

Heterogeneity, Measurement, and Misallocation in African Agriculture

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ABSTRACT

Empirical analysis of farm-level data from African agriculture consistently shows enormous dispersion in measured total factor productivity (TFP) at the farm level. Some farmers achieve relatively high levels of TFP, but many farms appear to operate at very low levels of measured TFP. One possible explanation for this is that some farmers have low levels of skill but continue nevertheless to farm because of market failures or distortions that make it difficult for them to be bought out by more skillful farmers. Previous research has suggested that this kind of misallocation may be an important source of differences in agricultural productivity across countries – and thus an important explanation for cross-country differences in per capita income. This paper notes that misallocation can be difficult to distinguish empirically from a range of measurement errors, classical and non-classical. It can also be difficult to measure productivity well in a highly volatile production environment. Finally, differences in farmer quality can be observationally similar to heterogeneity in unobserved land quality. Our paper presents a theoretical framework and empirical results that seek to advance our understanding of the distinctions between heterogeneity, measurement error, and misallocation in African agriculture, using data from three African countries. Preliminary results suggest that both measurement error and unobserved heterogeneity in land quality can account for a large amount of the measured differences in farm productivity, and these results also imply that misallocation may have a relatively modest impact on output.