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Land Tenure, Fixed Investment, and Farm Productivity: Evidence from Zambia's Southern Province

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Summary. — Using original data from an area of Zambia with contrasting tenure regimes (state and customary), the hypotheses are tested whether farmers with leases or titles have superior fixed investment and productivity to those without documentation. Results indicate that documentation is indeed associated with greater fixed investment independently of an array of control variables. Productivity also improves with documentation, via cotton planting, cattle ownership, and fixed investment *inter alia*. Undocumented farms on state land performed similarly to those on customary land. These results provide somewhat stronger support than previous studies for the association of tenure security with farm performance in sub-Saharan Africa.

Key words — land tenure, productivity, investment, sub-Saharan Africa, titles, Zambia

1. INTRODUCTION

Land issues are as prominent as ever in sub-Saharan Africa (SSA), with re-distributional travails in some countries alongside post-socialist tenure reforms in others. But land tenure reform, specifically the replacement of customary with statutory tenure, is no longer seen as a magic bullet for rural development and increased agricultural productivity. Major empirical studies in the 1990s failed to confirm an economic model that predicts increased productivity from increased security via greater demand for fixed investments, greater credit supply and demand, and transfer of land to more efficient users. They have mainly found that even where tenure security associates with increased fixed investments, the latter do not generally cause increased productivity in turn. These findings consternate those who espouse property-rights models of economic growth through privatization, as well as agnostics who had hoped that tenure reform could be a badly-needed offensive weapon against ongoing rural poverty in SSA. More recent studies however have disaggregated "tenure" to illuminate how its discrete components affect incentives and opportunities in the actual context of SSA farming methods, institutions, and preferences. These suggest ways to identify, detect and measure the effects of tenure security and insecurity, and to link these to productivity and other outcomes relevant to poverty reduction. This paper contributes to the debate with findings from Zambia on farming performance under contrasting tenure regimes.

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2. BACKGROUND

(a) *The land tenure debate*

The taut economic logic that predicted productivity gains from increased tenure security for farmers had empirical support in studies outside SSA (e.g., Thailand, in Feder, Onchan, Chalamwong, & Hongladarom, 1988). But the failure of land tenure reform in SSA to dynamize smallholder agriculture became evident in the early 1990s with a series of empirical studies (including Migot-Adholla, Hazell, Blarel, & Place, 1991 and Place & Hazell, 1993, as well as others collected in Bruce & Migot-Adholla, 1994) that demonstrated that the economic effects were not being activated. The effects of tenure security on fixed investment were found to be mixed, for example with no significant effects in Somalia (Roth, Unruh, & Barrows, 1994b) and Senegal (Golan, 1994), but positive effects in Uganda (Roth, Cochrane, & Kisamba-Mugerwa, 1994a) and Rwanda (Blarel, 1994) on certain types of investment. Even in those latter cases, however, the investment mostly did not associate in turn with greater productivity. In Kenya, titled farms had higher net returns per hectare, but "…when the effects of size and market access are separated out, it becomes clear that it is these factors, rather than title, that are responsible for the correlation" (Bruce, Migot-Adholla, & Atherton, 1994, pp. 258–259). In Zambia, some agricultural development indicators (credit, oxen use, land improvements, and tree planting, mostly measured in binary terms) were found to be negatively related to matrilineal acquisition, little related to perceived land alienation rights, and positively related to perceived self-ownership; other important determinants included wealth and (as in Kenya) farm size (Place, Chinene, Hansungule, & Maimbo, 1995). Away from though probably relevant to SSA, Carter & Olinto (2003) show in data from Paraguay that although tenure security increases investment, smaller farms substitute fixed for movable investment as security increases, with no net gain; only on mid-sized and large farms does tenure security cause greater net investment. The small farms also enjoy no credit supply effect of tenure security (which stands to reason, considering that a lender would have little interest in repossessing a tiny rural parcel).

Why such a poor showing for the economic effects of tenure? Concurrent theoretical and deductive work (Berry, 1993; Binswanger, Deininger, & Feder, 1993; Place & Migot-Adholla, 1998; Platteau, 1996, 2000; Shipton & Goheen, 1992, among others summarized in Smith, 2003) offered possible explanations: (i) historical underestimation of the security and individuality of customary tenure; (ii) states' inability to create, or transparently and efficiently enforce, the attributes of titles (such as unlimited transfer rights) that were necessary to activate the economic logic; (iii) low credit use stemming from risk aversion to mortgaging on the part of farmers dependent on rainfed agriculture, and of lenders dependent on enforcement of foreclosure; (iv) limited availability of fixed-investment technologies that are accessible and advantageous to the small farmer relative to nonfixed (and therefore safer) means of boosting production such as fertilizer or livestock; and (v) power relations distorting economic processes. Equity considerations, a "safety-first" (Platteau, 1992, p. 26) priority of avoiding land loss in lieu of social insurance, and low quality of state administration relative to its local, customary alternative are all likely to dampen demand for state-provided institutional innovations such as titles. (In Kenya, titles were found to be sought defensively to enhance tenure security, not to lay the groundwork for boosting production (Place & Migot-Adholla, 1998).) Even if titling occurs and stimulates a credit demand response despite risk aversion, it may still fail to stimulate a credit supply response if titled land is not negotiable in practice and therefore not attractive as collateral. To the extent that credit is a key causal conduit between tenure and productivity, such a failure will quell the outcome of interest: "The lack of any significant relationship between title and yields may be explained by the limited use of credit in the Kenyan study regions" (Bruce *et al.*, 1994, p. 259). Innovations in lending such as mutual-responsibility borrowing groups may circumvent the reluctance on the part of both supply and demand sides to collateralize land, as well as the cost of titling programs (Carter, Wiebe, & Blarel, 1994, p. 156). For all of these reasons, even where titling or other tenure reform is demanded and supplied, detectable productivity gains may not ensue.

Methodological obstacles keep the case from being closed. In attempting context-specific definitions of key variables, "tenure security" was typically elaborated into such components as breadth, duration, and assurance of rights. But "tenure security" should properly only re-