Reverse tenancy and distress contracting among rural farming households in Malawi

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Abstract

This study analyzes factors associated with reverse tenancy and distress contracting in the land rental market for rural households in Malawi. Land rental markets transfer land from the land rich but resource poor to the land poor but wealthy households. It is also a remedy to the problem of land scarcity due to the soaring population growth and the resultant high pressure on farm land. We employed the binary probit model for participation, and the censored (Tobit) model for the degree of participation for both tenants and landlords to pin down socio-economic factors affecting reverse tenancy and distress contracting in the land rental market using 450 randomly sampled households across six districts. The study revealed that fixed rental contracts dominated while sharecropping was rare. Reverse tenancy contracts where tenants are richer than landlords in non-land assets were common. Own land and non-land resources (family labor, assets, tropical livestock units and others), and household poor health condition were found to be significantly associated with land market participation and the degree of participation.

Keywords: Land market; Resource variation; Fixed rental; Share cropping; Fixed rental; reverse tenancy; Malawi

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1. Introduction

Land is one of the scarce natural resources that remains unequally distributed in Malawi. With rapid population growth resulting in increased land fragmentation, land holding is becoming smaller that it is unable to sustain the households adequately. World Bank (2003) noted that majority of the rural population produces 84% of total agricultural output. This is from 1.8 to 2 million smallholder farmers who on average own only 1 hectare of land. The per capita land holdings have declined from 1.53 hectares in 1968 to 0.8 hectares in 2000 (Government of Malawi, 2001).

Estimates by the Malawi's Ministry of Agriculture and Food Security indicate that 55% of households have an average land holding size of less than 1 hectare (Ministry of Agriculture, 2003). This undermines the desire to invest on the land for improved agricultural income, and adoption of new farm technologies. The Ministry advocates for a minimum of at least 1.5 Ha of land to attain minimum levels of sustenance throughout the year. One of the major constraining factors to increase agricultural productivity and viability is thus insufficient land required for expansion. Despite the constraint, land plays a critical role in the livelihoods of Malawians such that near landlessness has been linked to poverty.

Pressure on land is severe in densely populated areas of the southern region of Malawi due to increased migration from the land scarce areas in Mulanje and Thyolo to less densely populated districts of Mangochi and Mwanza. Land pressure is also becoming acute in the central region where the capital city is situated (Greenwell, 2007).With growing population pressure on land, there is a need to develop an alternative means to improve land access in order to increase production and productivity at household level. Land rental market would be one alternative, which is not well developed in Malawi. Land rental market is an important institution in agriculture. Inter household resource exchange fostered in social networks and association membership provides an opportunity to combine labor during farmland preparations and harvest seasons among rural dwellers. This kind of resource sharing, to certain extent, reflects in plots of land in Malawi where the relatively land rich households lend for free to the neighbor and/or relatives who need to produce food for home consumption.

In Malawi, land renting and borrowing is practiced but not legally recognized (GoM, MGDS, 2005). Malawi is one of the countries where land market remains inactive. The limited land market prevails itself in fixed rental form followed by borrowing contracts. Crop sharing, which dominates the Eastern part of Africa like Ethiopia, and sales market (common in Uganda) are scarcely observed or lacking in Malawi. This is mainly due to higher transaction costs, limited household resources required to contribute in crop sharing contracts and/or legal prohibition in land sales as land use and access is closely monitored by the village chiefs in rural parts of the country (FGD report).

The land rental market has got due attention in agriculture based economies due to the issues of equity, production, and productivity associated to it. This factor market is found to have prominent feature in transferring land from less productive households constrained by socio-economic factors to more productive households as evidenced by Holden *et. al*., Deininger, and Ghebru (2007). Even with major imperfections in credits, labor, and insurance markets, land renting provides asset of benefits to the poor people-by temporarily renting out land they can get additional income without losing their rights to their land. As

stated by Ballestreso and Bresciani (2008) that "Transfer of land through rental provides access to land to those with high agriculture ability but own little land or no land. Thus the land rental market allows for more efficient farm size and provides an opportunity for the landless to climb up the agricultural ladder." Moreover, as the off-farm economy develops, the rental market provides mechanisms for farm operations without change in land ownership.

For the benefit of appropriate policy formulation, knowledge in both distribution of land, and determinants of land rental market would guide policy makers in approximating implications of skewed land holdings on the economic performance across the agrarian community. It would also be the rationale for redistribution or designing market oriented land policy regulations which facilitate the opportunity to transfer land from land rich but less capable to the land poor and/or capable to cultivate households. This in turn has a welfare effect by reducing poverty at household level in particular and the economy wide in general.

Using both Statistical tools and Econometric estimation this study aimed at establishing implications of the land market on households' resource variation. The study sought to address two key questions:

- **Q1:** Does land renting improve Food Security of the land rental participants? It also highlights
- **Q2:** What are the determinants of land renting in Malawi?

This section is followed by a brief background to the study while section three reviews related literature. The Methodology and Data requirements of the study are discussed in section four. Section five presents results and discussions on the findings of the study and the last section concludes the paper.

2. Background and review

Like most sub-Sahara African countries**,** Malawi's economy is highly reliant on agriculture which accounts for about 90% of its export earnings and 45% of its Gross Domestic Product. The sector employs about 85% of labor force (GoM, 2005). This explains the importance of agricultural land to the economy of this country. However, it is constrained by limited resources and rapidly expanding population. All Malawians rely upon access to land in one way or another. The country has a diversity of cultures, and major ethnic groups which have their own rules for the transfer of land to persons and generations. For all groups, land is generally regarded as the main basis for social security (Gondwe and Moyo, 2008).

In Malawi different land allocation systems have been developed to supply the population with land. The basic objective is to satisfy growing population with enough space for food production and shelter (Ericsson, 1999). The country's process of economic growth is one of continuous structural transformation channeled through various linkages between the individual sectors of the domestic economy. Crucial for this process and poverty alleviation are markets that operate efficiently to accommodate decisions within and across households and sectors that lead to efficient use of inputs and outputs of agriculture.

According to the Government of Malawi, it allows all customary land to be registered and protected by law against arbitrary conversion to public land. All customary land holders, defined to include entire

communities, families or individuals are encouraged to register their holdings as private customary states with land tenure rights that preserve the advantages of customary ownership and ensures security of tenure. According to Government of Malawi (2002) "Private lease hold estates are created as subsidiary interests out of any private land, including registered customary estates without relinquishing the ownership of the customary landholder. This provision allows traditional leaders, family heads and individual holders of registered customary land to grant leases." That is, land under the customary tenure is considered to belong to a village, and individuals in the community who have the right to cultivate the land and use it, and to dispose of it with the limits set up by the customary law of the tribe or clan. In this case, therefore, the individual does own the land with limited right when comes it to exchange of land. The chiefs, sub-chiefs, and village head men protect the customary land against outsiders (Nathole, 1985). This institutional set up has limited optimal land market that may shift land towards more productive households.

2.1. The Economics of land rental markets

The value of land is derived from resources existing in/on it including its physical structure, location, size and quality, and the summation of their individual values calculated on monetary basis. This is often based on the future variations of these components. In this paper, the term "rent" should strictly mean the payment for the use of farm land. David Ricardo (1809) is credited with the first clear and comprehensive analysis of differential land rent and the associated economic relationships.

Renting of land appears to be more widespread and may be the most important form of land exchange. In Europe and Central Asia (ECA), land renting has been expanding in terms of participation and scale of participation. For example, in Bulgaria in 2003, only 3% of rural households had sold agricultural land, while 80% of them were renting land in or out. Ad hoc evidence also indicates that land rental plays an important role in the consolidation of farms (Swinnen *et al.*, 2006). Many literatures confirm that rental markets can be an effective instrument to transfer land to the most efficient users and stimulate investment, if a number of conditions are fulfilled, in particular, sufficient tenure security(Skoufias, 1995; Holden *et al.*, 2007; 2007; Tikabo *et al.*, 2008; Ballesteros and Bresciani, 2008; Holden *et al.*, 2009). Among other factors, this has to go with the type of rental contracts used and the regulations of the tenure system and lower transaction costs. In addition to efficiency effects, rental markets may also have positive equity impacts.

The land rental market is also widely practiced in Philippine agriculture. The study by Ballesteros *et.al.* (2008) describes rental activities in Philippine agriculture whereby both sharecropped and fixed rent arrangements represent one fourth of the country's cultivated areas. The same study states that "Share cropping is the preferred contract in all regions with an average of 80% of total rented area under tenancy. It appears that corporate farms play a major role in the market." Where they dominate, rental market is active and lease contacts are more common. Moreover, the study also identified that credit access and land endowment plays a role in determining the probability of land market participation (*ibid,* 2008).

Reviews of land market in India verify that the market is affected by certain factors and found to be inefficient in adjusting the desired cultivable area by the household. Skoufias (1995) using panel data from six villages in India established that higher average female wage rate and large farm size holdings

significantly reduce the probability of leasing in land while number of children in the household and higher values of farming implements have negative signs on the supply side of the market (*ibid*).

Studies have been conducted in different countries of Africa with different motives on the land rental markets, including its determinants, land reform and tenure security and their implication for access to land, land investment, equity and efficiency aspect of the activity, impact of certain institutional changes on the market participation, etc. For instance, in the highlands of Eretria, endowments of the non-land factors like male labor force, oxen, and farm experience are found to be greatly affecting the probability of participation as well as the degree of participation in the land rental market. Households poor in these factors tended to rent out land while households rich in these non-land factors tended to rent in land (Tikabo and Holden, 2004). Shiferaw *et al.*, (2001) reports that land rental market in Ethiopia increases efficiencies in creating additional wealth if it contributes to use of more purchased inputs, improved labor mobility/participation in non-farm activities and high participation in extension package programs.

Holden *et al.*, (2010) reported that 'Effects on the allocative efficiency of the land rental market of the low-cost approach to land registration and certification of restricted property rights implemented in Tigray region, Ethiopia." The study found that low cost land certification promoted participation of female landlords to the rental market relative to male counterparts. This was mainly due to the fact that female headed households are constrained with male labor force in order to till the land and had been tenure insecure because of their lower bargaining power before the official use right certification.

The land market, in the form of sales and rental is also relevant in the Ugandan and Kenyan rural economies. In Uganda, Dininger and Mpunga (2002), using panel data (1999-2000) assessed the determinants of land rental participation and systematic differences between sales and rental markets. The study identified, among others, that young and better educated households are more likely to purchase land, and it was more difficult for the landless, those with few assets, and for households headed by widows to acquire land through purchase markets in Uganda. With regards to the land rental, it was found that rental markets are more effective than sales markets in transferring land to larger households with younger heads, thus providing an opportunity to employ relatively abundant family labor (*ibid*, 2002). Accordingly, it is much easier for landless households to gain access to land through rental than through sales markets. The report came up with the fact that land rental market improved productivity in a pro-poor way and helped to provide land access to those in need, especially landless households.

On the other hand, based on cross-sectional household data from two different places of Kenya, Yamano *et.al*, (2005) established that those households with greater number of women, educated, and asset wealth purchase land. In addition, number of oxen, and number of adult women are found to be positively related to participation in the market whereas the number of adult men is positively related to the size of rented in land. This study marked the importance of land sales to those unable to inherit land though not used for minor adjustment of landholdings. As such, rental market is tended to be used by the participants for short-term adjustments in factor ratios. The paper indicated the existence of inverse farm size- productivity relation for which it concludes as a base may be, potential landlords are reluctant to rent out land for fear of losing it.

This study focused on the implications of the land market on household resource variation in some districts of Malawi. The study uses secondary household data collected during 2008/2009. We verify that this study is different in its content and objectives from those that have been reviewed. We are also not aware of any more studies so far in Malawi with the same objectives, and therefore, claim that this paper is our original output by its nature.

3. Methodology and data requirements

3.1. Theoretical model

This paper examined the land rental market participation of households based on the theoretical model developed by Bliss and Stern (1982) and Skoufias (1995). These models have focused on the extent to which land rented in or out by households adjusts to ensure that operational land holding is adjusted towards the desired land area. Bliss and Stern (1982) studied the land rental market in Planpur village in India using a theoretical model to assess whether the land adjustment in the rental market was complete as desired or less than desired due to transaction cost in the market. The model by Bliss and Stern (1982) depicted that the rationale of land rent can be explained by imperfections in the rural labor and credit markets. These imperfections arise from indivisibility of labor, lack of off-farm opportunities and credit constraints in the agricultural sector.

This model found to be important as a theoretical baseline in order to identify factors associated to land markets operation for adjusting the Desired Cultivated Area (DCA) in imperfect non land market situations among households. The functional forms of the model are described below.

Expression of the relationship is given as follows;

Assuming the absence of transaction cost in the land rental market, the household obtains the notional demand for net land leased in, denoted by A^*. However, in the presence of transaction cost the actual amount leased-in would be A. The functional relationship is therefore specified as in (i).

 (i)

$$A = h(A^*)$$

 where: h is the adjustment function which is affected by the presence of transaction cost.

Given that A^* is unobservable, it is assumed that households have a desired cultivated area (DCA) which is associated to agricultural ability, i.e., family labor $(\overline{L})$, non land assets (A^{no}) and own land $(\overline{A})$ size. DCA is increasing in both $\overline{L}$ and A^{no} (real value and tropical livestock units).

 (ii)

$$A^i = DCA - Land\ endowment$$

$$\overline{A}f(\overline{L},A^{no}) - \overline{A} = Land\ leased\ in - land\ leased\ out = NLI$$

DCA can depend on other variables aside from labor and other household assets. Like off-farm employment, and household characteristics (age, education, sex) and agro-ecological factors. Combining (i) and (ii) using first order Taylor series expansion yields the linear equation (iii):

(iii)

$$A_i^i = c_o + h'f_1\overline{L}i + h'f_2 A_i^{no} - h'\overline{A}_i = c_o + c_1\overline{L}_i + c_2 A_i^{no} + c_3\overline{A}_i$$

where, c_o=constant term, $h' = \partial h/\partial A^*$, the slope of adjustment function.

And, $f_1 = \frac{\partial f}{\partial Ai^{no}}$ *and* $f_2 = \frac{\partial f}{\partial \overline{L}i}$, which imply marginal change in adjustment(DCA) with respect to labor and other household assets.

If adjustment is done perfectly, the coefficient of own land ($\overline{A}$) is equal to one. i.e., if $h'=1\ or\ c_3 = -1$, the actual cultivated area, A is equal to the DCA and the transactional costs in the land rental market are insignificant. On the other hand, if it is significantly different from -1, it is a sign of significant non-linear transaction costs. This theoretical postulate is based on the assumption that both sides of the market are opted to adjust operational holding relative to their non land farm inputs. However, this may not hold particularly from the landlord side in case when land rental is made in response to shocks in the absence of substitutes like credit and insurance markets. In such situations, household do rent out not for farm resource adjustment rather to overcome immediate cash requirements under fixed contract arrangement with more likely lower bargaining power to wards actual rental value.

3.2. Hypotheses

Based on the functional forms presented above, two hypotheses were postulated:

- **H₁:** Better off households would choose to rent in land and may produce more output that would influence their food reserve and agricultural income, while households poor in assets but own more land relative to their labor capacity would rent out their excess land that they could not self-cultivate;

This is based on reviews in other countries that female headed households are constrained in family labor, have less access to credits for immediate cash needs due to poor social relations, and are vulnerable to diseases to self cultivate the land relative to male headed households.

- **H₂.** There exist stronger reverse tenancy contract in rural households of Malawi.

The hypothesis is developed with a presumption that non land resource rich households are better off to employ/purchase farm inputs in order to cultivate extra land than their counter parts who are capital constrained to do so. Hence, land rental direction is from land rich but asset poor to wealthier households.

Hypotheses H_1 and H_2 were tested using binary Probit *(iv)* and censored Tobit *(v)* models respectively. Binary Probit (latent) model in the manner discussed in (Green, 2003) is built for land market participation as:

(iv)

$$A^i* = \beta_o + \sum_{i=1}^{k} \beta_i X_i + \xi_i$$

where, β_o is constant, β's are coefficients, X is vector of explanatory variables, ξ_i is the random disturbance term. The probability model for participation is described as;

$A^i = \begin{cases} 1 \text{ if } A^{i*} > 0, & \text{Participating as Tenant or Landlord} \\ 0 \text{ if } A^{i*} <= 0, & \text{No Participation either as tenant or landlord} \end{cases}$

Models for both tenants and landlords are separately estimated against the non participants. The log-likelihood function and its derivation can be obtained and optimization can be done based on Green (Green, 2003). The explanatory variables used in each model are presented in appendix-1.

The degree of participation in terms of NLI would help to understand the extent of adjustment subsequent to participation decision. This variable is considered as positive for tenants but negative for landlord households. Referring to Wooldridge (2009), we have derived Censored Tobit model from equation (*iv*) and it is set up as follows:

(v)

$$A^i_i = \max(0, c_o + c_1 \overline{L}_i + c_2 A^{no} + c_4 R^s + c_5 S_i + c6 Z^h - c_3 \overline{A}_i + \eta_i)$$
$$\overline{L}, A^{no}$$

Assuming $\eta_i \mid \overline{L}_i, R, A^{no}, Z^h, \overline{A}_i \sim iid\,(0, \sigma^2)$

Unlike Linear Probability Model, Tobit model results in non-negative predicted value for the dependent variable and have sensible partial effects for the range of explanatory variables (Madalla, 1983). That is why tobit (censored) model is preferred for this estimation

Hypothesis (H_3) is tested using household assets (real asset values deflated using 2006 price, tropical livestock units and family labor) as proxies for wealth in the two models.

4. Results and discussions

Table 1 presents a comparative assessment on different assets among tenants, landlords, and non-participants in the six districts. The assets considered were own land size (ownland), (NLI), tropical livestock units (tlunits), household labor (hhlabour) total maize produce in 2009 (totmaizpro09), and real value of assets (realvalue). Resource variations among households across districts were identified through statistical tests of significance.

Table 1. Variations in Resource Endowment among Households and Across Districts

		Tenants			Nonparticipants			Land lords		
Southern										
District	**Variable**	**Mean**	**N**	**se(mean)**	**Mean**	**N**	**se(mean)**	**mean**	**N**	**se(mean)**
Thyolo	Own land size(Ha)	0.51	17	0.17	0.64	126	0.05	0.94	5	0.24
	Net Land leased	0.16	17	0.037	0	126	0	-0.15	5	0.03
	Rent in land(1=yes0=no)	1	17	0	0	126	0	1	5	0
	Tropical livestock unit	1.21	17	0.23	0.78	123	0.07	0.57	5	0.37
	Household labor adult equiva.	3.45	17	0.33	2.9	126	0.11	3.3	5	0.32
	Total maize produce in 09	1135.3	17	207.1	978.5	126	111.5	496	5	127.1
	Real valued Asset(1000Mkw)	11.5	17	8.45	5.02	126	1.98	1.21	5	0.74
Zomba	Own land size(Ha)	0.79	25	0.14	0.89	204	0.037	0.83	10	0.12
	Net Land leased(Ha)	0.57	25	0.1	0	214	0	-0.22	10	0.045
	Rent in land(1=yes0=no)	1	26	0	0	214	0	1	10	0
	Tropical livestock unit	1.95	26	0.37	1.28	210	0.1	0.67	10	0.14
	Household labor adult equiva.	3.01	26	0.2	2.98	210	0.09	2.49	10	0.43
	Total maize produce in 09	1835.4	13	461.9	752.4	136	95.76	202	5	31.7
	Real valued Asset(1000Mkw)	4.89	26	0.9	2.82	210	0.41	1.65	10	0.97
Chiradzulu	Own land size(Ha)	0.67	11	0.13	0.76	94	0.045	0.42	1	.
	Net Land leased(Ha)	0.18	11	0.03	0	98	0	-0.32	1	.
	Rent in land (1=yes0=no)	1	11	0	0	98	0	1	1	.
	Tropical livestock unit	2.1	10	0.53	1.2	88	0.13	0.59	1	.
	Household labor	3.91	11	0.42	3.23	94	0.14	2.8	1	.
	Total maize produce in 09	960.5	11	180.9	575.9	94	43.17	400	1	.
	Real valued Asset(1000Mkw)	0	11	0	0	94	0	0	1	.
Machinga	Own land size(Ha)	0.69	13	0.21	1.25	132	0.05	1.32	13	0.15
	Net Land leased(Ha)	0.35	13	0.065	0	132	0	-0.40	13	0.09
	Rent in land(1=yes0=no)	1	13	0	0	132	0	1	13	0
	Tropical livestock unit	2.16	13	0.99	1.87	132	0.24	1.51	13	0.76
	Household labor	3.63	13	0.43	3.2	132	0.13	2.8	13	0.36
	Total maize produce in 09	350	6	108.8	547.2	73	65.3	337.8	9	95
	Real valued Asset(1000Mkw)	3.23	13	2.65	2.85	132	0.56	2.29	13	1.02
Central										
Kasungu	Own land size(Ha)	1.13	27	0.10	2.08	294	0.12	1.78	20	0.24
	Net Land leased(Ha)	0.42	27	0.06	0	297	0	-0.37	20	0.098
	Rent in(1=yes0=no)	1	27	0	0	297	0	1	20	0
	Tropical livestock unit	3.6	27	0.72	2.28	293	0.24	1.33	20	0.41
	Household labor	3.53	27	0.3	3.58	297	0.09	3.63	20	0.34
	totmaizproduce09	.	0	.	.	0	.	.	0	.
	Real valued	7.54	27	1.74	5.27	297	0.64	4.97	20	1.46

	Asset(1000Mkw)								
Lilongwe	Own land size(Ha)	0.86	24	0.13	1.043	161	0.05	0.92	11	0.2
	Net Land leased(Ha)	0.32	24	0.05	0	161	0	-0.45	11	0.07
	Rent in(1=yes0=no)	1	24	0	0	161	0	1	11	0
	Tropical livestock unit	1.77	24	0.44	1.46	161	0.16	0.98	11	0.56
	Household labor	3.27	24	0.2	3.05	161	0.08	2.6	11	0.29
	totmaizproduce09	1254.6	24	247.2	747.4	160	63.22	605	10	145.38
	Real valued Asset(1000Mkw)	7.45	24	3.66	5.76	161	1.03	1.29	11	0.85

In Thyolo district, it was noted that landlords are richer in land while average tropical livestock units, real asset values, and household labor were significantly greater for tenants as compared to both landlords and non-participants. Non participants were poor in land and household labor relative to both tenants and landlords. But they were found to be rich in livestock and asset values relative to landlords. In Zomba district, tenants were wealthier in labor, asset values, and tropical livestock units but poorer in land than nonparticipants. Tenants in Machinga district owned significantly more land and non-land (livestock, real assets, and household labor) resources. But still some tenancy is taking place that could be for non-land resource adjustment.

For Kasungu district in the central region, both landlords and non-participants have greater and significant land size than tenants. However; tenants enjoy significantly higher labor and livestock units relative to landlords and non-participants. In Lilongwe district also of the central region, non-participants have significantly higher farm size while tenants enjoy more household labor. Consequently, it is perceived that non participants were expected to participate in either side of the market, especially in Zomba (poor in non-land), and Lilongwe(less labor) districts as landlords with regards to their land size. Net land leased size (NLI) varies across districts. This might be due to the variation in the land endowments and non-land resources that limit the leased land size.

Table 2 provides an assessment of land market distribution and concentration across districts. This helps to describe the cultural, geographical and demographic pressure related to land rights and on decisions to participate in land market. It was found that 22.3% are tenants renting in while 14.6% are landlords over all districts. 10% of the sampled plots are either rented in or out over the survey areas. District wise, We found more tenants in Kasungu(23%) followed by Zomba(22%). The disparity may be due fear in some parts of Malawi where renting out land is considered as a signal that the owner need no more land and inability to cultivate (socially tied to poverty).

The study revealed that more landlords are located in Kasungu (33%) followed by Machinga (22%). Region wise, the central region districts of Lilongwe and Kasungu account for about 52% of the landlords while the southern region accounts for higher percentage of the tenants (57%). It can therefore be deduced that renting out is common in the central region while renting in is common in the southern region. This could b due to the fact that the central region is characterized by better infrastructure and less population density whereas the southern is populous and hence high pressure on farm land in which case renting out is not a feasible option. Moreover, the land tenure security issue related to the inheritance and control over land system in the two regions contribute to the extent of land market participation.

Table 2. Land market Participants across six Districts of Malawi from Plot Level Data

Participants (%)	Tyolo	Zomba	Chiradzulu	Machinga	Kasungu	Lilongwe	Total
Tenants(%samples)	11.7	10.2	9.7	8.1	7.9	11.9	9.64
Tenants(of 118)	14.4	22	9.3	11	22.9	20.3	100
Landlord(%samples)	3.4	3.9	0.9	8.1	6	5.9	4.95
Landlords(out of 60)	8.3	16.7	1.7	21.7	33.3	18.3	100

The study also revealed that rental participation varies across districts in terms of the household residential places with respect to marital system, i.e, whether patrilocal or matrilocal, Table 3.

Table 3. Distribution of Participants with respect to Marital System and land ownership.

District	Matrilocal		Patrilocal		Neolocal		Total	
	Tenants	Landlord	Tenant	Landlord	Tenant	Landlord	Tenant	Landlord
Tyolo	14	2	3	2	0	1	17	5
Zomba	16	6	9	3	1	0	26	9
Chiradzulu	10	1	1	0	0	0	11	1
Machinga	4	10	3	3	6	0	13	13
Kasungu	3	4	23	16	0	0	26	20
Lilongwe	11	3	13	9	0	0	24	11
Total	58	25	52	33	7	1	117	59

Renting out is more common in patrilocal societies, where around 56% of the landlords are located. This is related to the fact that land belongs to the husband side and gives confidence on the security of the plots in renting out as compared to the matrilineal system of land possession. Renting in land is denser in Southern region (57.3%) for couples residing in the wife's village (75.9%) as compared to the central region which accounts for 42.6% of the tenants and 69.2% from patrilocal societies. Whereas the renting out is higher in the central region (52.5%) for the couples living in the husband's village (75.8%).

From the 1237 total plots surveyed, we found 9.5% of the plots were in fixed rental market, and 2.1% were borrowed. The kind of rental contract next to fixed rent and borrowing types was the land sales market (1.9%), Table 4. This verifies that the land sales market is the second best option to fixed rental in exchange for cash. However, sales market data was difficult to obtain as it is highly associated with risk of losing land due to the fact that selling land is strictly forbidden.

NLI (net land leased) is negative for the landlords, zero for the non-participants and positive for the tenants, Figure 1. Households are ordered by the size of NLI, illustrating the relative size of the three categories of households relative to the land size rented in or out. The horizontal part of NLI represents

smallholders rationed out due to higher transaction costs or unwilling or/and already have enough land to participate in the market. This is an indicative to categorize households into tenants, non-participants and landlords categories. The fraction of landlords' is less than the tenants' and far more less than non-participants. This may demonstrate how insecure it is to describe oneself as landlord than tenant.

Table 4. Land Market Contracts in Malawi in 2008/2009 Season

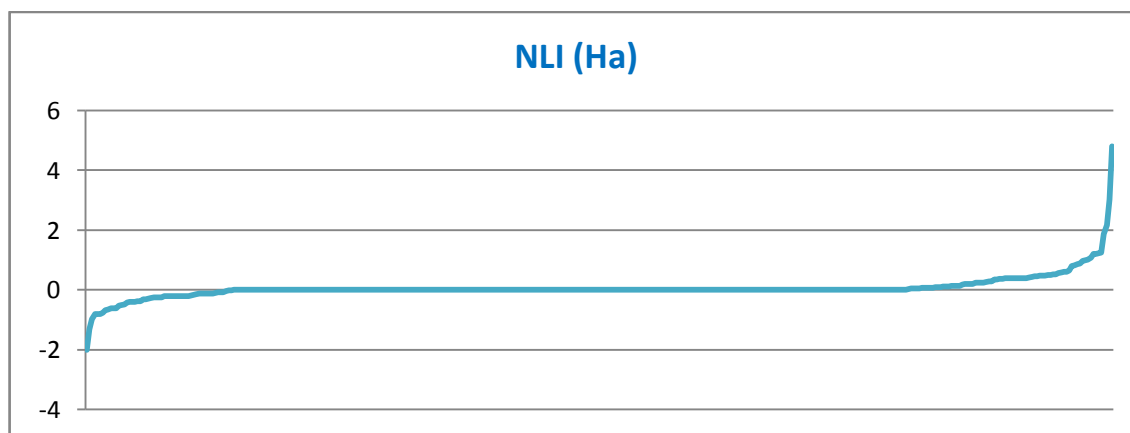| Contract Type	Percent(%) of Total Plots
Fixed Rent	9.50
Sales	1.86
Share Cropping	0.32
Borrowing	2.10
Total	13.78

Figure 1. Ranked households by Net Land Leased

NLI for the tenants is positive and concentrated at a lower own land size. This points out that the smaller own land size drives to rent in land and higher land ownership forces landlords to rent out. i.e., the negative NLI increases as the own land size rises along the horizontal x-axis of Figure 2 as can be observed from the downward sloping scatter plots. This may also indicate that there are no economies of scale due to lumpiness of some inputs. 'This is may be due to hoe-based cultivation' in Malawi (Lunduka. *et al.*, 2006). One can observe that landless/land poor households could access land through rental market. The land rental market to some extent reallocates land from land-rich to land poor households leading to more egalitarian land distribution. Landless households are located vertically perpendicular to the zero value.
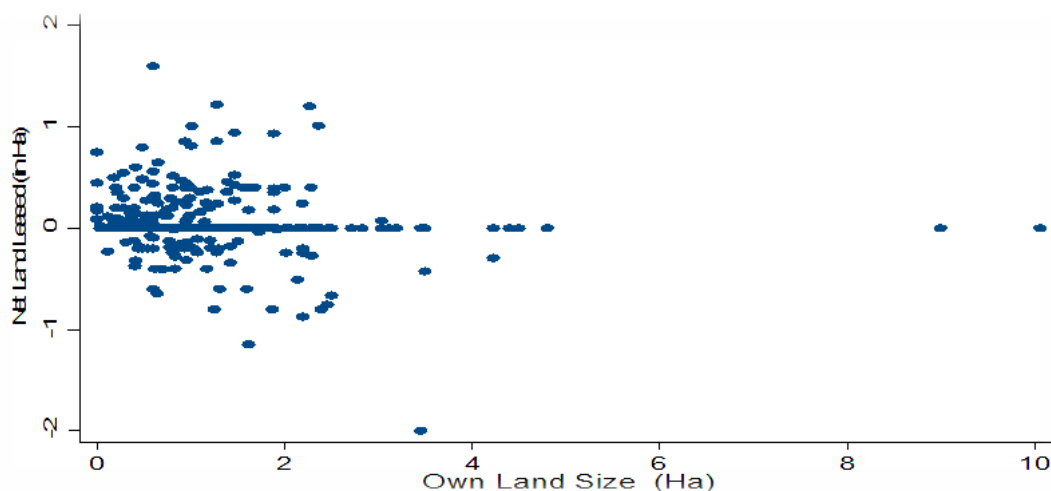
Figure 2. The Net Land leased Vs. Own Land Size

The rationale for land rental participation by households in the country varies among the participants. It was identified (Table 5) that the majority of the tenants (76%) have acknowledged that undersized own land relative to other inputs compelled them to the market in order to increase their operational holdings. Majority of the leased in plots were used for maize cultivation, while only 15% of tenants rented land to grow cash crops.

Table 5. Reasons for land market participation

Reasons	Tenants (%)	Reasons	Landlords (%)
Increase land	76.1	Cash need	21.1
Grow cash crop	14.5	Assist other	38.6
Others	9.4	Has excess land	28.1
		Others	12.3

One can examine that 60% of landlords seem to rent out land for immediate cash needs that either goes for assistance or home spending. 28% of the landlords reported that they have excess land that they could rent out. Tenants had paid fixed rent of 30322MK per hectare on average for most plots they transacted, and average rental return was 7740MK per hectare for landlords. The per hectare value varies among districts and even villages due to, given other factors, differences in land characteristics, location and bargaining power of the partners that may depend on the instance of cash need.

5. Conclusions

Land market in the form of fixed rental and sales contracts is emerging and growing in the country. This was however, found to be limited in sharecropping. Land and non-land asset variations have derived rural households to enter into land rental market. The momentarily transfer of land via the rental market is an important mechanism to allow the poor and land less to access agricultural land, and obtain cash for landlords.

The demand for land increases for households owning more non-land assets. These factors have brought about strong reverse tenancy contract in the country. It was found that landless and land-poor Malawians relative to their family labor rented in land. Fixed rental market is dominant and mainly associated to male labor force, household asset, tropical livestock units, household health, and age variables. We found that renting out of land may be a response to short-term stress when other alternative sources of income have been depleted. Family health shocks make land more important because the illness tends to narrow other possible livelihood base and ultimately make land the only source to depend on.

In general, this paper suggests that land market participation and degree of participation in fixed rental form is found to be highly associated to land and non-land asset endowments, and household characteristics. This market temporarily transfers land to more productive houses.

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Appendix-1. Description and Summary of Main Variables Used in the Analysis

	Description of Variables (1a)		Summary Statistics		(1b)
Variable Name	variable label	Mean	Standard. Error	Min	Max
District	1=thyolo 2= Zomba 3= Chiradzulu 4=Machinga 5=Kasungu 6=Lilongwe	3.74	1.6984	1	6
Region	1=South 2=central	1.45	0.4976	1	2
Age	Age Of The Household Member In Years	46.71	15.819	16	85
Schoolyears	Number Of Years In School For The Household Member	5.31	3.970	0	24
Highestclass	Highest Class Attained By Household Member	4.67	3.556	0	15
Timeill	Number Of Times Household Member Got Ill For more than two weeks in the last season	0.24	0.6975	0	4
Malehh	Household Head Sex(1=Male, 0= Female)	0.78	0.4176	0	1
Consumer	(Sum) Consumer Units	3.99	1.56	0.8	9.2
Malelabour	(Sum) Male Labour Force	1.76	1.040	0	5.5
Femalelabour	(Sum) Female labour Force	1.45	0.756	0	4.2
Children	(Sum) Children	2.7	1.61	0	7
Realvalue	Deflated Real Values Of Assets Using 2006 as base Year	4098	11868.14	0	144717
Tlunits	Total Tropical Livestock Units	1.6	2.64	0	17.2
totmaizcon09	Total Maize Consumed In 2009 In Kg	803.6	783.76	12	8200
totmaizpro09	Total Maize Produced In 2009 In Kg	797.8	990.67	20	7000
Marketi	Did You Rent In? 1=Yes 0=No	0.096	0.295	0	1
Market	Did You Rent Out Plot Last Year? 1=Yes, 0=No	0.049	0.2165	0	1
Plotdistance	Plot Distance From Home(M)	1167.7	2947.9	0	30000
Soiltype	General Soil Texture 1=Sandy 2=Loam 3=Clay	2.027	0.736	1	3
Slope	Slope of The Plot 1=Flat 2=Slight 3=Clay	1.444	0.585	1	3
Plotfertility	Plot Fertility 1=Very Fertile 2=Average 3=Not Fertile	2.052	0.626	1	3
NLI	Net Land Leased(Ha)	169.165	1797.981	-2	1.6
Ownland	Owned Land Through Inheritance, Buying &/Or Grant(Ha)	12117.79	12290.18	0	10.06