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Public expenditure for water facility and road transport infrastructure in Ethiopia: A comparison of impacts using an economy-wide model

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Abstract

Ethiopian government is investing in a wide range of pro-poor sectors but the economic effects of public investment widely vary across sectors. With a limited public resource, public investment across sectors has to be prioritised based on their potential socio-economic contributions and/or economy-wide benefits. Therefore, the objective of this study is to compare and explore the economy-wide returns of public expenditure on water facility and energy technology (such as improved cooking stoves) on the one hand and public expenditure on road infrastructure on the other hand. The source of data for this study is the 2005/06 updated Social Accounting Matrix (SAM) of Ethiopia. The analysis applies the STAGE Computable General Equilibrium (CGE) model developed by McDonald (2007).

This study analyses two policy scenarios; the first scenario is an increase in the total factor productivity (TFP) of water fetching and firewood collection activities due to public investment in water facility and improved cooking stoves and the second scenario is a decrease in the trade and transport margins due to public investment in road transport infrastructure. For ensuring the comparability of the return of public expenditure, the same amount of public capital is invested in both scenarios. The simulation outcome indicates that public investment in water facility and improved stoves results relatively higher domestic production in most sectors, larger household consumption, improved household welfare and improve in the major macroeconomic indicators (GDP, absorption, private consumption, and total domestic production) as compared to public investment in road transport infrastructure. Therefore, it is helpful to explore the potential economic contribution of public expenditure across the different pro-poor sectors before launching public investment in any specific sector. This will ensure limited public budgets are appropriately invested in the sector that can bring relatively highest economic-wide benefits to the wider society.

Keywords: CGE model, Ethiopia, firewood collection, public expenditure, road transport infrastructure, water fetching