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Land tenure and investment incentives: Evidence from West Africa ☆

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A B S T R A C T

The existing literature on the relationship between property rights in land and agricultural investment in Africa has given results that are often confusing and contradictory. I make two clarifying contributions to this literature. First, I pull together existing studies and investigate whether the results they find have been affected by research methods or local contexts. Studies with small sample sizes, those that use binary investment measures, and those that control for household fixed effects are less likely to find a statistically significant link between land tenure and investment. Self-reported tenure security has been a poor predictor of investment outcomes. Second, I test for a relationship between land tenure and agricultural investment in nine data sets from West Africa. While the link between tenure and investment is significant for fallow and tree planting, it is less robust for labor use and other inputs, such as manure or chemical fertilizer.

1. Introduction

On April 15, 1953, Dibia Afam, a farmer from Ogbeowele in the Benin Province of Colonial Nigeria, sent a letter to the Resident.[1] He was writing to ask for an appeal against the decision of the District Officer in a land dispute. In 1939, he had begun a plantation of palm and rubber trees on land he had acquired without payment. This in itself was not unusual — he wrote in his letter that "[w]e live on communal land and right from the time of our ancestors we do not pay neither do we buy land." He had extended his plantation each of the next three years, but when he made a further extension in 1949, his relatives began to trouble him, asking him to pay £1 annually for the use of the land. Considering that he already paid income tax, Afam believed it would be unjust that he should pay money to his "fellow brothers when [he was] a free born of that family."

Ochaloa, who sued Afam in the District Officer's court as representative of the Ogbeowele people, saw things differently. He believed that the area where Afam had made his plantation was owned by the community, and was to be used by all for gathering firewood, palm nuts, and other produce. His witness, Michael Oshu, stated the fears of the community — Afam already had a farm four times as large as that of a normal person, and if the remaining Ogbeowele people wished to receive similar shares of bush, there would not be enough to accommodate them. Afam found this reasoning objectionable, and asked Oshu "[if] a man plants seeds will he not have another place for farm?" Over his protests, the District Officer had ordered an inspection of the land, after which he instructed Afam to uproot the trees he planted in 1949, noting that permanent crops could not be planted without the consent of the community.

The Resident agreed with Afam that he should not have to pay for land he had used for fifteen years, but believed he should pay for any recent extensions he had made. He set aside the District Officer's judgment and referred the case back to the Native Court for further inspection. Afam, believing this was like "returning a helpless soldier to his enemies," objected. The patience of the colonial officials, however, had begun to wear thin — Afam had already been ordered three times to reach an amicable settlement with the other members of his family and, in the views of the District Officer, it was "a family matter which should have been settled out of court." Afam was informed he could appeal to the Lieutenant-Governor, but if he did I have found no record of it. Afam made a fixed investment on land over which his rights were neither secure nor exclusive. He expended resources defending his claims, but saw the contrary interests of his relatives strengthened against him in the formal arena and suffered a partial loss of his investment as a result. Fundamental to his case is a tension between land tenure and investment incentives.

The recognition that secure property rights encourage greater investment is not a new one; Goldstein and Udry (2008) point out

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[1] The following details are taken from correspondence in the file Ben Prof 1 BP 203/706, "Dibia Afam, petition from," which is housed in the Nigerian National Archives at Ibadan.

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that Adam Smith recognized how English tenants, who could be compensated for improvements in the event of eviction, were more willing than their continental counterparts to invest in their farms. Following on this logic, anthropologists, legal scholars and economists argued during the 1960s and 1970s that "communal" African tenures were inefficient, and the development of individual tenures should be encouraged (Ault and Rutman, 1979; Johnson, 1972; Uchendu, 1967). The World Bank supported land titling as a matter of official policy in order to support modernization through the adoption of new technologies (Stamm, 2004).

This consensus was re-examined after 1980, in part because it was recognized that there was a "shortage of rigorous quantitative research that would help to assess the costs and benefits of a policy change" (Feder and Noronha, 1987). Throughout the 1990s, the World Bank's thinking on land policy grew more contradictory; while certain reports continued to support the earlier aims of land titling and the promotion of freehold tenure, others began to recognize that indigenous systems were capable of the "efficiency and dynamism" needed to provide sufficient investment incentives (Stamm, 2004). Critical to this change in perspective was the emergence of a quantitative literature that found the evidence on the land-tenure–investment relationship to be mixed. Bruce and Migot-Adholla (1994), in a volume that contained many of the early studies, argued that African tenures are capable of spontaneous evolution towards individualization and that titles did not necessarily imply tenure security. This cast doubt on the need for intrusive registration programs. The recognition that land rights might be endogenously determined by investment has cast further doubt on causal inferences made from studies that find the two are correlated (Besley, 1995; Brasselle et al., 2002). In a recent survey of this literature, Place (2009) has concluded that:

> [S]tronger land rights and presence of land title are often associated with an increased likelihood of investment for certain types of investment, e.g. tree planting, fencing, and manuring. But these are far from universal and there are often divergent effects on different types of investments within the same site. Moreover, some of the results themselves, though statistically significant, would hardly qualify as important because of very low marginal impacts...These results can seem utterly confounding and perhaps in some ways they are...Although the tendency in literature review sections of papers has been to lump all types of investments together, there has been more probing into differences in some recent papers. Hence, the distinction between short-term (e.g. fertilizer) and long-term (e.g. conservation terraces) investments, between visible and non-visible investments, productive and security-enhancing investment (e.g. fencing and trees).

I make two contributions to this literature. First, I aggregate the results of several existing studies, and subject them to a systematic analysis. Although there are strong theoretical reasons why more complete land rights are expected to enhance investment, empirically this link has been found to be weak. Several reasons have already been identified for this, including adequate incentives in African tenure systems, thin credit markets, endogenous tenure, the particular failures of titling programs, and empirical difficulties. I find that, methodologically, small sample sizes, binary dependent variables, and unobserved heterogeneity have had strong effects on the results found. Further, the relationship is more robust for certain investments, such as fallow, than others such as land improvement. Perceived insecurity has been a poor predictor of investment outcomes.

Second, I use multiple data sets from West Africa in order to investigate in what contexts the relationship between tenure security and investment incentives holds in this region. The results here are generally consistent with those in the existing literature. I find that land tenure affects incentives to leave land fallow and to plant trees, but has a weaker impact on labor and input use. These results are not always intuitive; tree planting, for example, is *more* likely on sharecropped plots in Ghana.

The remainder of this paper proceeds as follows. In Section 2, I systematically review the empirical literature on land tenure and investment incentives in Africa, and identify the major hypotheses that have been made arguing for a link between tenure security and investment. I also discuss the theoretical, contextual and methodological explanations that have been advanced for why many studies have failed to find such a link in practice. I then test the degree to which these concerns have in fact shaped results in the literature by performing a meta-analysis on 54 studies that have used regression analysis to test for a link between land rights and investment using African data. In Section 3, I lay out a theoretical framework that describes the link between investment and tenure security when land rights themselves are endogenous. In Section 4, I describe the nine data sets that are used in this study, and outline the statistical methods that are applied to each. In Section 5, I perform the econometric analysis and detail the results. In Section 6, I conclude.

2. Literature review

Studies that have examined the link between land rights and investment in Africa have done so with solid theoretical reasons why we should expect this relationship to exist, but have found uneven results in practice. In this section, I outline the principal explanations offered for these hypotheses and for their empirical failings. For each of these, I identify whether they have particular relevance to West Africa. To justify the continent-wide focus, I summarize land legislation, agrarian investments, and sources of tenure insecurity in six countries and show that there are many common themes. Finally, I provide a meta-analysis that demonstrates how these potential channels, such as the use of binary investment data and small samples have had important effects on the observed outcomes.

2.1. Why land rights should promote investment

There are four key reasons why more complete rights over land should encourage investment, all of which have been identified by Besley, 1995 and elaborated on by later writers: land rights strengthen claims to the fruits of investment, increase access to capital, allow for gains from trade, and provide the cultivator with freedom to innovate. The first three of these are referred to as the "assurance," "collateralizability," and "realizability" effects by Brasselle et al. (2002).[2]

2.1.1. Land rights strengthen claims to the fruits of investment

The incentive to invest is enhanced when the investor is convinced he will receive a greater share of the ultimate returns to the investment. There are two straightforward interpretations of this effect (Besley, 1995). First, secure tenure reduces the threat that the investment will be appropriated in the future, before all of its benefits are reaped. Second, a cultivator such as a sharecropper or a member of a lineage with reciprocal obligations may not have exclusive claims over the output from a plot; even though he does not face uncertainty, he is still induced to under-invest. This effect does not necessarily only apply to the poor or weak — landowners may seek title to their plots in order to prevent expropriation by their tenants (Jacoby and Minten, 2007).

[2] This is congruent with the alternative approach of writers such as Place and Swallow (2000), who focus on exclusivity, security, and transferability as the key dimensions of property rights.