Poor rural land property rights as a manifestation of urban bias

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Abstract

Though poor agricultural land property rights are typical constraints that many peasants in Sub-Saharan Africa (SSA) have faced since independence, little has been done to explain their persistence. I will first discuss the so called evolutionary theory of property right (ETPR), which stipulates that land property rights evolve as an efficient response to the economic environment. The empirical evidence suggests that the policies adopted by African regimes are actually in sharp contrast to what the ETPR predicts. I will then present a simple political economy model with three major assumptions that are commonly observed in SSA countries: (1) *de jure* political power belongs to the urban elite, (2) urban unrest is a source of threat to the elite and (3) a dual economy with urban and rural sector side by side. Major prediction of the model is that, in such political and economic environment, we observe poor land property rights if there is low level of urbanization and/or large gap between rural and urban wages, which actually are features of many SSA countries.

Key Words: Land property rights, Urban bias, Population pressure, Rural-urban migration

1 Introduction

Africa entered the 1960s and 1970s with great euphoria for prosperity as most of the countries got their independence from oppressive colonial rulers. However, the economic performance of much of the Sub-Saharan Africa (SSA) over the past half-century has been disappointing. The slow economic progress in SSA countries is mainly accounted for by the extremely low performance of agriculture. Agriculture is the dominant sector in the region contributing to the bulk of GDP and employment. Table (1) shows the GDP share of agriculture and growth performances in

SSA and rest of the countries during the period 1970-1990[1]. During the period, the average GDP share of agriculture in SSA countries is 34 percent where is the figure is less than half of SSA share for other regions (16 percent). On average, per capita agricultural output experienced a decline in SSA while the rest of the world experienced a positive growth. Given agriculture's large GDP share, the dismal performance of the agricultural sector led to a stagnant per capita. Since agriculture employs bulk of the population, the decline in agricultural per capita income translated into widespread poverty.

Table 1: Agriculture and GDP growth: 1970-1990

Region	Agriculture's GDP Share(%)	Agriculture growth (Percapita)	GDP growth (Percapita)	Agriculture employment share (%)
SSA	34.03	-0.01	0.58	73.93
Non SSA	15.92	1.21	1.82	34.95
All	22.20	0.82	1.42	47.53

Source: World Development Indicators

One of the main factors accounting for poor performance of the agricultural sector is argued to be inefficient rural land property rights [Goldstein and Udry, 2009]. Despite the importance of secure and transferable land property rights (henceforth LPR) for efficient utilization of land, many SSA countries are characterized by poor LPR. The so called evolutionary theory of property rights postulates that lack of private LPR in Africa is mainly caused by low population pressure. The evolutionary theory of property rights (ETPR) emphasizes the benefit from adopting private property rights (PPR) and the cost of defining and enforcing those rights; [Demsetz, 1967; Platteau, 1996]. According to the ETPR, implementation of PPR is a costly activity to the society. Such costs may include the negotiation effort from the early stage of defining what belongs to whom (or appropriating rights to specific individuals) to the required resources to protect those defined rights (such as policing, fencing, issuing certificates, etc). Such costs are weighed against the benefits arising from PPR such as increased investment on the property, optimal use (as opposed to over-use that may arise under communal ownership), reduced cost from conflict over the communal ownership, etc. When it comes to land, the ETPR predicts that private LPR is adopted by a society only if there is significant scarcity of land. In land abundant societies, incurring the cost to implement a private LPR is not a rational thing to do and societies will not adopt it. However, as population pressure increases and land becomes a relatively scarce property, the value of land increases and society will eventually adopt private LPR. The role of the state will be providing the legal and institutional infrastructure to provide private titles as the need for private LPR arises following increased population pressure.

The underlying assumption under the ETPR view is that societies choose policies based on efficiency considerations. In reality, however, policies are not always chosen based on efficiency considerations. Adopted policies mainly reflect relative power of

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[1]The averages are unweighted. Taking the weighted averages (by GDP and population size) doesn't change the overall picture.

different groups within the society. This is particularly true in African countries as almost all countries in the continent are ruled under dictatorships where interests of small powerful groups usually take precedence over efficiency considerations. In such context, the ETPR offers only a partial view of the political forces that shape LPR in Africa.

It will be shown that the political economy forces actually work against such efficiency considerations. In fact, the elite tends to refuse to allow peasants to have private LPR if population pressure is high despite doing so might be justifiable based on efficiency consideration. In contrast, the elite are more willing to allow private LPR when there is low population pressure in rural areas. The empirical evidence suggests that it was actually the case in the post-independence SSA.

The reason why the elite lack the incentive to provide private LPR is that they want the peasants to stick to their land. The elite are interested to restrict peasant mobility because freely mobile peasants could be a source of threat to their power. And land policy is used as a means to restrict peasant mobility. The elite's intention to restrict peasant mobility has to do with the concentration of political power by urban workers resulting in urban-biased policy. It has been well documented that urban residents in post-independence Africa have been politically more powerful compared to their peasant counterparts [see e.g. Bates, 1981; Braverman and Kanbur, 1987; Jones and Corbridge, 2010]. The free mobility of peasants is a cause of concern for the elite because a potentially large influx of peasant migrants to urban areas in search of better-paying jobs can lead to deteriorating living conditions in urban areas. Large migration of rural workers to urban areas will worsen the wage for urban workers due to the extra supply of labor. Such depression of wages in urban areas creates discontent among urban residents against the elite. The discontent with deteriorating living conditions in urban areas caused by wage depression (or unemployment) thus leads to urban unrest undermining the elite's hold on power. Bates (1981) has documented a number of cases where urban discontents following deteriorating living conditions were source of regime failures in a number of African countries. Aware of this threat, the elite want to systematically keep the peasants in rural areas. Land policy can be used for this purpose by denying peasants private ownership of their land. By denying peasants the right to sell their land, threatening to confiscate their land if the peasants do not cultivate it and redistributing the confiscated land to those remaining in rural areas, the elite can effectively keep peasants away from the cities. Those who want to move are discouraged to do so since they will lose their land while those remaining behind are encouraged to stay hoping that the confiscated land will soon be given to them.

This study contributes to a growing political economy literature trying to explain why leaders adopt bad policies that hinder economic development. Acemoglu and Robinson (2000) show how political losers may hinder reforms for economic development. Rowley (2000) argues that dominant elites in Africa deliberately propagated hostile institutions to development to extract private rents. The other strand of literature particularly focuses implication of urban-based ruling elite for economic development in poor countries. Lipton (1977) coined the term "urban bias" and provided extensive accounts of anti-agricultural policies both in terms of heavy agricultural taxation and under-provision of public goods to the rural poor. Bates

(1981) latter documents how African agriculture was brought to its knees through urban-biased policies. More recent works focusing on urban bias in terms of heavy agricultural taxes and under-provision of public goods to the rural population include Braverman and Kanbur (1987), Bezemer and Headey (2008), Majumdar et al. (2004) and Anderson et al. (2009). Jones and Corbridge (2010) provides a review of the literature on urban bias. The model in this paper extends this discussion on urban bias to the hitherto less noticed link between poor rural LPR and the politics dominated by urban interests.

The next section presents a simple model describing the above mechanism. Contrary to what the ETPR predicts, it is shown that high population pressure in rural areas discourages the elite from adopting private LPR. This is so because rural wages get lower as population pressure increases in rural areas due to land scarcity. Section III will discuss data and present some empirical evidence suggesting that the predictions discussed in the model do actually match the land policy in post-independence SSA countries. In section III, implication for land policy of productivity increases in rural sector and expanding urban sector is derived. It is shown that broader development outcomes in terms of increased investment in the urban sector and improved productivity in the agricultural sector encourage the elite to adopt private LPR for peasants. Section IV concludes.

2 The Model

2.1 The environment: the economy and politics

Consider a simple version of the dual economy as in Harris and Todaro (1970) – a less-developed economy with the rural (agricultural) and urban sector. Assume also that society is composed of two groups - the elite and the ordinary citizens. The elite own capital and have political power. The elite are the ones who set the land policy. A fraction of the ordinary citizens live in urban centers while others live in rural areas. The urban sector uses a fixed endowment of capital supplied by the elite and labor supplied by ordinary urban residents to produce output. The production function in the urban sector is given by

$$Y_u = f(K_u, L_u) \tag{1}$$

where Y_u, L_u and K_u are total output, labor and capital stock in the urban sector, respectively. The agricultural sector uses land and labor. Output in the agricultural sector is given by

$$Y_r = g(A_r, L_r) \tag{2}$$

where Y_r , L_r and A_r are total output, labor and land in the agricultural sector, respectively. We assume that f and g are constant returns to scale (CRS) technology and satisfy the usual concavity conditions: $f_L, g_L, f_{LK}, g_{LK} > 0; f_{LL}, f_{KK}, g_{LL}, g_{KK} < 0;$. The total labor endowment L is given by

$$L_u + L_r = L \tag{3}$$

As such, the elite want to maximize the return they get from employing cheap labor. However, pushing the urban wages too low may trigger urban unrest that may result in loss of power, leaving the elite expropriated. Hence, even if the elite want to get labor as cheap as possible, they also want to avoid unrest that may follow deteriorating living conditions for urban workers. Assume that likelihood of urban unrest, denoted by q, is a function of urban wage

$$q = q(w_u) \tag{4}$$

with $0 < q < 1, q' < 0, q'' > 0$. Unrest is more likely the lower is the urban wage. The convexity of q implies that the marginal impact of reduction in wages on the likelihood of unrest is higher the lower is the wage rate. This assumption makes sense since the welfare impact of a unit reduction in wage is likely to be higher for the poorer workers. As workers get poorer, a small reduction in their wages may threaten them to cut on their basic necessities fueling their discontent, which in turn increases the likelihood of unrest. A higher welfare impact of wage reduction for the poorer workers is consistent with the usual assumption of diminishing marginal utility of consumption.

The elite decide whether to allow peasants to have private LPR with the objective of maximizing their rent while taking the possibility of unrest triggered by low wages into account. The elite thus maximize the *expected* rent from their capital. The elite's expected return (objective function) , denoted by π, is given as

$$\pi = [1 - q(w_u)]rK + q(w_u)K \times 0 = [1 - q(w_u)]rK \tag{5}$$

With probability q, the elite will lose power due to unrest and will get zero while, with probability $1 - q(w_u)$, they stay on power and get rK.

2.2   Equilibrium wage and interest rate without migration

Consider the case where the elite forbid private ownership of rural land, and in doing so, that they effectively prohibit rural-urban migration since farmers lose their land when they move away from their plot. In such case, assuming that wages and interest rates are determined competitively, the urban wage, rural wage and interest rates are determined by their respective marginal productivity:

$$w_u = f_2(K_u, L_u) \tag{6}$$
$$w_r = g_2(A, L_r) \tag{7}$$
$$r = f_1(K_u, L_u) \tag{8}$$

Since rural-urban migration is prohibited by denying peasants private LPR, the wage rates in urban and rural areas will be independent of each other.

2.3   Equilibrium wage and interest rate with migration

Now consider the alternative scenario where the elite allow peasants to have private LPR. Peasants can hence sell their land and move to urban areas as long as they can

earn better wages in the urban sector. For peasants to be indifferent between staying in rural areas and urban sector, they have to earn the same amount by working in both sectors. Assuming that the urban wages are higher (which is typically the case in many developing countries), rural workers continue to migrate to urban centers until wages in the two sectors are equalized [Harris and Todaro, 1970]. Denoting the number of migrants by m, the new equilibrium wage with migration satisfies

$$w_u^m = w_r^m \implies f_2(K_u, L_u + m) = g_2(A, L_r - m) \tag{9}$$

The new equilibrium interest rate, denoted by r^m, is given by

$$r^m = f_1(K_u, L_u + m) \tag{10}$$

where the superscript m denotes equilibrium wages with migration. The new interest rate r^m is higher than the equilibrium interest rate without migration r since $f_{12} > 0$.

2.4   Politically optimum land policy

The next question is that when do the elite find it optimal to allow peasants to have private LPR. The elite on the one hand want to get as much labor as possible to maximize the rent from their capital. On the other hand, they want to minimize the threat of unrest due to wage depression in the urban sector. The elite's choice will then depend on the number of peasants that migrate to urban centers. As the number of migrants increases, the benefit from having lower wages will be outweighed by the increased risk of unrest caused by deteriorating living conditions for urban workers. As long as the number of migrant workers doesn't exceed a certain critical level, the elite will be willing to allow peasants to have private LPR since the benefit from increased capital rent earnings is bigger compared to the risk of unrest caused by lower wages.

The number of migrants m in turn depends on, among other things, the population pressure in the rural sector (defined as the ratio of rural population to agricultural land, L_r/A). The higher is the population pressure, the larger will be m. If rural population pressure is large enough to trigger influx of migrants that is larger than what the elite want, the elite will not allow peasants to have private LPR. Rent is always increasing with increase in urban labor (since $f_{12} > 0$). However, so does the risk of unrest. As urban wage (urban labor) decreases (increases), the risk of unrest increases.

Figure 1 combines the two effects and shows the relationship between the expected return from capital and size of urban labor. For a sufficiently small size of urban labor, as we increase number of urban workers, the expected return first increases, then reaches maximum and starts to fall. The assumption here is that $[1 - q(w_u)]r$ has a unique maximum with respect to size of urban labor. Intuitively, for a sufficiently low level of urban labor, the threat of urban unrest is less concerning compared to the gain from having the extra labor in terms of higher return on capital (or lower wage). However, as size of urban worker increases and living conditions for workers deteriorate, the treat of urban unrest outweighs the gain from having extra workers in the city centers.

In Figure 1, l^* denotes the ideal size of urban workers that the elite want. It corresponds to the maximum expected rent the elite can get, R^*. The elite may want to increase the number of urban workers if and only if the actual number of urban workers is below l^*. Suppose $L_u = l'$, which is greater than l^*. Then the elite do want to relocate some of the urban workers to rural areas. The uneasiness with presence of large number of poor and unemployed urban residents actually has led some leaders in developing countries to relocate some of the urban residents to rural areas. A recent example is the measure by Zimbabwean president Robert Mugabe to relocate the large mass of urban poor in the Harare to places outside the city under the disguise of "keeping the city's standard". It was though the repeated protest by the urban poor following the economic meltdown that was the primary motive behind his measure.
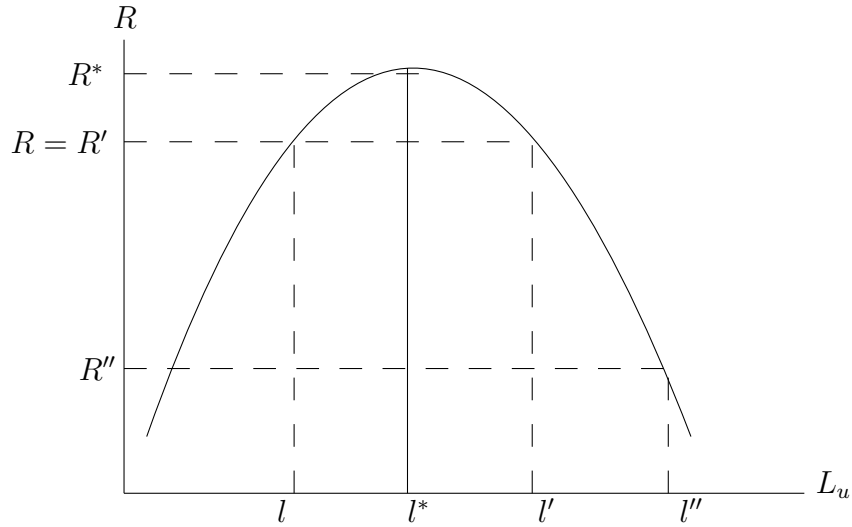

Figure 1: Expected return on capital and size of urban population

If $L_u < l^*$, the elite would like to increase the number of urban workers. However, they may not yet be willing to allow peasants to have private LPR if this results in too much migration. For example, if the current level of urban labor equals l, the elite want to allow private LPR if the number of peasant migrants m doesn't exceed $l' - l$. If $m < l' - l$, the new expected rent for the elite from allowing private LPR is greater than the expected rent from not allowing, which is R. If $m = l' - l$, the expected return is R', same as R. And the elite do not oppose private LPR. However, if $m > l' - l$, say $m = l'' - l$, the new expected rent R'' is lower than what the elite can get by not allowing private LPR (which is R). Hence, the elite do not allow private LPR. Note that the elite still want to have more urban workers, but allowing private LPR will result in too many urban workers that they avoid adopting it. How large m is depends on, among other things, the population pressure in rural areas. If rural population pressure is sufficiently low, rural wages will be higher to contain migration within the limit of what the elite want. However, if the pressure is too high, m will be too large compared to what the elite want. Denote expected rent under the two policy choices by $R(P)$ and $R(NP)$ where P stands for allowing private LPR while NP for not allowing, and define $\Delta R \equiv R(P) - R(NP)$ (i.e. the

expected net gain from allowing private LPR). Assuming that a sufficiently small percentage of the population lives in urban centers (which is true in almost all post-independence SSA countries), we will have the following testable prediction:

$$\Delta R \geq 0 \text{ if } \frac{L_r}{A} \geq a, \text{ for some } a > 0 \tag{11}$$

$$\Delta R < 0 \text{ otherwise.} \tag{12}$$

Implication of the above prediction is that elite that allow private LPR for peasants should in general face a lower level of rural population pressure. The above prediction is in complete contrast to what the ETPR predicts – private LPR will be adopted when population pressure increases, land becomes more scarce and hence more valuable property. The following section presents empirical evidence suggesting that this was actually the case in post-independence SSA.

3 A Look at the Empirics

I have coded land laws of 41 SSA countries to identify countries that officially allowed private LPR for peasants and countries that didn't. Though the official polices may not reflect the actual property right regimes, they can reasonably used as an indicator for the elite's commitment to private LPR. A review of land laws for the countries studied in this paper can be found from a document produced in *Country Profile of Land Tenure: Africa* (1996). Most of the countries adopted their land policy during the 1960s and 1970s soon after independence. Out of those 41 countries, about a quarter of them (10 countries) allowed private LPR while the rest did not.

Data on agricultural land and rural population is available from FAO. For each country, I have used observations for the year the country adopted its land policy. Figure 2 presents the cumulative distribution of population pressure in rural areas (the number of rural population per hectare of agricultural land) by the two regimes – regimes that allowed private LPR and regimes that did not. As we see from the graph, regimes that allowed private LPR do have low population pressure (concentrated toward zero) while the regimes that didn't allow tend to have higher population pressure. In private LPR regimes, the maximum rural population pressure is 0.64 while it is about 2.66 in non-private LPR regimes. And for 90 percent of the private LPR regimes, the population pressure is below 0.5. Less than 60 percent of the non-private LPR regimes have population pressure below 0.5. This clearly suggests that land-abundant SSA regimes have shown more tendency to allow peasants to have private LPR. In regimes that allowed private LPR, the average number of rural population per hectare is 0.26, whereas it is more than twice (i.e. 0.61 people per hectare) in regimes that didn't allow private LPR.

Table 2 presents a regression analysis to test whether the above observation is robust under alternative specifications. The dependent variable is a dummy taking 0 for the regime that doesn't allow private LPR and 1 for the one that allows.

Column I presents the estimated coefficient considering the agricultural population pressure as the only right-hand-side (RHS) variable. We see that agricultural population pressure has a significant negative effect on the likelihood that regimes
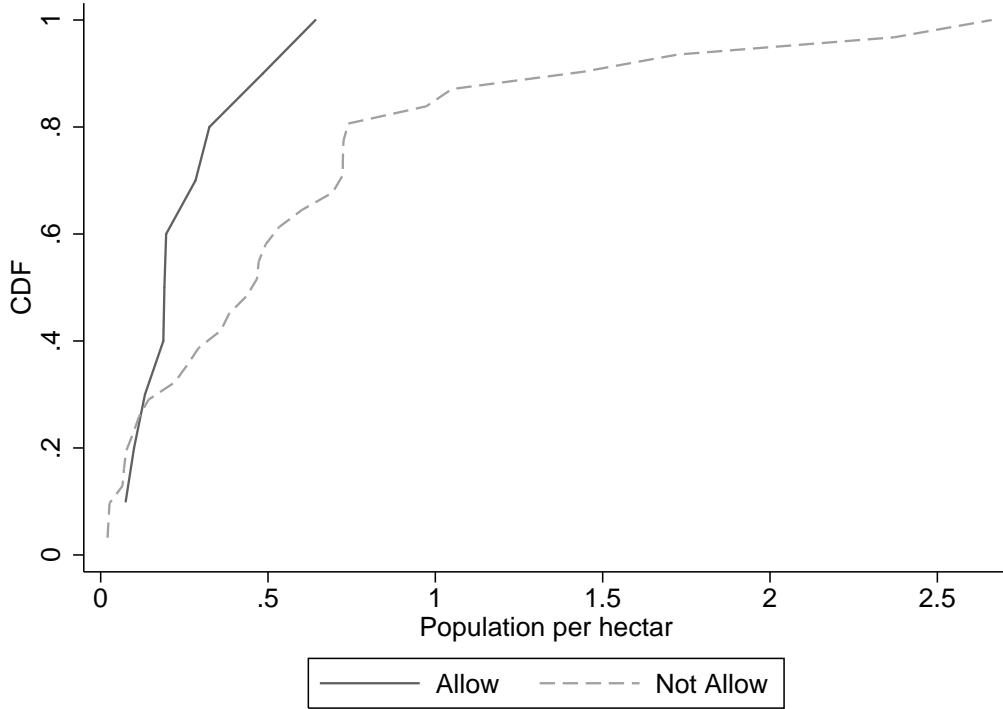
Figure 2: CDF of rural population pressure under the two regimes

allow peasants to have private LPR. Robust standard errors are reported in parenthesis. Other factors may also affect regimes policy choices. Their choice might, for example, be affected by the level of economic development in the country. To control for such effect, Column II presents regression estimates with log GDP as an additional RHS variable. The estimated coefficient for population pressure is still significant. In order to allow for colonial legacies on the regimes policies, I also included dummy for British and French colony. The result is reported in column III. The estimated coefficient on rural population pressure doesn't change at all, and it is significant. In general, French colonies allowed private LPR more than their British counterpart. Column IV includes dummies for Eastern and Western African countries to allow for regional factors that might have affected land policies. The coefficient for agricultural population pressure basically remains unchanged. The general pattern we observe in the data suggests that land policies in post-independence SSA countries did not follow the pattern predicted by ETPR. The policies rather seem to follow the predictions from the model discussed above.

4 Implication of non-farm investment and agricultural productivity for land policy

The above theoretical model can be used to derive various comparative statics to study the conditions under which the elite will be willing to allow private LPR. A relevant condition is the level of industrialization which is captured by K in the

Table 2: Populatoin Pressure and Land Policy: Regression Results

	(A)	(B)	(C)	(D)
Agricultural population pressure	-0.19***	-0.16**	-0.15**	-0.16*
	(0.07)	(0.07)	(0.07)	(0.08)
Log GDP		0.12	0.09	0.09
		(0.11)	(0.11)	(0.12)
Dummy for British colony			-0.20	-0.20
			(0.14)	(0.14)
Dummy for French colony			0.14	0.17
			(0.20)	(0.22)
Dummy for East Africa				0.03
				(0.21)
Dummy for West Africa				-0.04
				(0.17)
Constant	0.34***	-0.52	-0.28	-0.29
	(0.09)	(0.80)	(0.79)	(0.90)
Observations	41	41	41	41
R-Square	0.07	0.09	0.19	0.19

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

model. Increased investment in the urban sector enhances the capacity of city centers to absorb more labor without substantial reduction in urban wages. In terms our model, such investment implies higher K. Figure (3) illustrates the impact of urban investment on the elite's return. The increase in K will shift the return curve to the right. Denoting the initial level of urban labor size by l, the elite now are willing to accommodate a larger number of migrants $(l'' - l)$ compared to the case with lower K, where the elite is willing to accommodate only $l' - l$. The implication is that expanding activities in the urban sector can have a positive role for agricultural development by providing a better incentive for regimes to allow LPR. Regimes once afraid of depressed wage in urban areas will no longer face such threat as investment in the urban sector increases. The same holds true for improvement in agricultural productivity, albeit with a different mechanism. Improved agricultural productivity increases rural wages. This in turn decreases the number of migrants to urban centers who leave agricultural employment in search of better paying jobs in the urban sector. Knowing that they will not face a large number of migrant workers flooding the city centers, the elite are now more willing to allow for private LPR. Improvement in agricultural productivity hence has similar effect as decrease in rural population pressure.

These two implications are important for policy makers that promote improved property rights for peasants throughout Africa. The World Bank has been engaged
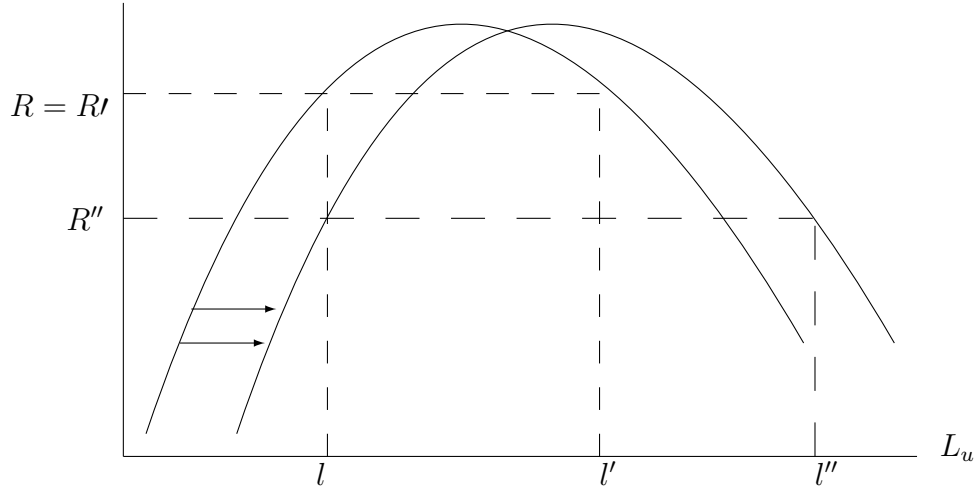
Figure 3: Urban investment and LPR

and spent a large sum of money during the past decade promoting better LPR for peasants. Such policy should be integrated with urban development and other agricultural programs that improve rural wages so as to encourage African elite to adopt private LPR for their vast majority of peasants.

5 Conclusion

This paper has attempted to further our understanding on the political economy forces that has shaped land policies in SSA. The ETPR provides only a partial view of the political economy forces that shaped African land policy. Taking two common features of most African states as the main assumption – dual nature of the economy and concentration of political power in urban centers – the theory presented here shows that land policy arises as another manifestation of urban bias. The empirical evidence is in contrast to what the ETPR predicts. It rather matched the prediction presented by the theory in this paper. The comparative statics show that advocacy works (by institutions such as the World Bank) that encourage African leaders to adopt private LPR should be integrated with other development programs such as increased employment opportunities in urban areas and improved agricultural productivity. Otherwise, leaders are likely to remain reluctant to adopt private LPR.

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