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# Empirically Valuing the Security of Land Tenure

*Land Policies and Farm Productivity in Thailand* By Gershon Feder, Tongroj Onchan, Yongyuth Chalamwong, and Chira Hongladarom Baltimore Johns Hopkins University Press for the World Bank, 1988, 165 pages, \$18.95

Reviewed by William F. Hyde

Land tenure has reappeared in recent years as a substantial research and policy topic in agriculture and resource economics. One can make the case that secure tenure is the key to rural development and resource management, particularly for many developing countries in Latin America, Africa, and Asia. Yet, the focus of most research published to date is on the varying institutional possibilities (the wide range of rules, rights, and regulations) that describe tenure in specific situations. The literature is generally either conceptual or anecdotal. Feder and his co-authors take the inquiry into land tenure a long step forward. Theirs is the first theoretically solid and analytically complete empirical case study. It assesses the impacts of secure land tenure on farm productivity in interior Thailand. This review provides more of a synopsis of their book than is common in most reviews because of both the importance of the book and the quality of the analysis.

The basic analysis relies primarily on survey data from three villages, each with more than 360 farm household observations. Agricultural land in each of these villages falls into two extreme tenure categories, one resembling fee simple ownership and one composed of squatter plots on public land. The existence of only two well-defined categories greatly simplifies the analysis. Therefore, the authors go to considerable length to explain the tenurial detail of this Thai case. They contrast a range of borrowing and lending experiences, farm plot distribution, community infrastructure, the record of land exchange, farmers' experience with eviction, and farmers' expectations of the benefits of titling, all in order to formally characterize the local situation and to justify reliance on only two tenurial categories in their subsequent analysis.

Later, the authors examine data from a fourth village with these two tenure categories plus one more category, STK (the Thai abbreviation for temporary cultivation rights). STK certificates provide usufruct rights to squatters but prohibit land transactions.

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Observations from the first three villages furnish insight into the impacts of tenure security on credit, input use, output productivity, land value, and income. These insights eventually permit the authors to draw conclusions regarding both the private and social net benefits of secure title. Observations from the fourth village permit similar conclusions regarding STK.

The modeling effort itself is a contribution to research in land tenure, not for its originality or its theoretical breakthrough, but for its clarity and its thoroughness. This book is much more than a statistical estimation of the relationship between secure title and land value. The authors' figure 1 summarizes by linking 1) titling to security and to increases in both the supply and demand for credit, and showing how 2) increased credit permits increased investment in fixed productive inputs, which 3) creates the demand that, together with the expanded supply of credit, stimulates increases in variable inputs. Increases in both fixed and variable inputs then 4) expand productivity per acre and increase 5a) incomes and 5b) land values. These conceptual links are theoretically sound and consistent with hypotheses proposed in the previous literature on tenure. They go well beyond the statistical correlations that tend to be the analytical extent of most previous empirical literature.

The bulk of the book develops these conceptual links in theoretical detail and proceeds with the six basic econometric investigations. The theory starts with a risk-averse farmer who maximizes wealth over his lifetime while adjusting for the expectation of eviction from insecure landholdings. The result is a series of 13 tightly reasoned propositions that are tested subsequently in the empirical analysis. The empirical tests include various alternative functional formulations, for example a) both equilibrium and disequilibrium tests of the institutional credit market and b) examinations of fixed investment measured independently as land, two kinds of capital formation, and changes in the capital-land ratio. The measure of land is always adjusted for quality.

The resulting regressions are replicated independently for each of the three villages. The econometric results are statistically reliable and remarkably consistent both with theory and across villages. One village provides the unusual case where title produces small, sometimes insignificant impacts. The apparent anomaly is explained by the large amount of noninstitutional credit available in this village and the use of collateral other than titled land to secure noninstitutional loans.

The Thai Government has begun a program of issuing nontransferable usufruct rights (STK's) to squatters. Feder and his co-authors examine one village (over 300 observations) where this program is active. They anticipate that the lack of transferability of these rights restricts the use of STK permits as collateral with lending institutions and, therefore, restricts their economic benefit. The econometric analysis supports their anticipations. STK permits fail to enhance land value (or capital accumulation or land improvement). Land with STK permits is comparable in value to land with no title and is substantially less in value than land with secure title. This value difference is also statistically significant.

The authors conclude that titling results in 25 to 130-percent increases in land value. The social net benefits of titling (adjusted for subsidized administrative costs and differences between private and social risk aversion) exceed 25 percent in all villages except the one with a substantial amount of noninstitutional credit.

The authors' caveats on these findings stress credit availability and environmental impacts. The market for rural credit is heavily administered. Alternative administrative practices would adjust the authors' conclusions, although they feel their general conclusions regarding the importance of secure tenure would be robust even in an undistorted institutional credit market.

I disagree with the authors on only one issue. They suspect that titling is associated with negative environmental impacts. Secure tenure, it seems to me, provides greater incentive to protect the land's long-

run productivity. The authors' capital formation regressions support this conclusion, developed country observations on soil erosion and soil protection support it, and my own observations of developing country forestry support it. Poor environmental management of forests and rangelands tends to occur where there is no enforceable claim on the land. Specifically, this has been my observation in the uplands of Thailand, and it is my reason for anticipating even greater social benefits than the authors' claim for secure tenure and for titling programs.

My conclusion is that this book is a carefully organized, tightly reasoned effort. The mathematics is easy to follow, the economics is sound and complete. The analysis has important implications for the value of secure tenure and titling programs everywhere, not just in Thailand or on agricultural land. The analysis of Feder and his co-authors has strong policy implications for the likely failure of partial tenure solutions like STK on public lands throughout the developing world. If broadly read, this book has strong policy implications even for nonagricultural resource problems like tropical deforestation.

This book should be a model for many more empirical analyses of the gains from secure tenure. It is one of the more exciting books I have read in a while. It can become a classic in the field.

After this review was written, *Land Policies and Farm Productivity in Thailand* was selected as 1989 winner of the American Agricultural Economic Association award for "quality of research discovery."