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Land Rental Markets in Brazil: A Missed Opportunity

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A CPI Report

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Executive Summary

Brazil's decisions around land use are some of the most important in the world. With a growing agricultural sector and abundant natural resources valuable for their biodiversity, fresh water, and carbon stock, Brazil's challenge is to use available land as efficiently as possible to promote economic growth, while simultaneously protecting important conservation areas.

Land markets are a vital part of the efficient land use picture. When land markets work, either through sales or rentals, they attract skilled operators to otherwise unused or unproductive land, bringing increased agricultural productivity without compromising environmental protection. However, land purchase decisions are sometimes made for non-agricultural reasons, making it harder for farmers to purchase land and put it to its most productive use.

This non-agricultural component of land demand is prevalent in Brazil. The country has a long history of macroeconomic instability and today there is still an impressive amount of land whose owners' main return is associated with nonagricultural benefits such as hedging against inflation. In such circumstances – where land sales are scarce – better land rental markets can play an important role in improving land use efficiency.

However, when compared with other countries, Brazil's land rental markets fall short. Only 3.3% of Brazilian agricultural land was under lease or sharecropping contracts in the latest World Census of Agriculture. In contrast, this figure is about 33% in Europe and almost 38% in the United States. Considering Brazil's large land area and the extensive portion of this

area occupied by agriculture and pastures, the potential of land rentals to improve agricultural productivity is huge. For example, estimations from Assad (2014, forthcoming) show that Brazil accounts for over 40 million hectares of degraded pastureland outside the Amazon suitable for the production of sugarcane. This represents more than 65% of total Brazilian cropland in 2006. Converting this land to sugarcane production can result in higher agricultural value and lower greenhouse gas emissions.

So why are land rental markets in Brazil underperforming, and what can be done about it?

We find that, particularly in a Latin American context, the insecurity of property rights and the lack of effective dispute resolution mechanisms are one part of the problem (De Janvry and Sadoulet, 2002; Conning and Robinson, 2007; Alston and Mueller, 2010). An additional explanation, which seems to be very relevant for Brazil, regards the imperfection of the legal system.

Our analysis further explores these challenges. Brazilian legislation imposes several binding and non-renounceable clauses for land rental contracts, always assuming the need to protect renters from the exploitation on the part of the landowner, such as establishing ceilings on rents, determining forms of payments, fixing minimum limits on the duration of contracts, granting preemptive rights to renters to renew the contract or purchase the land, among others (Appendix 1). Restrictions on rental contracts, imposed by land and labor legislation, excessive guarantees provided to renters, and the insecurity generated by land reform have

created disincentives to the growth of rental markets.

These laws may no longer make sense for Brazil's reality, which today is a more complex and varied agricultural system, with more capitalized, educated, and experienced renters participating in the market. This seems to be especially relevant for sugarcane. We find that leasing and sharecropping arrangements are more widely adopted in larger farms, and renters are better off and more educated in the regions where sugarcane is concentrated. We also find better functioning land rental markets correlate with higher sugarcane productivity in these regions.

Recommendations

Taking into account this scoping analysis, we find that the deregulation of land rental markets can contribute to efficient land use. The current regulation is out dated and could be updated to meet Brazil's current reality.

Overall, there is a clear role for public policy in incorporating land rental market improvements into a national set of policies that target agricultural development and environmental protection.

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1. The critical role of land rental markets in Brazil

There is clear scope for public policy to improve conditions for the development of more active land rental markets, and thereby help increase agricultural production in Brazil, without compromising the protection of natural resources.

Land is an important economic asset with distinguishing features, and has additional values other than those derived from its use in agriculture and collateral, including as a mechanism of protection against aggregate uncertainty, as a tax shelter, and for other reasons (Berry and Cline, 1979; Brandão and Feder, 1996; De Janvry, Key, and Sadoulet, 1997; Carter and Zegarra, 2000).

This is especially relevant for Brazil – given the country's long history of macroeconomic instability, land ownership in Brazil yields non-agricultural benefits, such as hedging against inflation. As pointed out by Berry and Cline (1979), “in countries with poorly developed capital markets, especially those with chronic inflation, landowners may find it attractive to hold land for speculative gain – or merely to accomplish the store of value objective”. Indeed, Assunção (2008) illustrates the store-of-value motivation for landholding in Brazil by showing that land prices are much more sensitive to macroeconomic shocks than are rental rates, due to a nonagricultural component of the demand for land.

In the last 20 years, macroeconomic instability decreased substantially in Brazil. However, there is still an impressive amount of land whose owners' main financial return is associated with

nonagricultural payoff. This large share of land not put to agricultural use results in a decrease of aggregate agricultural production, while the imperfection of credit and insurance markets contributes to this allocation by preventing skilled operators from buying the land from these owners.

This land could be offered in rental markets to be cultivated by skilled operators. Assad (2014 forthcoming) estimates that Brazil has over 40 million hectares of degraded pastureland suitable for sugarcane production. This represents more than 65% of total Brazilian cropland in 2006, according to the latest Agricultural Census. Benefits of pastureland conversion include: restoring the quality of degraded soils in terms of higher fertility, increasing carbon fixing, and reducing greenhouse gas emissions. Greenhouse gas emissions avoided through the conversion of this amount of degraded pastureland into sugarcane production amount to a minimum of 700 million tons of CO₂ equivalent each year. To give a sense of the scale of those CO₂ savings, that's twice the savings in 2009 generated by all renewable energy built in Europe.

Beyond the potential to accelerate the conversion of land from low-productivity to high-productivity uses, the development of active rental markets is an important issue because Brazil has an expanding agricultural frontier, some of which is advancing into the Amazon, resulting in deforestation; expanding production through existing agricultural lands can grow the economy without compromising the Amazon.

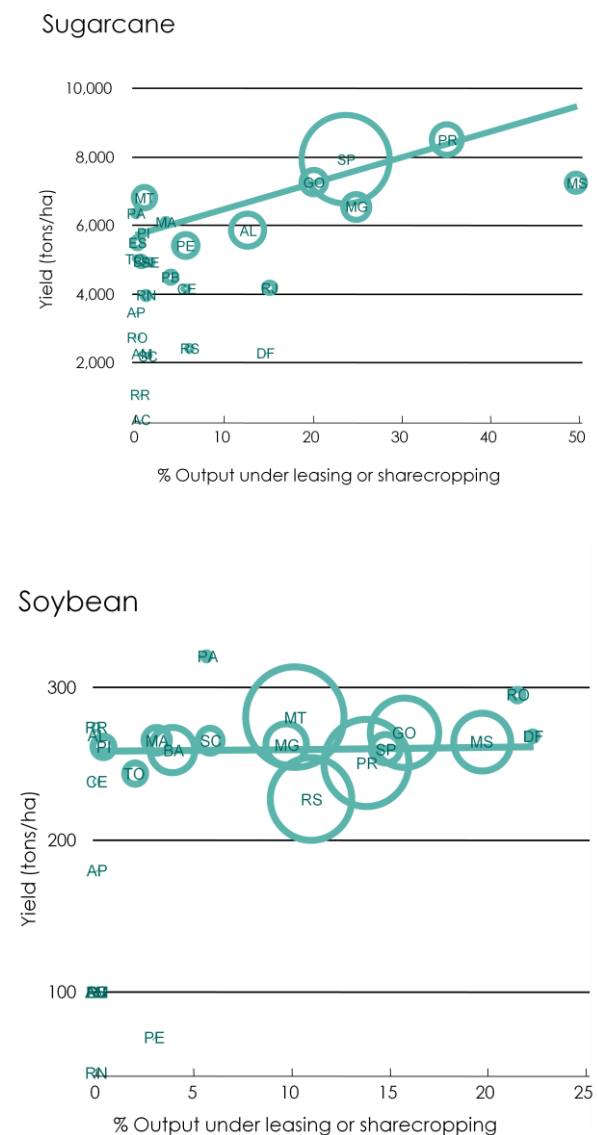
Descriptive data from a recent study from CPI (2013), based on the 2006 Brazilian

Agricultural Census, the latest available data set on countrywide agricultural production, reveal large variation in agricultural productivity both within and across Brazilian regions. Within-region differences suggest that socioeconomic factors affect agricultural productivity beyond variation in geographical conditions, indicating inefficient land use in Brazil. Thus, there is room for boosting economic growth of the rural economy via increases in productivity, at no cost to environmental preservation.

The same CPI study shows that leasing of land in Brazil is associated with greater farm productivity both for cattle ranching and crop farming. In the case of large-scale crop farming, municipalities with above-median prevalence of rentals are 19% more productive than below-median municipalities. For large-scale cattle ranching, municipalities with relatively more active land rental markets average 24% higher productivity than those with less active land rental markets (CPI, 2013).

For crop farming, productivity gains associated with land rentals seem to vary across crops. As discussed earlier, and based on evidence from the 2006 Brazilian Agricultural Census, sugarcane production may be especially sensitive to land rental markets (both leasing and sharecropping) (Figure 1). However, soybean productivity is fairly constant, regardless of the contractual arrangement. This may indicate that soybean producers are a more homogeneous category of market oriented farmers.

Figure 1: Sugarcane and soybean productivity vs. output under leasing or sharecropping



Source: 2006 Census of Agriculture – IBGE.
 Note: Size of circle represents total sugarcane or soybean production of Brazilian States in tons.

These findings are in line with both theoretical and empirical literature reviewed by Otsuka (2007), which suggest that land rental contracts, including both fixed-rent and sharecropping arrangements, are generally more efficient than other land arrangements. In particular, they show that there is fairly strong evidence that suppression of land rental transactions tends to encourage large owners to employ hired labor, which is less efficient than rental arrangements due to lower effort by workers as compared with renters (Binswanger and Rosenzweig, 1986; Hayami, Quisumbing and Adriano, 1990; Binswanger, Deininger and Feder, 1995).

Thus, despite potential shortcomings, which will be discussed in Section three, land rental markets can establish an efficient resource allocation in the presence of financial markets distortions, providing land access to skilled operators and redistributing land according to its highest-value uses, even if people demand land for nonagricultural purposes. Productivity gains can then be split so as to benefit both the owner and the renter.

This paper presents evidence that Brazilian land rental markets are underdeveloped as compared with other countries, and that the current institutional framework creates obstacles to the functioning of the land rental market. In particular, the current legislation creates disincentives to the growth of the rental markets by imposing restrictions on the freedom of the parties to contract. Moreover, the legislation does not take into account the heterogeneity of the market.

The next section puts the Brazilian case in a more general perspective, by

presenting evidence on the organization of the agriculture sector in other countries. Section three explores possible explanations for the lack of rentals, focusing on the Latin American context. Section four discusses the regulation of land rental markets in Brazil, and shows how current laws, though designed with the objective of protecting renters, actually suppress the markets. Section five tries to set the profile of Brazilian renters, based on available data. Finally, section six provides recommendations for public policy to improve conditions for the development of more active land rental markets. An Appendix at the end of the document summarizes the main aspects of the Brazilian legislation regulating land rental contracts.

2. Land rental markets are underdeveloped in Brazil

Land rental markets in Brazil are underdeveloped compared with other countries. Thus, considering Brazil's large land area and the extensive portion of this area occupied by agriculture and pastures, the potential of tenancy to improve agricultural productivity is huge.

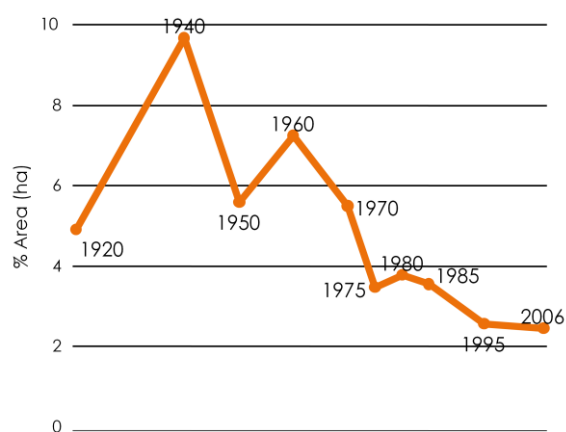
According to available studies, there are significant differences in the importance of land rentals across the world. While the use of land rentals is relatively low in Latin America, both North America and Europe have high percentages of rental landholding. For instance, a survey of agricultural contracts undertaken by Hayami and Otsuka (1993) shows that, in the United States and Canada, over 60% of cultivated land in 1970 was farmed under pure tenancy or on land cultivated by owners who also leased in land. In a sample of 12 European countries, the figure was over 40%. Africa had over 30% of farmland under tenancy. For a sample of 10 Asian countries, the comparable figure was approximately 16%. Latin America, on the other hand, had less than 12% of cultivated land under tenancy in 1970.

Similarly, De Janvry, Macours and Sadoulet (2002) present data on the importance of land rentals across the world and for certain countries in Latin America. They show that in Belgium, France, and Germany rented land exceeded 60% in 1995, and in the United States 45% of agricultural land was leased in 1988. In Latin America, only 12% of land is under lease, with values ranging from 2% in Mexico to 21% in Uruguay.

Focusing on Brazil, Figure 2 shows that the area under rental fell from a high of 10% in 1940 to a low of 2.4% in 2006. In 1964, Brazil adopted the Land Statute, which imposed several binding and non-renounceable clauses that aim to benefit the sharecroppers and lessees. Since then the share of rentals has decreased steadily, reaching its lowest levels in 2006. The Land Statute continues to regulate rental contracts to this day.

Figure 2: Evolution of land rental arrangements over time in Brazil: area under rental

Leased or Sharecropped Land Area in Brazil



Source: 2006 Census of Agriculture – IBGE.

In order to put the Brazilian case in a more general perspective, this section presents evidence on the organization of the agriculture sector in other countries. Table 1 compares several indicators of Brazil with United States, Europe, Asia, and Latin America.

Table 1: International indicators

	Brazil	Latin America ¹	Asia ²	Europe ³	United States ⁴
Number of Holdings	4859865	7862035	143573823	7418126	2128982
Total area of holdings	353611246	452006653	228947283	157162778	379712151
Average farm size	72.8	57.5	1.6	21.2	178.4
Agricultural land (%)	64.4	65.7	92.2	58.0	88.4
Cropland (%)	22.0	22.0	92.8	65.4	52.3
Meadows and pastures (%)	78.0	78.0	1.9	34.2	47.7
Land tenure(area, %)					
Owner and owner-like	93.8	89.8	90.8	56.6	62.3
Rented from others	3.3 ⁵	3.9	4.3	32.9	37.7
Under other forms	2.9	5.0	0.2	3.5	-
Below 10 hectares:					
Farms (%)	49.5	57.9	98.5	70.6	8.4
Area (%)	2.2	2.7	72.5	9.4	0.1

Source: World Census of Agriculture (2000)

Notes:

1) Latin America = Brazil, Chile, Ecuador, Guatemala, Panama, Puerto Rico, Nicaragua, Uruguay, and Venezuela.

2) Asia = India, Nepal, Pakistan, Philippines, Qatar, Thailand, and Turkey.

3) Europe = Austria, Belgium, Cyprus, Finland, France, Germany, Greece, Italy, Luxembourg, Norway, Portugal, Spain, and the United Kingdom.

4) Farms (%) and Area (%) below 4 hectares

5) The difference between this figure and the share of 2.4% showed in Figure 3 is due to the fact that this table is compiled based on the 2000 World Census of Agriculture, while Figure 3 is based on the 2006 Brazilian Census of Agriculture.

Overall, Brazil follows the same pattern as most Latin American countries, with land use characterized by high inequality in the distribution of farmland, and owner-cultivation being the most common form of land tenure. Agricultural land is mostly meadows and pastures that remain underused. The fact that only 22% of the agricultural land is covered by cropland may be an indication that agricultural production in Brazil is below its potential. Even with a potentially high demand for land for agricultural purposes, 49.5% of the farms have less than 10 hectares. Further, only 3.3% of total land area is rented out, which is remarkably low when compared to the patterns for United States and Europe, respectively almost 38% and about 33%.

The size distribution of farms in Asia is completely different from that of Brazil.

Asian countries have a much more egalitarian distribution of land, with fewer than 2% of farms reaching above 10 hectares. A predominance of cropland indicates a high intensity of land use, generally based on family labor. Although the rental market in Asian countries is also limited, there is no evidence of a missing rental market since it seems that there is no demand for it. In European countries the rental market is active, and just over half of the agricultural area is operated by landowners. As in Brazil, the United States exhibit a concentrated land distribution, and the average farm size is large. However, as opposed to Brazil, only two-thirds of the area is operated by landlords.

Given the low share of Brazil's land that is rented, what's cultivated in Brazil's land rental market? Harvested area and

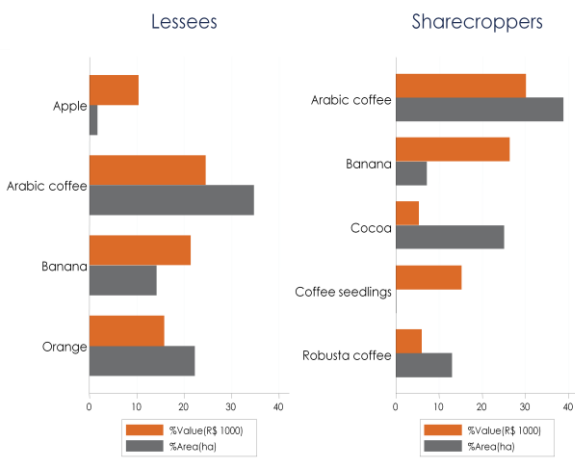
production value under rental for temporary and permanent crops are showed in Figures 3 and 4.

Figure 3: Share of leasing and sharecropping in terms of harvested area and production value: temporary crops



Source: 2006 Census of Agriculture – IBGE.

Figure 4: Share of leasing and sharecropping in terms of harvested area and production value: permanent crops



Source: 2006 Census of Agriculture – IBGE.

Sugarcane, soybean, and corn are the temporary crops with highest shares of lessees and sharecroppers both in terms of harvested area and in terms of production value, while Arabica coffee is the permanent crop with the highest share of lessees and sharecroppers.

3. Possible explanations for the lack of rentals

There are many possible reasons for poorly functioning land rental markets. Some likely drivers include insecurity of property rights, lack of effective dispute resolution, and an imperfect legal system.

A large body of literature has addressed possible reasons for imperfections in land rental markets around the world, which are mainly related to the incentives faced by renters to work and invest in the land¹.

Among the many explanations for a reduction in the share of output appropriated by the renters, a factor that is likely to be important in most Latin American countries, including Brazil, is the landlord's fear of loss of the land [Macours, De Janvry and Sadoulet (2001)]. De Janvry and Sadoulet (2002) report: "Case studies in a number of countries show that main limiting factors to land rental transactions are weakness of property rights and lack of reliable conflict resolution mechanisms.

Consequences are rentals that are few, informal, short-run, and segmented as they occur within narrowly defined circles of confidence (by kinship, proximity, farm sizes, and social class). Rentals are also sometimes forbidden (land reform sector) and rents controlled at excessively low levels."

Conning and Robinson (2007) analyze the effect of property rights insecurity on

¹ The basic arguments that have been used are: risk sharing (Cheung, 1969), hidden actions and moral hazard (Stiglitz, 1974; Eswaran and Kotwal, 1985; Ghatak and Pandey, 2000), screening (Hallagan, 1978; Allen, 1982), and limited liability constraints (Shetty, 1988; Laffont and Matoussi, 1995).

agricultural organization by linking model of contract choice to a political economy model of potential property rights reform, and conclude that anything that increases the threat to property rights will lower the incidence of land rentals. Alston and Mueller (2010) test this hypothesis with county level data for Brazil, and conclude that a one-standard deviation increase in land conflicts leads to a negative effect on tenancy arrangements, lowering the use of fixed rent contracts from over 4% to less than 3%, and sharecropping by half, from almost 2.5% to approximately 1.25%, with a corresponding increase in owner run farms.

A related factor to insecure property rights and lack of effective dispute resolutions is an imperfect legal system. Ghatak (2007) cites this explanation for fewer land rentals and provides the example of legislation that makes it extremely difficult for the landlord to evict a tenant if he wishes to withdraw land for owner-cultivation at some point later. Indeed, in their cross-state analysis of tenancy laws in India, Conning and Robinson (2007) show that tenancy laws, though designed with the objective of protecting tenants, actually reduced the extent of tenancy. This seems to be precisely the case of Brazil, as discussed in the next section.

Finally, an additional explanation for the lack of land rentals is provided by Alston and Mueller (2010), and rests on the lack of either the necessary physical capital or human capital from potential rentals to profitably rent land.

4. Regulation of land rental markets in Brazil

In Brazil, land and labor legislation imposing restrictions on rental contracts, excessive guarantees provided to renters, and the insecurity generated by land reform have created disincentives to the growth of rental markets.

In Brazil, rural land rights are governed by the Brazilian 1988 Constitution, the Land Statute (Law No. 4504 of November 30, 1964), and the Civil Code. The Land Statute, which still underpins all land related legislation, imposes very rigid limits for rental contracts and creates disincentives to the growth of land rental markets by imposing restrictions on the freedom of the parties to contract.

In particular, the Brazilian legislation establishes several binding and non-renounceable clauses, always seeking to benefit the sharecroppers and lessees, and prohibits them from renouncing the rights or privileges provided by the legislation. Protection to renters includes: establishing rent ceilings and determining forms of payment; minimum limits on the duration of contracts; preemptive rights of the renter to renew the contract or purchase the rural property; burden of proof on the landlord that he intends to explore the land directly in order to evict renter; and the renter's right to be indemnified for any useful or necessary improvements carried out in the land, including the right to remain in the land until compensation is paid.

The legislation also includes the possibility that proof of contracts be made by testimony. This rule has often led to judicial disputes following contract termination that impose heavy payments on

landowners based on labor legislation and the arguments by renters that they practiced informal labor.

Another rule included in the original version of the Land Statute, with the potential to undermine the basis of confidence of contractual relationships in the Brazilian land rental market, was the preference "for the access to land" given "to everyone that occupy, under any form of renting, for more than five years, a property located in a priority area for Land Reform." This provision may have contributed to landowners' perceptions that renting the land would make them prime targets for expropriation due to the possibility of the property being considered unproductive. According to a report from the World Bank (1994), the threat of expropriation "may have been much more effective in constraining the rental market and sharecropping arrangements than the provisions that regulate such arrangements." This rule was suspended in 2001 by a Provisory Measure (Medida Provisória No. 2.183-56 of August 24, 2001), which created the Rural Lease Program, establishing that as long as the land was under rental, it would not be a target for land reform.

The perceived need to protect renters, both socially and economically, from the exploitation on the part of the landowner, due to the supposed high concentration of landownership appears to be the reason behind strict regulation of the land market. One of the principles that governed the elaboration of the Land Statute was the "direct use" of the land, through property. Leasing and sharecropping were not considered means of access to the land by the legislation. They were considered "bad

forms of agricultural contract," as referred by Silva (2005). Romeiro and Reydon (1994) reveal that the concern of the legislator, by including these arrangements in the Land Statute, was only "to regulate a type of labor relationship and production that presented itself usually distorted." The consequence of all this regulation was, as referred to by Brandão (2002), the "suppression" of the land rental markets.

5. Overall profile of rural renters in Brazil

Today, Brazil's agrarian structure is more complex and heterogeneous with more educated, experienced, and wealthier renters participating in much of the market. The motivation behind the current regulation is no longer relevant for many areas in Brazil. Sugarcane-growing regions may also benefit from looser restrictions.

There are renters, nowadays in Brazil, who have the technological and financial capacity to invest in more complex and structured agroindustrial chains. In some cases, rental arrangements are a way of reducing capital expenditures. In other cases, farmers face very strict restrictions by the legislation to purchase land, as in the case of foreigners or Brazilian companies directly or indirectly controlled by foreign capital, which can operate mainly through sharecropping agreements.

On the other hand, small renters and subsistence farmers, which tend to be concentrated in the North and Northeast regions of Brazil, seem to match the profile of potential beneficiaries of the guarantees established by the land legislation. They often have low educational levels, lack experience, qualification, and technical assistance, and face restrictions on access to credit and markets in general.

Data from the National Research of Domiciles Sample (PNAD) of 2006, analyzed by Almeida and Buainain (2010), confirms these two heterogeneous categories among Brazilian renters, which they refer to as the "dual nature" of the lease and sharecropping arrangements.

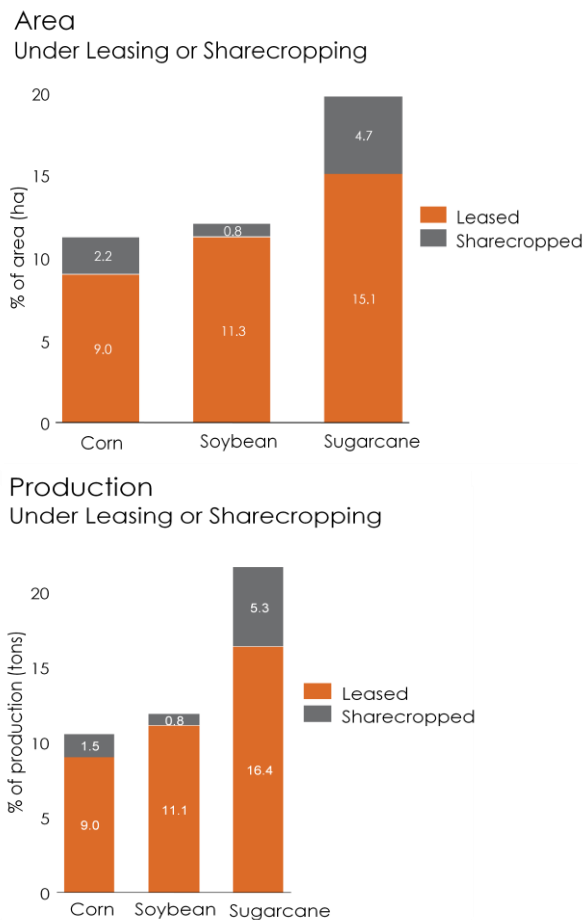
For instance, they find that, in the State of São Paulo, lessees had a better welfare index than landowners. In the South, the share of lessees falling in the medium category of the index was higher than the share of landholders, and very few lessees, sharecroppers, and landowners fell in the low category of the index. The composition of the welfare index in the South was very similar to the one of Minas Gerais, Espírito Santo and Rio de Janeiro (the other States of the Southeast region), while the composition of the index of the Center-West was similar to the one of São Paulo. In contrast, in the Northeast, lessees and, in particular, sharecroppers account for the largest share of the lowest category of the index. Furthermore, the authors found that education level of lessees, sharecroppers and landowners was fairly similar across the country, while, curiously, illiteracy rates were higher among landowners than among lessees.

This regional variation indicates that some areas of Brazil may especially benefit from looser rental restrictions.

There is also variation among crops. Based on the 2006 Brazilian Agricultural Census, among the key crops that make up for over half of total cropland in Brazil – soybean, maize, and sugarcane – sugarcane accounts for the highest share of renters and sharecroppers, both in terms of harvested area and in terms of production (Figure 5).

Almost 20% of sugarcane harvesting occurs in cropland operated by lessees or sharecroppers. In the Brazilian context this figure represents a high rental rate, since total temporary cropland rented in the country in 2006 reached only 12%. The figures for corn and soybean are about 11% and 12%, respectively.

Figure 5: Cropland under Rental and Production under Rental: Selected Crops

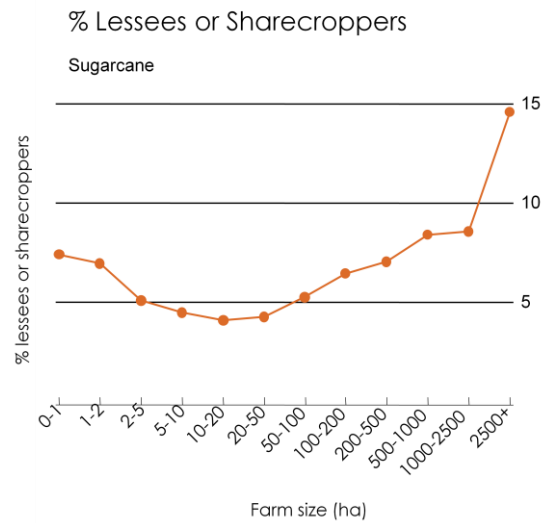


Source: 2006 Census of Agriculture – IBGE.

Similarly, lessees and sharecroppers are responsible for about 22% of sugarcane production. Figures for corn and soybean are notably lower, suggesting a significant restriction to the rental market. Sugarcane renters do not seem to match the profile of the beneficiaries of the protections granted by the legislation.

Figure 6 shows that land rental arrangements are more widely adopted in larger farms, operating on typical business basis.

Figure 6: Share of Renters vs. Farm Size: Sugarcane



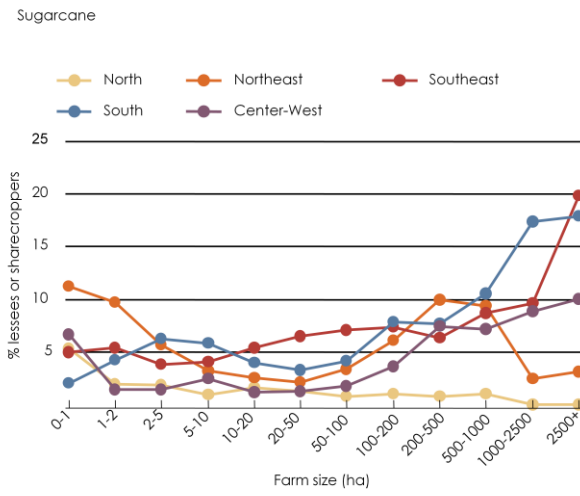
Source: 2006 Census of Agriculture – IBGE.

Sugarcane production is concentrated in the Southeast, due mostly to high-quality land and good infrastructure in the state of São Paulo, while the Center-West starts showing signs of its potential for sugarcane expansion. Small renters are present in the Northeast, a region quite relevant until 1975 in terms of cultivated area and productivity, but which has become the least productive of the five regions in the country, based on the latest data from the Brazilian Agricultural Census (CPI, 2013).

Figure 7 shows that in the Southeast, the region that concentrates most of sugarcane production, 20% of renters are located in farms larger than 2500 hectares.

Figure 7: Share of Renters vs. Farm Size: Sugarcane

% Lessees or Sharecroppers



6. Recommendations

Taking into account this scoping analysis, we find that the deregulation of land rental markets can contribute to efficient land use. The current regulation is out dated and could be updated to meet Brazil's current reality.

This is especially important for sugarcane-growing regions, where there is correlation between functional land rental markets and sugarcane productivity.

Overall, we find no clear role for government or legislation induced restrictions in the ability of the parties to negotiate contracts according to their best interests. Instead, there is a clear role for public policy in incorporating land rental market improvements into a national set of policies that target agricultural development and environmental protection. More efficient land use can advance a number of Brazil's economic and environmental goals.

7. Appendix

The Brazilian legislation provides for two kinds of agrarian contracts: the rural lease agreement (arrendamento) and the sharecropping agreement (parceria). The main purpose of these agreements is the assignment of a rural property to a tenant for agricultural, cattle raising, agro-industrial or rural extractive exploitation activities. The key differences among these two agreements are summarized in the table below.

RURAL LEASE AGREEMENT	SHARECROPPING AGREEMENT
Lessee assumes all risks from rural activity.	Landowner and sharecropper share the risks resulting from force majeure, as well as products and profits.
Landowner receives certain compensation in the form of rental payments, independently of the production outcome.	Landowner receives a percentage of the products of the harvest, if harvesting occurs.
Remuneration of landowner cannot be greater than 15% of the price of the property, as set forth in the Rural Tax (<i>Imposto sobre a Propriedade Territorial Rural – ITR</i>) form, including any improvements that are part of the contract, unless the lease is partial, in lands selected exclusively for high yield exploitation, in which case the limit is 30%.	The maximum limit for the Landowner's share of the production depends on the proportion of the means of production he provides. He may provide only the bare land, prepared land, land with built improvements, machinery and even livestock. Percentage limits of profits to landowner may vary from 20% to 75% calculated on the total volume of goods produced in the landholding
Contract may be agreed on a definite or indefinite term basis. In any case, the contract will expire only upon the harvest of the goods produced in the landholding, and may be automatically extended for force majeure delay. Minimum terms of contract are required by law: 3 years for the exploitation of temporary agriculture or small-scale cattle raising; years for the exploitation of permanent agriculture, large-scale cattle raising, or extraction of animal raw material; and 7 years for forest exploitation	Contract may be agreed for a definite or indefinite term. In any case, the contract will expire only upon the harvest of the goods produced in the landholding, and may be automatically extended for force majeure delay. Law provides a minimum period of 3 years for the duration of the contract.
In case of sale of the land, lessee has the right of first refusal to purchase the landholding by matching any offer made by a 3 rd party.	In case of sale of the land where a sharecropping agreement is in place, the contract is automatically extinguished with the consequences regarding reimbursement, losses and damages regulated by law.
Lessee has the right of first refusal to renew the lease when it expires by matching any offer made by a 3 rd party, unless the landowner notifies the lessee 6 months before the end of the contract that he intends to explore the land directly or by means of a descendant.	The right of first refusal of the sharecropper to renew his contract by matching any offer made by a 3 rd party can be included or excluded from the contract.
Lessee has the right of indemnity for any useful or necessary capital improvements he makes in the land. He may remain in the land until he receives such compensation. Other improvements which are not necessary and useful will receive indemnity only when the landowner expressly authorizes their execution.	Sharecropper has the right of indemnity for any useful or necessary capital improvements he makes in the land. He may remain in the land until he receives such compensation. Other improvements which are not necessary and useful will receive indemnity only when the landowner expressly authorizes their execution.
Leasings are imposable as rents. The amount received is considered as imposable by the Brazilian IRS system to a rate of 27.5%.	Products derived from sharecropping are imposable as income from rural activities (sale of land products). The rate of the tax imposed in case the landowner only supplies the land is 5.4%.
Very strict limitations are applied to the lease of rural land by foreigners, whether individual or corporate entities. Restrictions also apply to Brazilian companies directly or indirectly controlled by foreign capital.	These restrictions do not apply to foreigners who wish to explore rural land through sharecropping.

8. References

- Allen, F. (1982). On Share Contracts and Screening. *Bell Journal of Economics* 13(2): 541-77.
- Almeida, P. J. and Buainain, A. M. (2010). Arrendamento e Parceria no Brasil: Dinâmica, Perfil dos Contratos e Perspectivas. Paper presented at the 48^o Congress of Sociedade Brasileira de Economia, Administração e Sociologia Rural. Campo Grande, Brazil.
- Alston, L. J. and Mueller, B. (2010). Property Rights, Land Conflict and Tenancy in Brazil. NBER Working Paper No. 15771
- Assad, E. D. (2014, forthcoming). Aumento de Produção Agrícola e Equilíbrio de Emissões de GEE: É possível no Brasil de Hoje e do Futuro?. Unpublished manuscript
- Assunção, J. J. (2008). Rural Organization and Land Reform in Brazil: The Role of Nonagricultural Benefits of Landholding. *Economic Development and Cultural Change* 56(4) 851-870. The University of Chicago Press.
- Assunção, J., Gandour, C., and Rocha, R. (2013). DETERring Deforestation in the Brazilian Amazon: Environmental Monitoring and Law Enforcement. CPI/NAPC Working Paper.
- Berry, A. and Cline, W. R. (1979). *Agrarian Structure and Productivity in Developing Countries*. Baltimore: Johns Hopkins University Press.
- Binswanger, H. P. and Rosenzweig, M. R. (1986). Behavioral and material determinants of production relations in agriculture. *Journal of Development Studies* 22(3): 503-539.
- Binswanger, H. P., Deininger, K. and Feder, G. (1995). Power, distortions, revolt, and reform in agricultural land relations. In: Behrman, J., Srinivasan, T. N., editors. *Handbook of Development Economics*, vol. III. Amsterdam: Elsevier.
- Brandão, A. S. P. and Feder, G. (1996). Regulatory Policies and Reform: The Case of Land Markets. In: Frischtak, C., editor. *Regulatory Policies and Reform: A Comparative Perspective*. Washington, DC: World Bank.
- Brandão, A. S. P. (2002). Comentário a "Access to Land for the Rural Poor". *Econômica* 4(2): 279-282.
- Carter, M. R. and Zegarra, E. (2000). Land Markets and the Persistence of Rural Poverty in Latin America: Post-Liberalization Policy Options. In: López, R. and Valdes, A., editors. *Rural Poverty in Latin America: Analytics, New Empirical Evidence and Policy*. London: Macmillan.
- Cheung, S. (1969). *The Theory of Share Tenancy*. Chicago: University of Chicago Press.
- Conning, J. H. and Robinson, J. A. (2007). Property Rights and the Political Organization of Agriculture. *Journal of Development Economics* 82: 416-447.
- CPI (2013). *Production and Protection: A First Look at Key Challenges in Brazil*. CPI Report.
- De Janvry, A., Key, N. and Sadoulet, E. (1997). *Agricultural and Rural Development Policy in Latin America: New Directions and New Challenges*. FAO Agricultural Policy and Economic Development Series 2. Rome: Food and Agriculture Organization of the United Nations.

De Janvry, A. N. and Sadoulet, E. (2002). Land Reforms in Latin America: Ten Lessons toward a Contemporary Agenda. Paper presented at the World Bank's Latin American Land Policy Workshop, Pachuca, Mexico.

De Janvry, A., Macours, K. and Sadoulet, E. (2002). Access to Land in the Rural Development Agenda. Sustainable Development Department, Inter-American Development Bank, Washington D.C. p 29-76

Eswaran, M. and Kotwal, A. (1985). A Theory of Contractual Structure in Agriculture. *American Economic Review* 75(3): 352-67.

Otsuka, K. (2007). Efficiency and Equity Effects of Land Markets. In: Evenson, R. and Pingali, P., editors. *Handbook of Agricultural Economics*. Volume 3. Agricultural Development: Farmers, Farm Production and Farm Markets. Amsterdam: Elsevier. p 2672-2697.

Ghatak, M. and Pandey, P. (2000). Contract Choice in Agriculture with Joint Moral Hazard in Effort and Risk. *Journal of Development Economics* 63(2): 303-26.

Ghatak, M. (2007). Land Reform. In: Basu, K., editor. *The Oxford Companion to Economics in India*. New Delhi: Oxford University Press. p 328-332

Hallagan, W. (1978). Self-Selection by Contractual Choice and the Theory of Sharecropping. *Bell Journal of Economics* 9(2): 344-54.

Hayami, Y., Quisumbing, A. R. and Adriano, L. S. (1990). *Toward an Alternative Land Reform Paradigm: A Philippine Perspective*. Makati: Ateneo de Manila University Press.

Hayami, Y. and Otsuka, K. (1993). *The Economics of Contract Choice: an Agrarian Perspective*. Oxford: Oxford University Press.

Laffont, J. J. and Matoussi, M. S. (1995). Moral Hazard, Financial Constraints and Sharecropping in El Oulja. *Review of Economic Studies* 62(3): 381-99.

Macours, K., De Janvry, A. and Sadoulet, E. (2001). Matching in the Tenancy Market and Access to Land. Unpublished manuscript, Department of Agricultural and Resource Economics, University of California, Berkeley.

Romeiro, A. and Reydon, B. P., editors (1994). *O Mercado de Terras*. Brasília: IPEA, Estudos de Política Agrícola (Documentos de Trabalho, 13).

Shetty, S. (1988). Limited Liability, Wealth Differences and Tenancy Contracts in Agrarian Economies. *Journal of Development Economics* 24(1): 1-22.

Silva, C.F. (2005). Estatuto da Terra. In: Motta, M., editor. *Dicionário da Terra*. Rio de Janeiro: Editora Civilização Brasileira. p 198-200.

Stiglitz, J. E. (1974). Incentives and Risk Sharing in Sharecropping. *Review of Economic Studies* 41(2): 219-55.

World Bank (1994). *Brazil: The Management of Agriculture, Rural Development and Natural Resources*. Vol. II: Background Papers. Report No. 11783-BR. Natural Resource Management and Rural Poverty Division, Country Department, Latin America and the Caribbean Region.