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Assessing the long-term performance of large-scale land transfers: Challenges and opportunities in Malawi's estate sector

Klaus Deininger [a], Fang Xia [b,*]

[a] World Bank, 1818 H Street, NW Washington, DC 20433, USA
[b] Research Institute for Global Value Chains, University of International Business and Economics, No. 10 Huixin Dongjie, Chaoyang District, Beijing 100029, China

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ABSTRACT

We use data from the complete computerization of agricultural leases in Malawi, a georeferenced farm survey, and satellite imagery to document challenges and opportunities of land-based investment in novel ways. Covering some 1.35 million hectares or about 25% of the country's arable area, agricultural estates are an important part of Malawi's rural economy. However, the analysis shows that 70% of these estates have expired leases, reducing government revenue from ground rent by up to US$35 million or 5% of the total public spending annually. The low quality of spatial records, as indicated by the fact that some 140,000 hectares under estates are subject to overlapping claims could preclude the land market participation, especially under longer-term contracts. Data from a 2006/07 survey suggest that estates' yield, productivity, and intensity of land use are below those of small farms. While the recently passed land laws create a basis for low-cost systematic demarcation and registration of rights to customary land, our analysis suggests that, to maximize their likely contribution to increasing productivity and welfare rather than conflict, such efforts need to be preceded by a clarification of boundaries and lease status of existing estates and ideally a more detailed study of the reasons underpinning the low productivity.

1. Introduction

Ever since the 2007/08 commodity price boom, transfers of large tracts of land for agricultural production have been a key issue in policy debates on African agriculture (Collier & Dercon, 2014; Cotula, 2014; Deininger & Byerlee, 2011). However, while there has been enormous interest in the size (Dell'Angelo, D'Odorico, Rulli, & Marchand, 2017; Holmen, 2015), causes (Arezki, Deininger, & Selod, 2015), and the aggregate impact (Davis, D'Odorico, & Rulli, 2014) of such transfers, actionable assessment of the extent to which transferred land is being used, the efficiency of such use, and the potential impacts on neighboring smallholders has been limited. Evidence regarding these would be important for governments to manage public land transfers in ways that can reduce risks and maximize positive socio-economic impacts. The experience from Latin America shows the advantages of combining administrative with remotely sensed data for real-time monitoring for the public (Assuncao, Gandour, & Rocha, 2015) and the private sector (Gibbs et al., 2016), but the use of such methods in Africa is still in its infancy (Lemoine & Rembold, 2016).

In Malawi, large areas were transferred to agricultural estates in the 1980s and early 1990s (Mandondo & German, 2015). As a result, some 1.35 million hectares (ha) or about 25% of the country's arable area are currently under such estates. However, their contribution to public revenue is negligible, as 70% of agricultural estate leases have expired and the failure to index the "ground rent" that was supposed to be paid to the Government for using the land has reduced the revenue even for non-expired leases. The associated losses are large: charging half the market price for land rental would increase the public revenue by US$35 million or 5% of the total public spending every year. We also find that investment and productivity in the estate sector remain low. In addition, smallholders fail to benefit from either technology- or market-driven spillovers from estates. Thus, an estate sector that was intended to provide the engine for a higher level of agricultural productivity may instead become an obstacle to progress.

Although land registries contain a wealth of information, the low quality and the lack of maintenance of registry information may lead to a considerable divergence between the ground reality and what is reflected in the official records: 28% of agricultural estates have at least 20% of their area overlapping with another

* Corresponding author.
E-mail addresses: kdeininger@worldbank.org (K. Deininger), xiafang@uibe.edu.cn (F. Xia).

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estate, an issue that affects a total of 137,064 ha; and less than 5% of estates have a remaining lease term of more than 10 years and thus a time horizon long enough to make longer-term investments. While the quality of formal records is unlikely to be relevant if the ownership is recognized locally and the cultivators are present, the scope for (long-term) land transfers could be negatively affected if concerns about undisclosed prior claims or erroneous records of plot location and boundaries affect lessors' perceived ability to reclaim land after the lease period expires or lessees' perceived security against disputes. Data from the survey suggest that, for all the crops except cassava, smallholders' yields are above those of estates, pointing towards a negative relationship between farm size and productivity. This suggests that, contrary to what was expected when establishing them, estates fail to act as a motor for the rural economy and a source of positive spillovers for neighboring smallholders.

Our findings are relevant to policy because in late 2016, after a protracted debate, Malawi passed a series of Land Bills that aim to increase the security of customary land users' rights and overcome the dualism of the country's post-independence tenure system. A key part of Land Bills is the scope for registering customary land under so-called "customary estates". A sporadic approach that fails to first clarify the boundaries of land currently under estates; the status of the rights to such land; and the ultimate owner of unutilized estate land (i.e. if such land reverts to traditional rulers or the government) may unintentionally increase tenure insecurity, conflict, and inequality. A systematic process that is low-cost and participatory can encourage investment and the effectiveness of land use (Fenske, 2011; Lawry et al., 2016), empower women (Ali, Collin, et al., 2016; Newman, Tarp, & van den Broeck, 2015), and improve the scope for lease markets to transfer land to more efficient operators (Ali, Deininger, Goldstein, & La Ferrara, 2014).

The paper is organized as follows. Section two situates the paper in the debate on large-scale agricultural investment by highlighting the challenge of assessing productive efficiency of large agricultural enterprises and provides the background on the evolution of Malawi's estate sector. Section three discusses the administrative and remotely sensed data sources, using them to quantify the evolution of Malawi's agricultural estates, to identify the challenges to the quality of the textual and spatial land records, and to draw out implications in terms of public revenue and the intensity of land use. Section four compares productivity between smallholders and estates and explores the extent to which the presence of estates is correlated with the performance of nearby small farmers, which could point to technology or market access-mediated spillovers. Section five concludes with implications for policy and research.

2. Background and justification

A key obstacle to a more evidence-based and rational debate on large land-based investment has been the difficulty of obtaining systematic data to document large land transfers and measure farms' performance. We describe that the absence of such information has made large farm transfers a politically contested issue in Malawi. A policy to establish estates as a driver of rural change was adopted in the 1980s but soon stopped. After a protracted policy debate since then, the country passed a series of Land Bills in late 2016.

2.1. The challenge of assessing large farm performance

Almost a decade after concerns about large-scale agricultural investment first appeared in the literature, there seems to be an agreement that, beyond any direct benefits, for example in terms of lease fees, the transfer of land to investors has the potential to generate positive indirect effects (Collier & Venables, 2012). Such effects may be realized by "pioneer investors" helping with the discovery of agro-ecological suitability and the provision of access to technology and markets for credit, input, labor, and output for local smallholders. The desire to harness such effects has led to the formation of agricultural investment promotion agencies all over the world.

In African countries with often large land areas, not all of which are deemed to be fully utilized,[1] low quality and weak maintenance of records (that were mostly kept on paper), limited technical capacity, and a lack of transparency have frequently limited the potential benefits from land transfers to large farms (Deininger & Byerlee, 2011). A key reason has been that uncoordinated or poorly vetted land deals promoted speculators and urban elites (Jayne et al., 2016; Sitko & Jayne, 2014) rather than pioneers. The high risk of such investments (Tyler & Dixie, 2013) then often led to a danger of unsuccessful investors trying to use political channels to increase their profits, for example by trying to keep labor costs down or constrain access to capital, with potentially unfavorable long-term consequences.[2]

Although many studies assess the impact of such investments in specific cases, the extent to which these are representative of the sector at large is difficult to ascertain. Addressing this issue would mean dealing with two issues. First, data on the universe of land transfers is needed to avoid the results being due to sample or case selection.[3] Second, to be able to assess how policies affect outcomes, time series information is desirable. Traditionally this has come from censuses or sample surveys. Linking georeferenced surveys to digital administrative data opens new possibilities for analysis. In addition, the routine availability of satellite imagery has produced new avenues for analysis (Donaldson & Storeygard, 2016). Machine learning algorithms using medium-scale imagery at the rather high frequency that is now available freely on cloud-based platforms have been shown to generate information on land use and potentially even the crop type or yield at the field level as long as the fields are of a minimum size (Lobell, Thau, Seifert, Engle, & Little, 2015). Combining such data with administrative records could help to address many of the issues that have traditionally impeded the routine monitoring of large investments' performance. We use the case of Malawi to illustrate how this could be achieved in practice.

Malawi is of interest due to the scale of large farm investment and the length of time for which these farms have been in operation. Some 20–25% of the country's land was leased to commercial farms in the late 1980s to help to commercialize the sector and partly to overcome the shortcomings in the regulatory regimes for customary tenure. The time elapsed since then allows us to discern the longer-term performance and identify challenges not yet apparent in cases where land transfers happened more recently.

Bringing together administrative data with those from other sources allows us to contribute methodologically to describing

[1] Most of the land available for expansion in Africa is concentrated in a few countries (Deininger & Byerlee, 2012), with poor access to infrastructure, low levels of profitability (Chamberlin, Jayne, & Headey, 2014), and often weak governance (Arezki et al., 2015).

[2] The importance of this issue is demonstrated by the many historical examples in which the accumulation of large tracts of land by large but relatively inefficient farms led to rent-seeking behavior and, through locally dominant positions, resulted in the monopolization of input or output markets (Binswanger, Deininger, & Feder, 1995), a failure to provide public goods, such as education (Nugent & Robinson, 2010; Vollrath, 2009), the undermining of financial sector development (Rajan & Ramcharan, 2011), or the restriction of political participation (Baland & Robinson, 2008).

[3] If only one agency can transfer land and the records are good, a complete transaction record is sufficient. If multiple agencies are involved, a field-based sample frame, ideally constructed and maintained by the national statistical agency, is needed. Ali, Deininger, and Harris (2017) illustrate this for Ethiopia.