Land Rights Revisited

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1. Introduction

The role of property rights in development has long been one of the central themes in the economic analysis of institutions. Behind much of this work is a hypothesis that well-defined individualistic property rights, codified and protected by the state, provide a central precondition for economic growth. Arguments for this view can be found in the work of classical economists such as Adam Smith.[1] More recently, this view was revived in the work of economists such as Coase (1960) or Demsetz (1967) and, within a historical context, North (1981). Macro-level studies have suggestive evidence that institutions governing property are an important factor in explaining growth and the lack thereof in parts of the world (North and Weingast, 1989; Acemoglu et al. 2001). This macro-evidence is mainly based on cross-country growth regressions in which rather crude aggregate data is used to develop highly suggestive narratives. While these narratives receive much attention in policy circles, they converge on the following: institutions, including providing secure and transferable property rights, matter for development.[2]

In this paper, we will briefly revisit some of this literature, focusing on the rights to one crucial asset in most poor developing countries, land. As in the other papers in this collection, we do not focus on the macro-level evidence, but take a microeconomic approach. Although many of the issues are generic, our focus in terms of the evidence will be on rural land rights in Africa. With poverty persistence most notable in Africa, and with most of the poor still living off the land, this focus remains relevant. We complement the existing evidence by highlighting the case of land rights in Ethiopia. Given its size and persistent poverty, the case of Ethiopia is justifiably highlighted in any debate on the causes of low growth and development: take a random poor person from Africa, and the odds are that she is an Ethiopian. Furthermore, the evolution of its, historically feudal, land rights system to its more

[1] Adam Smith starts his first lecture in the first series of lectures on jurisprudence with "The first and chief design of government is to maintain justice: to prevent the members of society from encroaching on one another's property, or seizing what is not their own. The design here is to give each one the secure and peaceable possession of his own property." (Smith (1978), p.5). He appears to have found this a self-evident statement, as relatively little further discussion appears in his work.
[2] For example, see table 1 and 2 in Pande and Udry (2006).

recent system of state-owned land should render its current and historical land institutions of interest to any student of institutions and their implications.

In the next section, we revisit the standard arguments for why secure, individualised property rights matter for efficiency. In section 3, we provide a discussion of some generic methodological issues associated with the empirical exploration of the link between land related property rights and efficiency. We highlight issues related to the macroeconomic approach, and present the case for and some problems with a more microeconomic analysis. In section 4, we introduce the Ethiopian case-study, describing its recent evolution of land rights and emphasising its differences with more commonly studied cases in Africa. The final section uses a rural panel data set from Ethiopia with detailed data on land right perceptions to supplement existing evidence on the impact of the particular land rights context on specific investments in land.

2. Property Rights and Efficiency

North (1981) provides the standard definition of an economic institution as: "a set of rules, compliance procedures and moral and ethical behavioural norms designed to constrain the behaviour of individuals in the interests of maximizing the wealth or utility of principals" (p.201-202). A property rights system provides such a set of rules, assigning rights to use specific goods or assets from a nonprohibited set of uses. Full private property rights assign and recognise the exclusive use of goods to particular individuals, bounded by some constraints, such as that this usage is not violating the rights of someone else. They give an individual access rights to the stream of benefits from these goods and the right to transfer this right to others in whatever way they choose. These rights are secure and inalienable so enforcement is never in doubt. However, many property rights are not as complete or individualistic as described here. For example, property rights could be communal, whereby rights are shared, or private, but restricted, such as in the context of particular types of customary law, whereby rights cannot be wholly ceded by those to whom an asset has been allocated.[3]

[3]Bruce and Migot-Adholla (1994) document forms of customary land laws in Africa with this feature.

Standard results from welfare economics as reflected in the welfare theorems rely on well-defined and enforceable property rights to endowments and commodities to reach its conclusions on efficiency of the competitive equilibrium. They are private in the sense that control over the use of all endowments and commodities is assigned to specific agents. As developed by Coase (1960), private property rights internalize all incentives providing a route to efficiency. Two aspects of this need to be emphasised in order to understand the problems related to the inefficiencies caused by incomplete property rights. The first aspect relates to the security of the right to benefit from the use of the endowments and commodities. For example, the stream of benefits from use of endowments in production will accrue to the owner, as will be the costs.[4] There is also no uncertainty surrounding whether someone else, another individual or the state, will expropriate these commodities, by taking over the right to benefit from them. A second, related aspect addresses the right to trade or exchange the right to the benefits itself: there should be no restrictions to realising gains from trade. Within the context of otherwise perfect conditions for competitive equilibrium, these related features ensure perfectly aligned incentives for efficient use of resources, with opportunities to realize full gains from trading which are necessary for efficiency.

These efficiency benefits can also be shown to exist in response to marginal improvements in property rights. Besley (1995) provides a simple but comprehensive theoretical exposition of these two basic features of property rights and their implication for incentives to investment in assets, such as land. He shows that marginal improvements in security (expressed as a reduction in the probability of expropriation) or improvements in the ability to trade the asset (here modelled as a reduction in the transactions costs of trading) increase investment incentives. He also shows that within the context of imperfect credit markets, for example due to agency or enforcement of contract problems, there is a third benefit of improved property rights on investment: if land is easier to collateralize due to improved rights, then the bank can lower interest rates, increasing land investment.

[4] In contrast, such arrangements as, for example, communal land may invite free-rider problems, resulting in underinvestment in the land.

However, improving property rights does not occur in a vacuum outside the market; rather, strategic behaviour may aim to try to influence the allocation of rights. Besley (1995) discusses how land rights can be influenced by investment: in particular contexts, such as Ghana in his case, improving the land may result in an increased claim to the land, reducing the risk of expropriation. Deininger and Jin (2006) present a related model in which improved security may have ambiguous effects on investment if investment can increase both productivity and future security. More generally, if improving land rights involves actions by the state or another specific agent then this process may provide incentives for directly unproductive investments, such as corrupt side-payments, which may offset any efficiency gains. Improving land rights may also be costly, requiring, for instance, substantial investments in legal institutions. Consequently, a relatively highly efficient, 'rich' economy may be needed to develop such legal institutions, limiting the scope for land right improvements to stimulate efficiency in poorer contexts.

Furthermore, a multitude of alternative non-market based coordination mechanisms exist to complement imperfect markets. Examples include informal reciprocal insurance institutions or interlinked credit and other factor markets. The theory of the second best shows that addressing one market failure – such as improving the security of land property rights – is not necessarily going to lead to an increase in efficiency (Bardhan, 2006, chapter in this volume). For example, as Udry and Goldstein (2005) argue, the finding of some inefficiencies in the customary land rights system in the area of Ghana that they were studying does not necessarily prove the case for recommending the introduction of full private land property rights in this context. This is demonstrated by Banerjee et al. (2002) who show that increased land tenure rights may not always lead to efficient outcomes, within the context of market imperfections that offer a role for sharecropping contracts, Their model suggests that a landlord's threat to evict a tenant may encourage the tenant to produce greater yield by increasing his effort to an efficient level.

3. Macro- and micro-approaches to study the role of land rights

In recent years, the main focus of applied empirical work on property rights and their impact has been the exploration of this relationship in the context of cross-country comparisons. In this section, we will first briefly revisit the main insights and limitations of this literature. We will then explore the opportunities offered by the microeconometric approach, as well as the methodological challenges of its application.

An important driving force in the expansion of the cross-country literature on growth and institutions has been the increasing availability of data on variables describing institutional quality. A variety of measures have been used, including those related to law enforcement, the operations of formal sector financial markets, democracy, trust, corruption and bureaucracy (Hall and Jones, 1999; Knack and Keefer, 1995; Mauro, 1995). The most relevant direct measure related to property rights appears to be the measure of protection against expropriation risk, first used by Knack and Keefer (1995) and subsequently in many other studies, such as Acemoglu et al., (2001). The measure is defined as a score of the risk of expropriation of foreign private investment by government.

The evidence suggests a close link between protection against expropriation risk and growth. Allowing for the fact that institutions may be the consequence of growth, the most convincing evidence applies an instrumental variable approach with historical data as instruments. Using this strategy, Acemoglu et al. (2001) find strong effects of expropriation risk on growth: one standard deviation increase in the protection against expropriation risk increases GDP per worker by 309 percent.[5]

How convincing is this evidence in arguing the case for prioritizing improvement of property rights, more specifically land rights, in developing countries? Clearly, this is

[5]Acemoglu et al. (2001) use settler mortality as their instrument. They use mortality rates among European-born soldiers, sailors and bishops while stationed in colonies to measure the effects of local diseases on people without inherited or acquired immunities. The argument is that in places Europeans could not easily settle due to high mortality they were more likely to set up extractive institutions. These extractive institutions affected current institutions, with the causality going from potential settler mortality to current performance only via institutions.

highly suggestive evidence which shapes broad policy debates. Nevertheless, much caution needs to be applied. For example, the instruments used are fixed for each country. As a result, the IV-estimates are purged of the effect of any institutions that change over time. However, this implies that the IV-approach cannot identify the consequences of the change in institutions on growth.

More crucially, the nature of the data on institutional quality and the aggregate nature of analysis may well limit its use for policy in particular countries. A number of reasons can be put forward, specifically when considering land issues. First, the measure used when looking at land issues relates to the risk of expropriation for foreign investors. This requires a strong assumption that all investors, domestic or foreign, in all sectors, rural and urban, face the same risks. If anything, the measure may be representative for parts of urban formal sector, but is unlikely to be sufficiently informative for the rural or informal sectors.[6] A related problem is the assumption of macro-analysis that changes in the particular index affect different firms and individuals in different sectors in the same way, even though market failures and variable enforcement of rules are bound to imply that changes in rules and rights, in fact have heterogeneous impacts.

Pande and Udry (2006) present a careful discussion of the weaknesses of the cross-country regression approach for analysing land issues using this index of risk of expropriation, building on a thorough exposition of evidence from West Africa (Côte d'Ivoire, Gambia, Congo, Ghana). First, a distinction has to be made in terms of *de jure* and *de facto* land rights: customary land law matters in West Africa. Formal codification of the rules governing land allocation is important, but these may not be the full set of rules and norms that guide land rights in practice. In particular, in these settings, customary law remains relatively strong and matters in differential ways across countries. Furthermore, land rights are multidimensional with specific *aspects* of land rights varying between settings. For example, the security of particular land rights within the same country and setting may still differ; land tenure rights are more secure in Ghana than in Cote d'Ivoire in some communities or for some individuals,

[6] For example, many countries have established different types of 'export processing zones' and other schemes to stimulate investment by foreign investors. These schemes offer specific rights, incentives and safeguards that are well above what investors in the non-tradable or rural sector would receive.

while for others the opposite is true. This heterogeneity also implies that there are likely to be heterogeneous effects from improvements in the overall index of risk of expropriation, which are ignored in the cross-country approach.

There are, therefore, strong arguments in favour of exploring land rights and more generally, property rights, in the context of micro-level studies in particular countries or regions. A crucial advantage is the relative homogeneity of the institutional and economic context, which helps to avoid serious problems of unobserved heterogeneity. Within well-defined contexts, it is more straightforward to find ways of capturing the quality of specific institutions measured by the way in which they affect particular groups and sectors. Average measures of say, the risk of expropriation, bear little relationship to the actual risks faced by individual cultivators of different areas and plots; using micro-level data, we can allow for these differences in land rights. We may also be able to introduce a more careful analysis of the political economy of rights i.e. the incentives for strategic behaviour and the role of political power in shaping rights, which would hardly be possible when investigating rights using average measures. For example, the political economy of land rights, which affects the relative importance of customary versus codified law, can be directly brought into the analysis, as in Udry and Goldstein (2005).

Nevertheless, important challenges remain in this micro-level research programme. First, there are serious issues associated with measurement of property rights, such as rights to land. Recognizing that *de facto* rights may be different from *de jure* rights requires detailed data on these rights, beyond the simple codified rules.[7] If there is heterogeneity in the actual meaning of similar land rights across agents, one must find ways of identifying this heterogeneity in data collection. Furthermore, for investment incentives, local and individual understanding of these rights (perceived rights) are more important than formal legal rights, further affecting the way data may need to be collected or interpreted.

[7] Codified rules may provide useful instruments in statistical analysis, but if the way the formal legal structure maps into actual rights is heterogeneous, the meaning of the average effect is limited for policy purposes, as this heterogeneity has been purged out of the analysis.

Furthermore, we need sufficient variation in land or other property rights to be able to identify the effects of these rights in data. Working within a homogenous institutional, legal and economic setting may limit this variation. Here, the advantage of the research agenda as applied to developing countries is obvious: contrary to most rich economies, where there is only limited variation in land institutions within countries, land rights in developing countries display substantial variation. Just listing some examples from Africa, we find customary and formal codified laws both affecting land rights in some settings, such as in Ghana, the Democratic Republic of Congo or Cote d'Ivoire. In recent years, land titling experiments are taking place in Tanzania or Ethiopia. In many contexts, such as Malawi, communal law still governs the allocation of land rights within communities although there is increasing pressure for individualisation of rights.[8]

The existing variation in land rights within many developing countries provides sources of exogenous variation that allow more credible routes to identifying causal effects. For example, in quite a number of settings in the developing world, changes to land rights have taken place relatively recently, or are in the process of taking place, for example in the form of introduction of formal land titles. However, while it may be tempting to simply look at the change in efficiency or other outcomes before and after the land rights changes, for some households, this general change over time would not necessarily constitute a legitimate source of exogenous variation for identification of the impact of policy change. For instance, it is unlikely that during the introduction of formal land titles, the strategy used was entirely 'random', devoid of any processes of selection, including political ones. The impact may be further contaminated by strategic behaviour on the part of households aimed at becoming eligible for the title.

In some settings, it has been possible to exploit features of the implementation of the titling or other land rights programmes to convincingly evaluate the impact of land titles. For example, in her work on Peru, Field and Torero (2004) exploited the staggered implementation of the programme, so that some neighbourhoods were reached earlier than others. This neighbourhood difference provided the means for

[8] Pande and Udry (2006), table 4, shows the wide variety of land rights exploited in micro-level studies in the developing world.

comparison of outcomes between those participating in the programme and those not. Other studies, such as Banerjee et al. (2002) or Do and Iyer (2004), exploited differences in the way the programme was affecting comparable groups in a similar way to identify the impact of the particular forms of land tenure reform that they were studying in India and Vietnam.

Another source of exogenous variation that can be used to identify the impact of land rights and, possibly, changes in land rights may stem from a proper understanding of the incentives and constraints that a particular land rights system poses for individual households within this land rights system. One may then exploit this information to understand the impact of the institutional setting on outcomes, to the the extent that these incentives and constraints vary by the economic, social or political positions of the households. For example, one may have information on the rules or practice governing implementation of land rights changes. Alternatively, one may have an understanding of the links between actual land rights and the particular social or political position of households. Udry and Goldstein (2005) measure differences in perceived land rights in an area of Ghana and show that these perceptions are correlated with the political positions of individuals within the community. Holding a political office then becomes the source of exogenous variation linking perceived tenure security to particular outcomes, in their case yields via the duration of fallow. This allows them to conclude that there are strong causal effects from land institutions to outcomes.

Such examples demonstrate that this micro-based approach can convincingly highlight the impact of the institutional settings on outcomes. As already alluded to in the theoretical discussion in the previous section, it nevertheless remains difficult to draw simple policy conclusions from this type of work. For example, showing that institutions cause inefficiencies does not resolve the issue of how to implement change, not least since this process of change will be part of the local political economy as well.

4. Case Study: Land rights in Ethiopia

In the last decade or so, much work has been done using microlevel data in Africa to explore the impact of land institutions on outcomes and efficiency. Many of these studies have explored land rights in the context of the interaction between customary law and often colonial codified land rights. Besley (1995) provides evidence, for example showing that in one setting in Ghana (Wassa), having a deed has a positive effect on land rights, while in another area (Anloga), customary rules appear to result in a deed lowering rights. Overall, he finds that land rights increase productivity. A number of studies on Kenya (e.g. Migot-Adholla et al., 1991; Pinckney and Kimuyu, 1994) have focused on the impact of the land registration policy which had started in the 1960s on farm productivity, finding no impact relative to plot governed by customary law. Brasselle et al. (2002) presents further evidence from other studies, including on Uganda, Burkina Faso, Niger and Somalia. It is striking that the evidence is not strongly supportive of a positive impact of titles or deeds on land rights and productivity.[9]

Ethiopia presents a different case, but not a less interesting one.[10] Traditional customary land rights do not feature here, nor do any private land titles. A land reform in 1976 and subsequent turmoil in rural areas entirely destroyed the previous, feudal land institutions. Formal institutions, ultimately controlled by the state, allocate land to peasants, who only have usufruct rights and face serious limitations on transfer rights.[11] In this section, we introduce the general context of land rights in Ethiopia. In

[9] One reason may be that many of the papers in this list assume property rights variation to be exogenous, potentially causing biased inference. Only Brasselle et al. (2002) and Besley (1995) try to account for this problem using variables such as mode of acquisition and tenure history.

[10] This section draws on Dercon et al., 2006.

[11] This land rights system has more in common with for example China or Vietnam than with other African countries. There are a number of papers by Scott Rozelle and co-authors (Li and Rozelle, 1998; Jacoby et al, 2002; Brandt et al 2004) that explore the effects of land re-allocation in North-eastern China by village administrators. The dismantling of agricultural cooperatives in the late 1970s ushered in the household responsibility system whereby households were granted user rights to land in return for meeting particular tax and quota obligations. Ownership remained vested with the village and despite calls for tenure security, a series of land re-allocations followed in which land was taken away from households and re-distributed to others. However, the data display substantial heterogeneity in the security of tenure displayed across villages; in some security is high and, apart from the right to sell land, households seem to be able to deploy the land as they choose. Since there is variation in both the timing of re-allocation and where it occurs, the data can be exploited to evaluate the effect of expropriation risk on investment.

the next section, we discuss evidence on the factors determining land rights perceptions, and their impact on investment in perennial crops.

The current land institutions were formed as a consequence of the revolution that removed the emperor from the throne in 1973, and the subsequent establishment of a military government, which is usually referred to as the Dergue (the 'Committee'). This new government implemented a large scale land reform in 1976. Since then, land has been owned by the state that offers use rights to farm households. Hiring-out of land, let alone its sale, exchange or mortgaging was not allowed, and only under specific and strict conditions could sharecropping take place. Local 'peasant associations' (PAs) were given the task of deciding and distributing user rights to cultivators. These PAs were effectively the local government for an administrative unit consisting of a small number of villages. Legally, land was offered to families based on their household size; this broad correlation is confirmed by all available data. In most areas, cultivators were allowed to retain some of the land that they had been cultivating before the policy change. This group included farmers who had inherited land or were simply tenants for large landlords. Further, under the new system, landless farmers were also accommodated. Nevertheless, it appears that political and local factors played a considerable role as well, suggesting a diverse experience in implementation (Rahmato, 1984).

Since the first land reform in 1976, land allocation has been implemented at the local level. Land redistribution decisions are taken at the PA level by a specific committee. Periodic land redistributions were used to reallocate land. Even though land size and need should have been the guiding principles for land reditributions, the process left much room for interpretation and discretion. For instance, whether a newly formed household should be entitled to land was left up to these local level decision makes, as were judgements on land quality as well as, in a country with no codified land measurement units, decisions on the size of the land offered. Suspicions of forms of 'capture' have been well documented (e.g.Rahmato (1984), p.43).

As the result of this implementation strategy, there were repeated land reallocations in many areas. For example, the Ethiopian Rural Household Survey (ERHS, the data used in the next section) showed that more than a third of households randomly

selected from communities in the main regions of the country had lost land at one point or another during the period 1976-1991 through land reallocation. Another study, by Benin and Pender (2001) examined 98 peasant associations and found that on average they had 3 land redistributions in this period; one PA even reported 14 years of land reallocations – effectively one a year.

The underlying legal framework remained similar until the end of the Dergue government in 1991. After its fall, land reallocations were temporarily halted pending a new constitutional framework. The practice of repeated land redistribution had been already frozen in 1989, as part of the market-oriented reforms undertaken by the Dergue. In practice, at the local level, some occasional land reallocations continued to take place. Politically, land rights again became one of the most hotly debated topics. Expectations were raised for a dramatic reversal towards privatization of land, but in 1996, a new constitution was adopted, consolidating the existing situation, with only minor amendments. The constitution states that land is the collective property of the state, and a mandate is given to regional governments for its administration. The constitution offers usufruct rights to land, free of charge, to any farmer who wants to make a livelihood from farming, but strictly prohibits sale, exchange for other property or mortgage. Land leasing to a third party has now been allowed. Furthermore, transfers within families, specifically towards offspring, are also guaranteed.

On paper, these broader land rights should have provided more stability than before. In practice, land rights remained in turmoil. In Tigray, it was announced that there would not be any further land redistribution in the future, and in 1998 land registration started tentatively. However, in many parts of the country, any sense of increased stability of rights was undermined by inconsistency in the proceedings. For example, in late 1997 and early 1998, political tensions resulted in the unexpected re-start of land reform in one region, the Amhara Region where land was offered to former soldiers and others. This changed the mood about land rights in the country; contrary to the stated policy, compensation was not paid to the former owners of this reallocated land (Holden and Hailu Yohannes, 2002). In Southern Nations, Nationalities and People's Regional State (SNNP) and Oromia, the other two large regions in Ethiopia, no clear policy statements were made until about 2002. More

recently and belatedly, tentative steps have been made towards some registration in all regions.

A number of studies in the period after the new constitution in 1996 have reported that farmers fear that they will be subjected to possible land redistribution without compensation at any time in the near future. In the Amhara Region, Benin and Pender (2001) report that by 2000, 80 percent of communities expected further land reform. Based on a nationally representative survey of farm households, Deininger and Jin (2006) find that 9 percent of the farmers were affected by land redistribution in the period between 1991 and 1998. In addition, less than a third of the farmers did not expect land redistribution in the near future. In the data set used in the next section, these results are reasserted: about 7 percent of households in 1999 lost land during land redistribution in the preceding five years, 11 percent of households expected to lose land in the next five years due land reform while 10 percent expected to gain land.

5. Case Study: The micro-level determinants of land rights and their impact in Ethiopia

In this final section, we revisit some recent evidence on the impact of land rights on investment in land and trees in Ethiopia, extending Dercon et al. (2006), in view of the preceding discussion on the problems and concerns in analyzing land rights and their impact in micro-level studies. We also draw on evidence of a related study by Deininger and Jin (2006) who use a large cross-section survey of more than 8,500 farm households conducted in 2001, covering the main agro-ecological zones. Dercon et al. (2006) use the Ethiopian Rural Household Survey, a panel data with six rounds collected between 1994 and 2004, covering about 1,450 households with relatively low attrition (about 3 percent per round). Although data on land rights was collected in the last three rounds (1997, 1999 and 2004), Dercon et al. (2006) use only data from 1997 and 1999 as some variables required for the analysis were not available in 2004.

We explore and extend the evidence presented in Dercon et al. (2006) on the basis of three questions, inspired by the earlier discussion on the empirical challenges faced by micro-level studies of institutions. First, in principle, micro-level studies can explore the differences in land rights between different groups or individuals. We ask: how can we unbundle and measure land rights in this context, and what does the evidence from doing so tell us? We highlight some problems associated with measurement of land rights via surveys and discuss whether the measures found reflect the dimensions one would like to capture. The second question is what determines land rights and changes therein in the local context analyzed? In particular, we explore how local level differences in economic, social and political position appear to affect the nature of land rights in the experience of different farm households over time. This provides a possible way of identifying the differential impact of land rights on outcomes. Finally, we ask: what is the evidence on the impact of land rights on land-related investment?[12]

Studying rural land rights and its consequences in Ethiopia is difficult for at least one simple reason: no land is privately owned and all belongs to state, controlled by the local government. As a result, in terms of 'legal' rights there is no variation in formal land rights across individuals. Nevertheless, given the history of recurring land redistribution, there is likely to be variation in the *perception* of land rights among households and plots. Both Deininger and Jin (2006) and Dercon et al. (2006) collected data on perceptions of different dimensions of land rights based on household surveys. This presents three problems. First, as they are subjective perceptions, they do not necessarily bear a direct relationship to the actual land rights offered and enforced. However, when researching the consequences of particular land rights in terms of investment and efficiency, perceived rights will govern behaviour,

[12] A number of other studies have explored the impact of land rights on long-term investments in Ethiopia. Holden and Hailu Yohannes (2002) investigate the planting of perennial crops using data from 15 different sites in Southern Ethiopia. They find that tenure insecurity has little effect on the decision of farmers to plant perennials. Gebremedhin and Swinton (2001) suggest that farmers' perceived land tenure security in Tigray was significantly and positively associated with long-term durable soil conservation investments such as stone terraces. Gebremedhin et al. (2003) argue, using village level data, that perceived tenure security increases land investments. Despite their suggestive evidence, these papers do not appear to address endogeneity and other identification problems sufficiently.

so this is in itself not a serious problem in our context.[13] Secondly, collecting subjective data via survey data is particularly vulnerable to framing issues, such as whether the question asked has direct meaning in the context researched. Thirdly, rights have multiple dimensions and perceptions of rights are rarely in the form of having full rights or no rights. Collecting information on the perceived distribution of rights may be better but in practice difficult.

Using (broadly) nationally representative data, Deininger and Jin (2006) collect a data on a variety of dimensions of land rights, including perceptions of particular transfer rights (rental/sharecropping, mortgage/inheritance and sales rights) as well as whether the household expects land redistribution in the coming 5 years or not. Furthermore, some data on the recent experience with land redistribution (since 1991) were also collected. They find widespread but not complete perception of rights to rent or sharecrop (91 percent), a right explicitly allowed for in the constitution, but virtually no-one (only 4 percent) perceives the right to sell (which is illegal, although apparently in some areas there have been reports that people had started engaging in it unofficially).[14] About 9 percent of households expected a land redistribution to affect them in the next 5 years, and 27 percent of households expect no redistribution. The rest appear to "don't know" – a rather high percentage.

Our own field work experience in collecting the data used in Dercon et al. (2006) highlighted some of the data collection problems related to land. First, probing for the perceived risk of expropriation in the next five years proved difficult, and a high number of inconsistencies were found both during piloting and the actual survey. Reasons may have been that the issue, phrased in a negative sense (losing land), may have been considered too sensitive within these communities, leading farmers rather unwilling to express their fears or confidence. Asking these questions without a time frame of five years also proved difficult. The problems during piloting in probing

[13] The reverse, constructing 'objective' land rights without considering the perception of these rights independently, is possibly more problematic. For example, Jacoby et al. (2002) in a study on the impact of land rights in China, a context rather similar to the Ethiopian case, focused exclusively on calibrating 'objective' risks of expropriation based on past history of expropriation, and link these to land-specific investments.

[14] They also report perceived mortage and inheritance rights (table 2), but as a joint category. But while inheritance would seem to be possible now with the constitution, mortgaging land is still explicitly banned, making this category unfortunate and hard to interpret.

about these risks of losing land led us not to include the questions in the 1997 survey, although for comparison we included these questions again in 1999 and 2004.[15]

Probing for transfer rights in the form of sales or mortgaging rights proved difficult as well, with virtually all farmers offering the 'official' line that these transactions are banned. Similarly, little variation could be detected in rights towards rental or sharecropping which by 1997 appear to have been fully established. As a result, after much piloting, the survey chose to focus on probing for the right to benefit from the land and to decide the destiny of the plot of land, leaving the nature of the transaction open, although the primary suggestion was bequests and intra-family transfers.[16] While these choices were highly dependent on the context in which the research took place, the added advantage of a focus on these control rights is that an open-ended time horizon is used, beyond five years. This appears helpful to investigate the impact of land rights on perennial crops such as coffee, which require a long-term perspective, well beyond five year, since any newly planted trees would only offer a full harvest after about 8 years and continue to do so for several decades. With low life expectancy and a high risk morbidity, an inter-generational perspective would be required for investment. The data revealed that about 59 percent of the land was considered to have land rights defined in this particular way in 1997. In 1999, this went down to about 52 percent, and by 2004, it was 58 percent. These differences across years are statistically significant.[17]

Both the cross-sectional and time-series variation in these measures of land rights are worth exploring further. In principle, there was no formal change in the legal position of land rights during this period. The constitutional change in 1996 allowed rental and sharecropping, largely formalizing an existing situation. The only real change was a *commitment* to long-term user rights, including bequeth and related inter-family

[15] It is possible link the data from 1999 on the risk of losing land in the next five years to whether land was actually lost in 2004. In 1999, 14 percent of households expected to lose land. Overall, only 2.2 actually lost land in 2004. There is some correlation between those expecting to lose land and actual land losses: of those that lost land in 2004, 16.6 percent expected to lose land five year earlier, compared to 13.9 percent of those that did not lose land. The difference is not significant. By 2004, the percentage of people expecting to lose land in the subsequent five years went down to 6.3 percent.

[16] The question asked was "are you able to pass on the plot to a family member or someone else"?

[17] There is some correlation between losing land in 2004 and limited control rights in 1999: 47 percent of the land held by those that lost land in 2004 was considered to have land rights in terms of being able to pass it on to relatives and others, while for the those that did not lose land, this was 52 percent. This difference is not significantly different from zero.

rights.[18] A major change in land issues in between the first two rounds of the data considered (1997-1999) was the rather unexpected large land reform in parts of one region, Amhara Region. If people perceived that land reform was back on the agenda, then this would provide changing incentives and affect perceptions of land rights. It would be consistent with the drop in perceived rights between 1997 and 1999, and the subsequent recovery. Without data directly linking these events to the changing perceptions, the direct link of these shocks to the policy environment is not easily established. Still, it is possible to explore the correlation of these perceived land rights changes with household characteristics describing the relative economic and political position of the household.

We regress the perceived rights to transfer land to relatives or others at the plot-level on a set of household and plot characteristics, controlling for community fixed effects.[19] The sample size is 9325 plots. Explanatory plot-level variables used include the mode of acquisition (whether the land was initially purchased, inherited or sharecropped, using allocated land as a base group)[20] and how long the plot has been cultivated by the household. Plot level controls include land quality variables and plot size (not reported). Household level variables include total household size, total land holdings per capita and whether the household has lost ever any land up to the particular survey round. To investigate the role of local level capture, we include a variable whether before 1995, the household held a powerful position on the committee allocating land in the community, generally seen as a sign of political power in the village – around 10 percent of the sample has held such a position. Table 1 offers the results. Column (1) gives the OLS results controlling for community fixed effects, effectively pooling the sample across the three rounds. Column (2) estimates the same specification but with household fixed effects, so that unobserved heterogeneity is controlled for. Since we are dealing with perceptions data, this may help to account for systematic household-level 'pessimism' or 'optimism' regarding

[18]The data period considered is too early for the more recent initiatives leading to offering land registration.

[19] It would have been interesting to unpack the differences across regions and communities, but with only 15 villages this cannot be done in a robust way.

[20] Purchased land refers largely to land purchased before the land reform. It accounts to less than 3 percent of the plots in the sample. About 30 percent of the plots are inherited and 9 percent are sharecropped plots. About 68 percent of the plots are allocated and is used as the base group in the regressions..

rights, and other unobservable correlates. In both regressions, there is a strong negative correlation of land rights with sharecropped plots, relative to allocated plots: households perceive land rights offered by the state as in any case substnatially stronger than those based on simple rental and sharecropping arrangements. However, the difference is well below one, while the expected difference would be one, if state-allocated land offered full rights, and sharecropping none whatsoever (given that this land is offered in sharecropping by another household). In the fixed effects specification, being a wealthy farmer in terms of land appears to increase perceived rights as well, which would be consistent with some capture related to economic positions.

In column (3), the way the correlates of land rights changed in this period is explored further, by interacting the variables describing the mode of acquisition with a year dummy, allowing us to investigate the changes in coefficients for each mode of acquisition over time and relative to land, directly allocated by the local government. We also allow for a different effect over time for the role of the political power. The regression also controls for community time-varying fixed effects. First, it can be noted that non-government allocated land, such as inherited and purchased land, appears to have lower perceived land rights from 1999, effectively to a lower level than allocated land.[21] By 2004, the rights linked to allocated land also appear to become stronger in relation to sharecropped land. Interestingly, this would be consistent with a gradually improved sense of long-term security of land rights related to government-allocated land. However, this is only relative to rights to the land that farmers first obtained via purchase and especially inheritance (about 33 percent of all plots), often well before the first land reform in 1976. The time dummy shows that the 'constant', incorporating the land rights implied by the base-group of land allocated by the government, went down significantly in 1999 and 2004. Secondly, there is a striking effect on the political power variable in 1999. The coefficient suggests an increase in the perceived land rights, relative to the base year 1997, by those who have in the past been closely involved in the committees allocating land within the villages studied. This could reflect a simple information issue: they may have found the

[21] For example, the sum of the coefficient on the level variable plus the interaction term for 1999 for purchased land is now -0.20, implying that relative to land allocated, this type of plot has on average 20 percent lower perceived land rights in 1999.

constitutional commitment to long-term land rights more credible after 1999 (after the land reform of 1997-87 in amhara) or they may have been expecting land reallocations, which they could have made to count to their advantage, given their influence. The regression also suggests that by 2004, this 'political power' effect on land rights seems to have disappeared, possibly because between 1999 and 2004, no further land reform of any scale or significance took place across Ethiopia that would have justified any informational advantage or land reform expectations. Column (4) repeats this analysis, but this time using a fixed effect conditional logit regression, to avoid some of the issues surrounding estimating a limited dependent variable model with a linear specification. The findings are even clearer and stronger for the points discussed earlier. First, a weakening of perceived land rights for inherited and purchased plots relative to government-allocated plots. Secondly, increasing perceived land rights for those with a history in committees related to land reallocation from 1999, which in this case seems to persist also in 2004. One effect is somewhat different: in 1999, those cultivating sharecropped plots consider that their land rights increased in 1999 relative to 1997 and relative to government-allocated land. This would be consistent with raised expectations for land reform: in 1976, one of the guiding principles of the actual implementation of the land reform was 'land to the tiller', with sharecropped land taken away from the owner and allocated by the government to the sharecropper.

Table 1 Determinants of perceived transfer rights and threat of expropriation (n=9833 plots, 1997-2004)

	OLS	Linear Fixed Effects	Linear Fixed Effects	Conditional Logit
Sharecropped plot	-0.451	-0.471	-0.416	-4.394
	(31.01)***	(26.43)***	(16.24)***	(12.07)***
Inherited plot	-0.01	-0.022	0.107	0.732
	-0.59	-1.18	(4.60)***	(3.77)***
Purchased plot	0.051	-0.006	0.204	1.975
	-1.43	-0.15	(3.93)***	(3.58)***
Years plot cultivated	0.001	0	0.001	0.005
	(1.87)*	-0.22	(1.80)*	-1.26
Influential position in PA	0.007			
	-0.47			
Whether ever lost land?	0.089	0.173	-0.055	-0.472
	(5.87)***	(8.10)***	(2.19)**	(2.24)**
Household size	-0.003	-0.002	0.004	0.024
	-1.59	-0.34	-0.99	-0.69
Land per capita	0.013	0.047	0.103	0.697
	-0.95	(2.79)***	(6.67)***	(5.43)***
1999*sharecropped plot			-0.001	1.728
			-0.04	(4.30)***
2004*sharecropped plot			-0.329	-1.834
			(8.06)***	(2.64)***
1999*inherited plot			-0.149	-0.996
			(4.50)***	(3.68)***
2004*inherited plot			-0.192	-1.437
			(4.79)***	(4.35)***
1999*purchased plot			-0.406	-3.825
			(5.94)***	(5.53)***
2004*purchased plot			-0.326	-2.701
			(4.12)***	(3.87)***
1999*influential post			0.054	0.62
			(1.95)*	(2.63)***
2004*influential post			0.065	0.766
			(1.91)*	(2.52)**
Constant	0.694	0.591	0.45	
	(18.02)***	(12.65)***	(10.56)***	
Time dummy 1999			-0.073	-0.552
			(1.69)*	(1.66)*
Time dummy 2004			-0.286	-1.825
			(6.12)***	(5.06)***
Plot quality and plot size	x	x	x	x
Household Fixed Effects		x	x	x
Community Fixed Effects	x		x	x
Time-varying Community Fixed Effects			x	x
Observations	9833	9961	9833	7702
R-squared	0.16	0.09	0.3	
Number of hhid		1140	1127	736

Robust t statistics in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

While interesting in their own right, these correlations are not answering a more fundamental question: what is the impact of these perceptions of land rights on efficiency and investment. Deininger and Jin (2006) and Dercon et al. (2006) address this issue using their data on land rights perceptions. Deininger and Jin (2006) investigate the impact focusing on terracing and planting trees, given different measure of perceived land rights. They only observe propensities to invest over a limited period of time, and only for broad categories of investments. They also cannot directly control for endogeneity, but try to sign the bias in a theoretical model, and explore the empirical evidence accordingly. Their evidence is suggestive of a significant impact of the lack of land rights on investment.

Dercon et al. (2006) use the data used in table 1, but restrict their analysis on 4 of communities and 300 households, living in areas suitable for perennial crops, such as coffee, and for 2 years: 1997 and 1999. Perennial crops require a long-term commitment, beyond 5 years, typically intergenerationally. In the data, the area allocated to perennials stayed at 30 percent in each of the two years, although a significant shift towards coffee and away from other crops, such as eucalyptus and chat, can be observed.[22] As in the full sample, on average, perceived land rights went down significantly in this period. However, about 21 percent reported improved rights, while 44 percent reported similar rights as in 1997. The rest, 35 percent of the households, reported worse rights than before.[23] The group with worsened rights reduced the land share to perennial crops by 4.4 percent, while those with improved rights increased land allocated to these crops by 4.5 percent. These changes are significant, suggestive evidence for the hypothesis that land areas allocated to perennial crops are affected by changes in perceived land rights.

However, it may well be that trees are planted to affect land rights, implying endogeneity and the need to use an instrumental variable approach. The underlying regression in Dercon et al. (2006) uses a household fixed effects model with share of

[22] Chat is a mild drug with effects similar to amphetamine. It is increasingly widely grown and used in Ethiopia, and exported to neighbouring countries.
[23] The analysis is conducted at the household level, using plot sizes to weigh the contribution of plot-specific land rights in a household measure of land rights.

land allocated to tree crops by the household as the left hand side variable. The household fixed effects control for all sources of unobserved and observed heterogeneity at the household and farm level, including factors that may determine allocation to specific crops, such as knowledge, risk preferences, wealth or farm land quality. The right hand side variables included controls for some household level time-varying variables, as well as such as changing household characteristics (number of adults, livestock wealth, land owned). A large number of different household characteristics were tried, but they did not affect the findings and are not reported. Time-varying community fixed effects are used to capture relative price changes and other community-wide factors that may affect land allocation. A household average of the plot level transfer right variable was included, weighted by the plot size. It was treated as endogenous. There are good reasons for this, including that the same unobservable factors that may induce a change in land allocated to particular perennial crops and in perceived transfer rights. For example, particular farmers may simply develop a more pessimistic outlook, totally unrelated to the changing and confusing land policy environment, but in that case the change in the perceptions has little to do in a causal sense with the change in land allocation to perennial crops. Another reasons for treating these perceptions variables as endogenous relates to the reverse causality point, for example as in Besley (1995) and other contributions referred to before: trees may be planted to be able to claim more rights, improving perceived transfer rights subsequently. In view of the results reported in table 1, we used two variables as identifying instruments: whether the household head had, in the past, an influential position in the committee for land allocation in the village before 1995 and the share of cultivated land sharecropped for more than two years.

Table 2 reports the findings. Column (1) just reports the OLS estimates, showing that full perceived land rights as defined before adds 4.5 percent of land allocated to perennial crops. Column (2) gives the effect of land rights when the share of land sharecropped for at least two years and the village power variable are used as identifying instruments.[24] The IV-regression passes the usual tests for instruments and

[24] The 'power' variable is also interacted with land size to allow for different effects for those with much land and those without. It was found that those on the land allocation committees with lower land sizes had far lower predicted land rights than those with more land. We use land sharecropped for at least two years so that any land sharecropped as part of a strategic decision to engage in sharecropping, banking on land reform in favour of tillers, would be excluded to the extent that it happened between 1997 and 1999, the period considered, since only land pre-1997 would enter in the regressions.

appear relatively strong, altough the Sargan Overidentification test is only rejected at 9 percent. In Dercon et al. (2006), the instruments and the robustness of the results are further explored, and dropping sharecropped land as an excluded instrument does not significantly change the results. The evidence suggests a significant effect of perceived land rights on land allocation to perennial crops: one cause of the decline in land allocated to coffee by some farmers in the sample is the changes in the percieved land rights in this period. Dercon et al. (2006) calculate that if one were to manage to improve land rights perceptions for government-allocated, purchased or inherited land fully, then this could be expected to raise the share of land allocated to perennial crops by 16 percent (i.e. from just under 30 percent to about 35 percent of land allocated to these crops). Coffee is the dominant perennial crop in these areas. It is also the main source of export earnings for Ethiopia, suggesting substantial economic benefits from improving land rights.

Table 2 Impact of perceived land rights on land allocation to perennial crops 1997-99 (n=300)

	OLS (1)		2SLS (2)	
	Coeff	p-value	coeff	p-value
Land rights?	0.045	0.02	0.115	0.04
Cragg-Donald identification χ^2			41.54	0.00
Sargan Overidentification χ^2			7.93	0.09
Joint-significance F-test for identifying instruments			8.09	

Note: Dependent variable: the share of land allocated to perennial crops. All models control for household fixed effects and time-varying community fixed effects. P- values report significance levels for two-sided tests of equality of the coefficient to zero. Column (1) is linear fixed effects model assuming transfer rights exogenous; (2) is 2SLS fixed effects regression based on a first stage regression with whether the land is sharecropped for at least 2 years and whether the household has a powerful position in PA, with time interactions and land size interactions, as identifying instruments.

6. Conclusions

This paper revisited the analysis of property rights in a developing context, with an emphasis on land rights. A review of the macro-evidence pointed to a number of econometric problems as well as issues of interpretation and policy relevance. In the context of land rights, the difference between codified legal rights and customary rights or local practices for implementation and enforcement makes the use of simple indicators, such as whether a title for the land exists, unlikely to be sufficient to

describe variation in rights across countries. Furthermore, within countries, a set of existing land rights may have differential impact on different households, a point lost when using aggregate analysis, but necessary for understanding the policy implications. Furthermore, any change in land rights, such as via titling programmes, are themselves affected by the local political economy and strategic behaviour.

A microeconomic approach to the study of land rights and its implications is then warranted, since it can use context specific information to understand differential rights and their implications within countries, to address these problems. However, this does not mean that all methodological and analytical problems are easily resolved. In particular, the fact that land rights may have different meaning and implications for different households poses a challenge for the measurement of these rights. Furthermore, to link land rights to outcomes such as efficiency and investment requires that rights variables represent exogenous variation in the data. A few options were discussed such as exploiting that some otherwise similar households did not get particular rights while others did, for example due to a gradual rolling out of the programme, or political borders. Another route is to include information that reflects the political and economic position of households as it affects the incentives and constraints faced in the context of a particular land rights system.

Some of these issues were discussed in case study of Ethiopia. In this country, land is state-owned and farmers only obtain use rights for the land. Land redistributions have been a regular occurrence, although a recent constitutional change includes a commitment to more secure long-term land rights. The paper used a panel data set on perceptions of land rights, focusing on a right to be able to control who can get the land, for example in the form of a bequest or a gift to a relative. This right is relevant in the context of long-term investments such as coffee, which require a horizon of more than a decade, not least in a context of high mortality and morbidity. The 1996 constitution also seems to offer long-term rights in this respect. We also discussed some of the problems of measuring land rights in this setting, which led us to focus exclusively on land rights defined in this way in the rest of the analysis.

The data in the paper showed that between 1997 and 2004, there was some variation in these rights, with on average a decline in perceived land rights in 1999, possibly

linked to renewed fear of land reform in the wake of a rather unexpected redistribution in part of one region. The correlates of the factors determining these changes showed that they are consistent with a loss in perceived land rights in absolute terms between 1997-99 and in relative terms for government-allocated land compared to originally inherited and purchased land. Those with a history of political influence at the local level also appear to improve their perceived land rights in this period, consistent with expectations that they may benefit from any new land redistributions. There is also evidence that those with sharecropped land appear to have perceived land rights to these plots that are higher than they would be in a setting of well-defined ownership rights, possibly consistent with expectations that these sharecroppers may be able to obtain these plots from the government for long-term use during a new redistribution of land.

The variable describing the history of political influence in land allocations before 1997 is then found to be a helpful identifying instrument to address the endogeneity of land rights in a regression exploring the impact of land rights on land allocated to perennial crops (mainly coffee) in 1997 and 1999. The results show that land rights as defined in the paper matter for land allocation. Offering full and credible long-term rights to inherited, historically purchased and government-allocated land would increase the proportion of land allocated to perennial crops by 16 percent. Given the importance of coffee in the Ethiopian economy, this is likely to have strong effects for overal growth.

Bibliography

Acemoglu, D., and S. Johnson. 2005. Unbundling Institutions. *Journal of Political Economy* 113, no. 5:949-995.

Acemoglu, D., S. Johnson, and J.A.Robinson. 2001. The Colonial Origins of Comparative Development: An Empirical Investigation. *American Economic Review*, 91, no.5:1369-1401.

Adal, Y. 2001, "Some queries about the debate on Land tenure in Ethiopia." in Mulat Demeke and Tassew w/ Hana eds. Proceedings on the Tenth Annual Conference on the Ethiopian Economy, EEA, 2001.

Alston, L. J., G. D. Libecap, R. Schneider. 1995. "Property Rights and the Preconditions for Markets: The Case of the Amazon Frontier." *Journal of Institutional and Theoretical Economics,* 1995, 151 (1), 89-107.

Atwood, D.A., 1990. "Land Registration in Africa: The Impact on Agricultural Production", *World Development*, 18(5), 659-671.

Banerjee, A.V., P.J.Getler, M.Ghatak. 2002. "Empowerment and Efficiency: Tenancy Reform in West Bengal. *Journal of Political Economy* 110, no.2:239-280

Benin, S. and Pender J. 2001. "Impacts of land redistribution on land management and productivity in the Ethiopian highlands", *Land Degradation and Development* 12:555-568.

Besley, T., 1995. Property Rights and Investment Incentives: Theory and Evidence from Ghana, *Journal of Political Economy*, 103(5), 903-937.

Binswanger, H., K.Deininger and G.Feder, 1995. "Power, Distortions, Revolt and Reform in Agricultural Land Relations", in J. Behrman and T.N.Srinivasan (eds.), Handbook of Development Economics, vol 3B, Amsterdam: Elsevier Science, North Holland.

Brandt, L., S. Rozelle, M. A. Turner, 2004. "Local Government Behavior and Property Right Formation in Rural China," *Journal of Institutional and Theoretical Economics.* vol. 127(4):627.

Brasselle, A.S., F. Gaspart, J. P. Platteau. 2002. "Land Tenure Security and Investment Incentives: Puzzling Evidence from Burkina Faso", *Journal of Development Economics*, 67, 373-418.

Bruce, J.W., and S.E. Migot-Adholla, eds. 1994. *Searching for Land Tenure Security in Africa.* Iowa: Kendall/Hunt

Carter, M. R. and P. Olinto, 2002, "Getting Institutions Right for Whom? Credit Constraints and the Impact of Property Rights on the Quantity and Composition of Investment." *American Journal of Agricultural Economics*.

Coase, R.M. 1960 "The Problem of Social Cost" Journal *of Law and Economics* 3: 1-44.

Collier, P. and J.W.Gunning, 1999, "Explaining African Economic Performance",*Journal of Economic Literature,* Vol.37 (1): 64-111.

Deininger, K. and S.Jin, , 2006, "Tenure Security and Land-Related Investment: Evidence from Ethiopia", Journal of the European Economics Association

Deininger, K., J. S. Chamorro.2006, "Investment and Income Effects of Land Regularization: The Case of Nicaragua." *Agricultural Economics*.

Deininger, K. and S. Jin. 2006. ".Land Rental Markets in the Process of Structural Transformation : Productivity and Equity Impacts in China." Mimeo. World Bank, Washington D.C.

Deininger, K. and S. Jin. 2006. "Tenure security and land-related investment: Evidence from Ethiopia". *European Economic Review* 50(5), pp. 1245-1277

Demsetz, H. 1967 "Toward a Theory of Property Rights" *American Economic Review* 57(2): 347-359.

Dercon, S., D.Ayalew and M.Gautam (2006), Land rights and investment in rural Ethiopia, mimeo.

Do, Q. and L. Iyer. 2004. "Land Titling and Rural Transition in Vietnam". Mimeo. Harvard Business Scool.

Feder, G. and Feeny, D., 1991. Land Tenure and Property Rights: Theory and Implications for Development Policy, *World Bank Economic Review*, 5, 135-153.

Feder, G. 1988. Land policies and farm productivity in Thailand. Baltimore and London: Johns Hopkins University Press for the World Bank..

Feder, G. and Onchan, T., 1987. Land Ownership Security and Farm Investment in Thailand, *American Agricultural Economics*, 69 (2), 311-320.

Federal Republic of Ethiopia, 2002. Poverty Reduction Strategy Paper, World Bank, Washington, D.C..

Field, E. and M. Torero. 2004. *Do Property Titles Increase Credit Access Among the Urban Poor? Evidence from a Nationwide Titling Programme.* Harvard University.

Gavian, S. and Ehui, S., 1999. Measuring the Production Efficiency of Alternative Land Tenure Contracts in A Mixed Crop-Livestock System in Ethiopia, *Agricultural Economics*, 20, 37-49.

Gebremedhin, B. and S.Swinton, 2001. "Investment in soil conservation in Northern Ethiopia: the role of tneure security and public programs", manuscript, Michigan State University.

Gebremehin, B, J.Pender and S.Ehui, 2003, "Land Tenure and Land Management in the Highlands of Northern Ethiopia", IFPRI, mimeo.

Glaeser, E. L., R. La Porta, F. Lopez-de-Silanes, and A. Shleifer. 2004. Do Institutions Cause Growth? *Journal of Economic Growth* 9, no. 3:271-303.

Greene, W. 2003, "Fixed Effects and Bias due to the Incidental Parameters Problem in the Tobit Model", Department of Economics, Stern School of Business, New York University, mimeographed.

Goldstein, M. and C. Udry. 2006. “The Profits of Power: Land Rights and Agricultural Investment in Ghana. Mimeo. Yale University.

Hall R.E., and C.I.Jones. 1999. “Why Do Some Counries Produce So Much More Output per Worker than Others?” *Quarterly Journal of Economics* 114, no.1:83-116

Hoben, A. 2000. "Ethiopain Rural Land Tenure Policy Revisited." presented at the Symposium for Reviewing Ethiopia's Economic Performance 1991-1991.Addis Ababa, 2000.

Holden, S. and Hailu Yohannes, 2002. “Land Redistribution, Tenure Insecurity, and Intensity of Production: A Study of Farm Households in Southern Ethiopia”, *Land Economics*, 78(4), 573-590.

Jacoby, H., G.Li and S.D.Rozelle, 2002, “Hazards of Expropriation: Tenure Insecurity and Investment in Rural China”, *American Economic Review*, 92(5):1420-1447, 2002.

Jagger, P. and J.Pender 2000, “The Role of Trees for Sustainable Management of Less-Favored Lands: the Case of Eucalyptus in Ethiopia”, Discussion Paper No.65, Washington D.C.: IFPRI.

Knack, S. and P. Keefer. 1995. “Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures”. *Economics and Politics* t, 207-227.

Lanjouw, J. O. and P. I. Levy. 1998."Untitled: A Study of Formal and Informal Property Rights in Urban Ecuador", Yale Economic Growth Center Discussion Paper: 788.

Rozelle, S., G. Li. 1998. “Village Leaders and Land-Rights Formation in China.” *The American Economic Review*, Papers and Proceedings of the Hundred and Tenth Annual Meeting of the American Economic Association. Voll 88, no. 2: 433-438.

Mauro, P. 1995. “Corruption and Growth”. *Quarterly Journal of Economics* 110, no.3:681-712

Migot-Adholla, S., P.Hazell, B.Barel and F.Place. 1991, “Indigenous Land Right Systems in Sub-Saharan Africa: A Constraint on Productivity?”, *World Bank Economic Review*, vol. 5, no. 1: 155-175.

North, D. C. 1981. *Structure and Change in Economic History.* New York: Norton & Co.

North, D.C. and B. Weingast. 1989. “Constitutions and Credible Commitments: The Evolution of the Institutions of Public Choice in 17th Century England”. *Journal of Economic History*. Vol. 49 no.4:803-832

Pande, R. and C. Udry. 2005. “Institutions and Development: A View from Below”, Mimeo. Yale University.

Pande, R. and C Udry (2006) “Institutions and Development: A View from Below” forthcoming in the Proceedings of the 9th World Congress of the Econometric Society, edited by R. Blundell, W. Newey, and T. Persson, Cambridge University Press 2006

Pender, J. and Fafchamps, M.. 2001. Land Lease Markets and Agricultural Efficiency in Ethiopia, August 2001, IFPRI and Oxford University, Mimeo.

Pinckney, T. C., P. K. Kimuyu. 1994. "Land Tenure Reform in East Africa: Good, Bad or Unimportant?" *Journal of African Economies*, 3 (1), 1-28.

Place, F., K. Otsuka. 2001. "Population, Tenure, and Natural Resource Management: The Case of Customary Land Area in Malawi." *Journal of Environmental Economics and Management*, 41 (1), 13-32.

Place, F. and Otsuka, K., 2002. Land Tenure Systems and Their Impacts on Agricultural Investments and Productivity in Uganda, *Journal of Development Studies*, 38(6), 105-128.

Platteau, J. P. 1996 "The Evolutionary Theory of Land Rights as Applied to Sub-Saharan Africa: A Critical Assessment." *Development and Change*, 27 (1), 29-86.

Rahmato, D**.**, 1984. *Agrarian Reform in Ethiopia*, Uppsala, SIAS.

Rahmato, Dessalegn. 2004 “A Review of Ethiopia’s Land Tenure System and New Policy Initiatives.” A report prepared for the World Bank, Addis Ababa,

Republic of Ethiopia. 2002. "Poverty Reduction Strategy Paper", Washington, DC, World Bank.

Shiferaw, B. and S.Holden, 1999, “Soil Erosion and Smallholders’ Conservation Decisions in the Highlands of Ethiopia”, *World Development*, 27(4), 739-752.

Sjaastad, E., D. W. Bromley. 1997. "Indigenous Land Rights in Sub-Saharan Africa: Appropriation, Security and Investment Demand." *World Development*, 25 (4), 549-562.

Smith, Adam. [1776] 1978. *Lectures on Jurisprudence.* Oxford: Oxford University Press.

Weder, B.. 1998, “Africa's Trade Gap: What should Africa do to promote exports? “, Workshop on "Asian and Africa in the Global Economy, United University Headquarters, Tokyo, Japan

World Bank, 2001. World Development Report 2000/2001: Attacking Poverty, Oxford University Press, New York.