IMPACT OF CREDIT CONSTRAINTS AND CLIMATE VARIABILITY ON AGRICULTURAL PRODUCTIVITY: PANEL DATA EVIDENCE FROM RURAL ETHIOPIA

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Abstract

Increasing agricultural productivity is a major step in transforming the rural economy and ensuring food security. This paper uses a unique household level panel data linked with a spatial climate data to examine the impact of different credit constraint conditions on agricultural productivity under changing climatic conditions. A propensity score matching (PSM) method was employed to provide unbiased estimates of the production impacts of credit constraints on crop productivity. After controlling for potential selection bias, it is found that relaxing credit constraints increases agricultural productivity by Ethiopian Birr 169 per hectare, while the real crop revenue for discouraged and quantity constrained farmers has declined by Ethiopian Birr 443 and 275 per hectare, in that order. These results suggest that relaxing credit constraints by improving performance of the rural credit market could significantly increase agricultural productivity in rural Ethiopia.

Key words: Credit constraints, agricultural productivity, PSM, public policy, Ethiopia.

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An Assessment of Vulnerability to Drought from spatial perspective
Using Rainfall and NDVI: A Case Study from Selected Regional States,
Ethiopia
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Abstract

The aim of this paper is to assess the degree of vulnerability of households to the vagaries of drought in a spatially explicit manner using the Normalized Difference Vegetation Index (NDVI), Precipitation, and Land use/Land cover. The analysis is done using data from four regions in Ethiopia: the Amhara and Oromiya regions as representatives of agricultural households, and the Afar and BenishangulGumuz regions as representatives of the pastoral and agro-pastoral regions. The Methodological approach follows a spatial analysis of the degree of vulnerability of households to climate change using GIS and remote sensing techniques. The results indicate that NDVI of the cropping seasons (or the long and short rain seasons); the Coefficient of Variation (CoV) of the NDVI and the low frequency NDVI values all show significant variations both spatially and temporally. Further, there is a clear correlation between socioeconomic characteristics and the vulnerability parameters, indicating that vulnerability is conditioned not only by biophysical features but also by socioeconomic characteristics.

Keywords:
Drought; vulnerability, Rainfall, spatial analysis, NDVI

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