 2013).

This note focuses on how public investments affect crop productivity in Malawi's districts, and estimates localized public expenditure multipliers. We use these multipliers to analyze whether government expenditures have slowed or accelerated agriculture sector growth, a topic of great interest to public policy makers. Given the relatively large share of government expenditure in agriculture sector investment in Malawi, public expenditure policies may play an important role in agricultural productivity dynamics.

Figure 1—Agriculture budget and agriculture sector growth, Malawi, 2005–2014



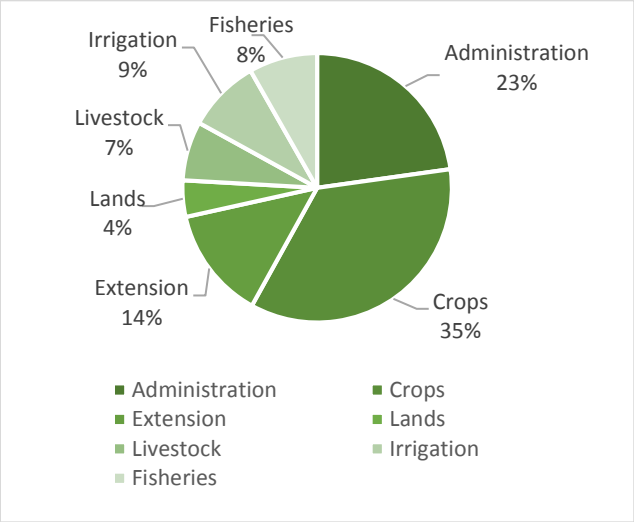
Source: Agriculture sector growth data obtained from National Accounts reports by NSO and Ministry of Finance and Economic Development. Real Approved Budget allocations data obtained from Ministry of Finance Budget documents and deflated using CPI (at 2009 prices) from World Development Indicators database of the World Bank.

Malawi's agriculture development budget contains substantial recurrent expenditures, such as salaries (World Bank 2013). From 2007/08 to 2011/12, non-capital elements in the agriculture development budget accounted for about 63 percent of actual expenditures (4 percent for salaries and 59 percent for other recurrent expenditures), leaving 37 percent of the development budget for actual capital expenditures. As a result, actual capital expenditures by the Ministry of Agriculture rarely exceeded 5 percent of actual expenditures. This low capital expenditure accounts for much of the poor agricultural growth

over this period. In addition, budget execution rates in the Ministry were low, particularly for the development budget. Total spending by local governments also remained relatively low, in absolute terms and as a share of total public spending. Although the Local Government Act mandates that 5 percent of government discretionary spending should be directed through local councils, local governments received only 3.9 percent of the total 2013/14 budget (O'Neil and Cammack 2014). And of the US$4.35 million of budgeted allocations for agriculture to all districts for the period 2012/13 to 2014/15, US$3.84 million was spent (an 88.3 percent utilization rate).

While public spending is important in driving agriculture sector growth, allocative efficiency is equally important. Allocative efficiency is reflected by the quality as well as prioritization of spending across various agricultural subsectors (Figure 2). Between 2012/13 and 2014/15, the largest allocation was to crops (35 percent). Administration costs drew the second highest share (23 percent), indicating that a large share of resources was spent on non-investment recurrent activities at the expense of development investments. This reflects a misalignment between sector policies and budgeting: important subsectors such as extension and livestock development receive relatively little funding, despite being key drivers of sector growth.

Figure 2— Districts' share of budget allocations to agriculture subsectors, 2012/13 to 2014/15



Source: Computed from data obtained from National Local Government Finance Committee.

METHODOLOGY AND DATA

We estimate the impact of public agriculture expenditure on agricultural productivity with a reduced form production function using panel data for 26 of Malawi's districts between 2005 to 2014. Malawi has 28 districts, but the study leaves out Likoma and Neno Districts because of inconsistencies noted in their data.

In the first part of the analysis, agricultural productivity—the average yield of all crops for the district in a given year—is modeled as a function of: public agriculture expenditure per hectare of cropped area in the district; rainfall; average fertilizer use per hectare planted to crops; and the number of farm households per hectare of cropped area. District fixed effects are used to control for factors such as geography, district bylaws, culture, and the demographic structure of each district that do not change over time but vary across districts. Year-specific fixed effects control for changes in the economy that affect all districts at the same time (such as monetary and fiscal policies. The second part of the analysis computes public expenditure multipliers that measure the change in agricultural productivity resulting from a change in government spending on agriculture. The overall impact of public agriculture expenditure on agricultural productivity is expected to be positive because it is an injection in the economy. The impact's magnitude and direction depend on how much the government contributes to increased productivity by providing public goods and infrastructure for social services and targeted interventions. Empirical evidence shows that the direction of the relationship can be positive, negative, or constant: so the public spending multipliers can be positive, close to zero, or, in some instances, negative (Mapfumo, Mushunje, and Chidoko 2012; Bose and Bhanumurthy 2013). A public spending multiplier greater than one indicates that public expenditure stimulates economic activities (agriculture activity) and produces a final increase in agriculture productivity larger than the initial increase in public spending. A multiplier of less than one means that the initial increase in aggregate demand is eroded by effects that counteract the initial increase in public spending. These counteracting effects are often due to the crowding-out of productive private sector activities. Spending multipliers can be small (and even negative) due to fiscal inefficiencies (such as government failure to manage public expenditures because of fraud or poor planning), which limit the impact of fiscal policy on productivity (Batini, Eyrand, and Weber 2014).

FINDINGS

We find that increasing the level of government expenditure across Malawi's districts increases agricultural productivity, all else equal. The results also suggest that agricultural growth is driven by rainfall. However, the effect of fertilizer is not significant, perhaps partly due to Farm Input Subsidy Program (FISP) implementation factors and how FISP fertilizer was distributed among farmers. Results from splitting total expenditures by district into recurrent and development expenditures find that development expenditures contribute more than recurrent expenditures to agricultural productivity growth in the districts.

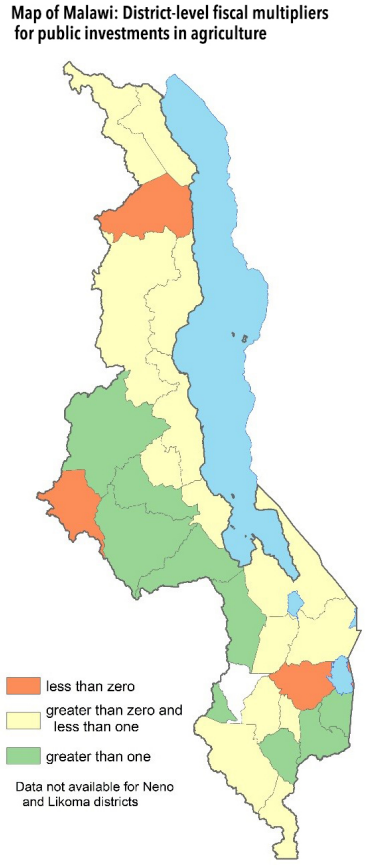
Most of the estimated fiscal multipliers are positive, but fall below one (Table 2). This means that increasing agriculture expenditures increases agricultural productivity, but the increase is relatively small. Low fiscal multipliers imply that government spending crowds out private investment and consumption that would have taken place without government spending.

Low multipliers can also reflect openness to trade. It is believed that in open districts, part of the increase in investment will be associated with increased trade rather than increased production (Ilzetzki, Mendoza, and Vegh 2012). Thus, all other things constant, trade among districts or with other countries will lead to smaller multipliers. For instance, Mzimba District's multiplier is very low, in part because Mzimba farmers' agricultural produce is traded with other districts in Malawi and with Zambia.

Table 2—Fiscal multipliers by district

District	Elasticity	Multiplier
Chitipa	0.018	0.085
Karonga	0.083	0.379
Rumphi	-0.040	-0.062
Mzimba	0.025	0.096
Nkhata Bay	0.006	0.071
Kasungu	0.240	1.366
Mchinji	-0.152	-2.347
Dowa	0.240	2.264
Ntchisi	0.132	0.712
Lilongwe	0.422	2.051
Dedza	0.194	1.484
Ntcheu	0.256	3.409
Nkhotakota	0.075	0.469
Salima	0.119	0.169
Balaka	0.186	0.312
Machinga	0.100	0.446
Mangochi	0.162	0.751
Zomba	-0.084	-0.793
Blantyre	0.134	0.845
Thyolo	0.276	2.609
Chiradzulu	0.077	0.401
Phalombe	0.289	2.803
Mulanje	0.267	4.443
Mwanza	0.254	2.073
Chikwawa	0.089	0.268
Nsanje	0.187	0.387

Source: Author's analysis.



Fiscal multipliers are greater than one in most parts of the central region (Kasungu, Dowa, Lilongwe, Dedza, and Ntcheu Districts) and some parts of the southern region (Thyolo, Phalombe, Mulanje, and Mwanza Districts), where production is relatively high. When public spending multipliers are greater than one, the private components of agricultural productivity rise at a greater rate than government spending on agriculture.

Rumphi, Mchinji, and Zomba Districts have negative fiscal multipliers. An inverse relationship exists between the average percent changes between productivity and agriculture expenditure in two of these districts (Rumphi and Mchinji), while the relationship in Zomba is only slightly positive. Conversely, significant positive relationships exist between agricultural productivity and public agricultural expenditure in the districts with high positive fiscal multipliers.

Negative fiscal impacts can occur when public finances are in bad shape and the expenditures made are of weak quality (Bose and Bhanumurthy 2013). Expenditure allocations to Malawi's agriculture sector are mainly at central level—only about 5 percent is allocated to districts (World Bank 2013). Hence, the impact of district-level public investments would generally be small. Malawi's district councils tend to overspend their budgets (EU 2015), reflecting weak public financial management controls, and most of the districts identified as having weak financial management systems are those found to have low fiscal multipliers.

DISCUSSION AND POLICY RECOMENDATIONS

Public policy plays a vital role in supporting the agricultural growth required to meet Malawi's strategic commitments, including those under CAADP and the global Sustainable Development Goals. And Malawi's public sector plays a dominant role in providing the agricultural services necessary to enhance agricultural productivity and to foster food security. In most years,

decisions by the government for investment in the agriculture sector are crucial in improving the livelihoods of most Malawians.

This note investigates the impact of government expenditure on agricultural growth in Malawi from 2005 to 2014. The results indicate that agriculture expenditures have had a variable but generally positive impact on agricultural growth in Malawi. The fiscal multipliers estimated for the districts generally are less than one. For three districts, they are negative. Individual district characteristics explain a substantial part of the within-country variation in agricultural productivity. However, the impact vanishes when year effects are accounted for. These results confirm that increasing public expenditures in agriculture can yield modest but positive impacts on agricultural productivity.

Improving the impacts of public spending depends at least in part on enhancing both the quality of public spending and the health of public finances in Malawi's districts. A few policy recommendations can be made:

Budgetary allocations to agriculture at the district level should be increased, as evidence indicates that government expenditures can influence agricultural growth. However, the increased allocations should be buttressed by significant improvement in expenditure management to improve district-level expenditure efficiency.

Fiscal impact at the district level is driven more by development expenditures than by recurrent expenditures. Hence, greater investments should be made in the districts through the development budget, again supported by significant improvement in expenditure management.

Further studies are required to inform policy makers on the likely impact of expenditures on specific agricultural products (such as crops, livestock, and fisheries) and on specific agricultural subsectors (such as extension, irrigation, seeds, and research). Such studies would help in prioritizing expenditure allocations and in identifying districts that may produce particular products profitably.

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