

Land Leasing and Sharecropping in Brazil:

Determinants and modus operandi ¹

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Abstract

Ceding the use of land can have a positive impact on the unequal allocation of resources in rural areas. In Brazil, although the practice is nationwide, leasing and sharecropping are not widely employed. The objective of this article is to describe how these contracts work in the country, using 2006 Census Data. It was noticed that, on the one hand, the more advantageous contracts involve producers with higher levels of income and qualification, located mainly in the Southeast, South and Midwest. On the other hand, there is an expressive number of poor, small producers in the Northeast whose productive activity barely provides subsistence for the family. It is unlikely that these contracts will be a viable option to access land while there is still instability surrounding property (better definition of property rights) and the employment of incentives for the beneficiaries themselves.

Keywords: Land Lease, Sharecropping, Brazil, Determinants and Operation.

1. Introduction

The idea that land leasing and sharecropping could contribute to agricultural inclusion and reduce land disputes, economic inefficiency and social inequality is not new, nor unknown in the economic literature (Vogelgesang, 1996; Deininger e Jin, 2002).

Although broadly discussed and accepted by the literature, the empirical data shows a reduced adoption of these practices in Latin America¹, particularly when compared to Europe, Asia and Africa². Brazil, in particular, is known for its unequal distribution of land ownership, with two notable characteristics: large tracts of unused land and a large number of rural workers that claim rights to the access of land. Despite the coexistence of unused land and producers that do not have the necessary amount of land to earn a living, land leasing and sharecropping are still relatively unknown and underused as alternatives to promoting access to land. Highly unequal distribution of ownership continues to be a major problem in the country.

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Reydon and Plata (2006) analyzed the leasing of land and sharecropping in Brazil in order to understand why these systems were not used as adjustment mechanisms in the land market. They concluded that, generally speaking, the main answers lie within the institutional regime which is marked by the insecurity of land ownership and facilitates the maintenance of unused land for speculative ends.

The main objective of this article is to explore this line of thinking and analyze land leasing and sharecropping in Brazil in order to understand the principle key determinants that drive these contractual relationships. We argue that the past and present institutional framework of property rights and contracts negatively interferes with land leasing and sharecropping in the country, particularly when poorer producers are involved. Despite the existence of legislation to regulate contractual relationships, the terms of the contracts are largely not complied with. The shorter contract terms, for example, are adjusted in accordance with the interests of the landowners. Legal restrictions surrounding land use as well as the limits regarding payment for the lease are also often ignored.

There is also evidence of contractual dualism in Brazil. On the one hand, there is the small tenant and/or sharecropper, for whom it is difficult, for a number of reasons (such as restricted access to different markets, level of wealth and qualifications, and experience) to sustain a satisfactory production level, generating marketable surplus sufficient to overcome the level of poverty and to pay the land rent. This group is facing serious difficulties to survive as farmers, and for many, particularly the younger members, rural migration continues to be the best option. On the other hand, there are the more experienced tenants/sharecroppers, who have more capital and better financial and productive conditions. They can be found in the more complex and structured agri-industrial chains (such as sugarcane, soya, maize and cattle raising) and have managed to preserve contracts that are more favorable and sustainable for both parties (Almeida, 2009).

In order to meet the proposed objectives, the article presents, in addition to this introduction, the following structure. The following section will identify and analyze the key factors that determine land leasing and sharecropping in Brazil. The third section provides a general overview of the practice and regional differences in the country based on data from the 2006 Agricultural Census. The final section will provide conclusions about the study.

2. Land Leasing, Sharecropping and Transaction Costs

One author characterized farming as an island in a sea of risks (Wedekin, 2008). In this sense, the sharing of risks between the landowner and the tenant presents a strong incentive to lease land. Stiglitz (1974) argues that risk sharing involves a combination of rent contracts and mixed wage contracts. Rent contracts offer incentives such as deadlines, payment method and profitability. Thus, the tenant assumes all of the risks in the productive process. Regarding wage contracts, the landowner assumes the risks and hires rural workers.

It is unlikely that one contract alone can minimize the risks that come with using labor and the land. It is possible, however, to design a contract that will minimize the **total**

transaction cost³. This question was central for Murrell (1983), Datta, O'Hara and Nugent (1986), Roumasset and Uy (1987) and Barzel (1989). They argued that because the worker's income was independent of production, with a fixed salary stipulated in the contract, there would be greater incentive to avoid effort. When the worker is a residual claimant, i.e., will earn a percentage of the production, his interest in the final production will be greater, thus providing him with incentive to work harder.

Eswaran and Kotwal (1985) consider a different type of moral hazard that would arise when the owner avoids the managerial or administrative work. The authors analyzed leasing with tenancy share rent as a society in which the landowner leases the land and manages the business, while the tenant provides the labor and the supervision of the work. In this arrangement, the landowner, who has a higher level of education and more information about market conditions, has an absolute advantage in the administration (decision-making) of the business. In turn, the tenant would have a similar advantage regarding the supervision of the labor force and the production process itself, given that the majority of the labor would be supplied by his family. If the owner hired salaried workers to carry out the work, he would face moral hazard issues, as the workers would avoid work and the owner would never be able to completely supervise them. If the tenant organized the work under the terms of a fixed rent contract, he would encounter moral hazard as the owner would have no reason to worry about the business and he himself would not possess the skills necessary to run the business. Under a tenancy share rent contract, the incentive of any tenant to avoid work would not be eliminated, however it would be reduced, given that with this contract the owner and tenant are both residual claimants. Reducing the "effort" problem could result in the tenancy share rent becoming more productive than any other arrangement - in terms of using the land - for both parties.

Allen and Luck (2001) developed a model of contract choice based on the theory of transaction costs. The model ignores risk sharing and assumes that both parties are neutral to risk. The model considers that one determined area of land would be cultivated under leasing. The crucial decision is whether a cash rent contract or cropshare/sharecropping contract should be used. According to the authors, in this type of model, it is important to understand the incentives embedded in each contract.

In a cash rent contract, the producer pays an annual fixed amount (liquid) for the use of the land and has the right to the entire harvest. As a result, the producer provides the optimum quantity of his own factors of production, but tends to over-utilize any resource owned by the landowner. The producers can increase their wealth if they do not produce within the adequate rotation, if they use excessive quantities of chemical substances and fertilizers that damage the land, or if they use cultivation practices that increase current production, but have a negative impact on the future productivity of the land. In addition, the producer can increase his own returns if he manages the cultivation time, the application of fertilizers and the harvest. For example, if hail or storms are forecast, a producer can bring forward the harvest date of his own production.

In a sharecropping contract, the producer shares the harvest with the landowner. Since he will not receive the total harvest, the producer uses fewer factors of production and thus reduces the global distortion of suboptimal choices of the factors. As a consequence, the benefit of this type of contract is the limited incentive of the producer in overusing the landowner's factors of production, such as irrigation and soil nutrients.

It can be assumed that only the producer chooses the factors of production in the sharecropping contract, and the moral hazard characteristics of the model fall on the producer. Even though these contracts reduce the distortions of total factor use, there are additional costs resulting from the division of total production that are not present in cash rent contracts. A corollary of this model is the producer's incentive to underestimate both the quantity and quality of the production, generating a monitoring cost to the owner. For example, even if the quantity produced is not underestimated, the producer can keep the best hay for himself or choose the wheat with fewer weeds.

Transaction cost analysis models aim to uncover the determinants of the contract chosen. These models, however, implicitly assume exogenous risks related to production. If, in agricultural production, the stakeholders had symmetric and perfect information, it would be possible to precisely calculate both the factors of production that both the tenant/sharecropper with more knowledge (about the production process) uses, and the other tenant, who it can be assumed has less knowledge, uses. However, the exogenous risk and imperfect information make the contract extremely expensive and not viable, given the difficulty to calculate the quantity of factors of production that will be (or need to be) employed. It is therefore necessary to design contracts that minimize the cost of preparing and utilizing the factors of production used (Williamson, 1979; Murrell, 1983; Allen and Luck, 1993).

In summary, the transaction cost theory offers a basis to understand how land leasing and sharecropping contracts work. The transactions between the agents result in relative costs to establish, adhere to and enforce contractual rules. In addition, the contractual relationships are inserted in an uncertain environment, with limited rationality between the contracting parties, meaning that certain circumstances cannot be predicted (incomplete contracts) and opportunistic attitudes are favored. Regarding land leasing and sharecropping, timelines can be manipulated by the tenant/ sharecropper when they are unable to meet deadlines for various reasons (financial, personal etc.). Another unpredictable yet common action in these types of contracts - primarily in the case of poorer producers - is the failure to make the payments. In the case of failed crops, for example, the tenant/sharecropper may not make the payment for the rent of the land. Finally, it is worth mentioning the disinterest, or even total negligence, of many tenants/sharecroppers regarding the maintenance of the farm.

Applying the findings from this ample debate on land leasing and sharecropping to Brazil is not an easy task. On one hand, due to the available statistics, it is difficult to carry out a more detailed analysis regarding the incentives related directly to the producers and owners. To do as such, the authors (Almeida, 2002; Reydon and Plata, 2006; Ribeiro, 2010)

must analyze case studies that are almost always sporadic, given the difficulty in financing research of this type. On the other hand, this area of study has yet to generate a great deal of interest among Brazilian researchers, and to some extent, was brought to light from concerns voiced by international authors and organizations such as De Janvry et al. (2000), Deininger and Jin (2002), INCRA/FAO (2000) and World Bank (1993).

3. Land leasing and sharecropping in Brazil: key determinants

A solid doctrine considers that better defined property rights and more transparent contracts would enable more fluid and less costly transactions to take place on the land market (Demsetz, 1967; Feder and Feeny, 1993; Vogelgesang, 1996). Intrinsic to land leasing and sharecropping are a set of incentives for the contracting parties (i.e. landowners, tenants and sharecroppers) that shape the final results for each party. These incentives are not necessarily convergent. There are basically two ways to analyze the role that property rights play on the operations of the land market. One is a micro-institutional focus that investigates the importance of the agent's behavior in contractual relationships and to a certain extent, in the markets. The other is a macro-institutional focus that investigates the influence of public policy, laws, trials etc. on the definition of property rights and contracts.

Specifically in Brazil, for various reasons (i.e. socioeconomic, political, cultural and institutional), small producers, small holders and rural workers, above all, have struggled to gain access to land through leasing and sharecropping contracts. This statement may seem paradoxical as historically leasing and sharecropping contracts involved, almost uniquely, small producers and landless rural families, which lead to exploitation that many authors (Guimarães, 1968) classified as the remainder of feudalism or pre-capitalism modes of production. In an attempt to understand the rationality behind these contracts, we looked for the principle factors that affect the design, compliance with and performance of these agreements, hereinafter what we will call determinants (Figure 1).

It is essential to understand these determinants in order to comprehend land leasing and sharecropping in Brazil. In the face of strong indications that the contracts are inefficient mechanisms for poorer producers to access land, it is necessary to investigate the subject in more depth. In practice, would there be an anachronism in land leasing and sharecropping in Brazil? Would the contracts not in fact be instruments to improve the allocation of resources in agriculture as well as the socioeconomic conditions of the poorest producers, but a way to aggravate the ancient problem of extreme inequality in terms of the distribution of resources?

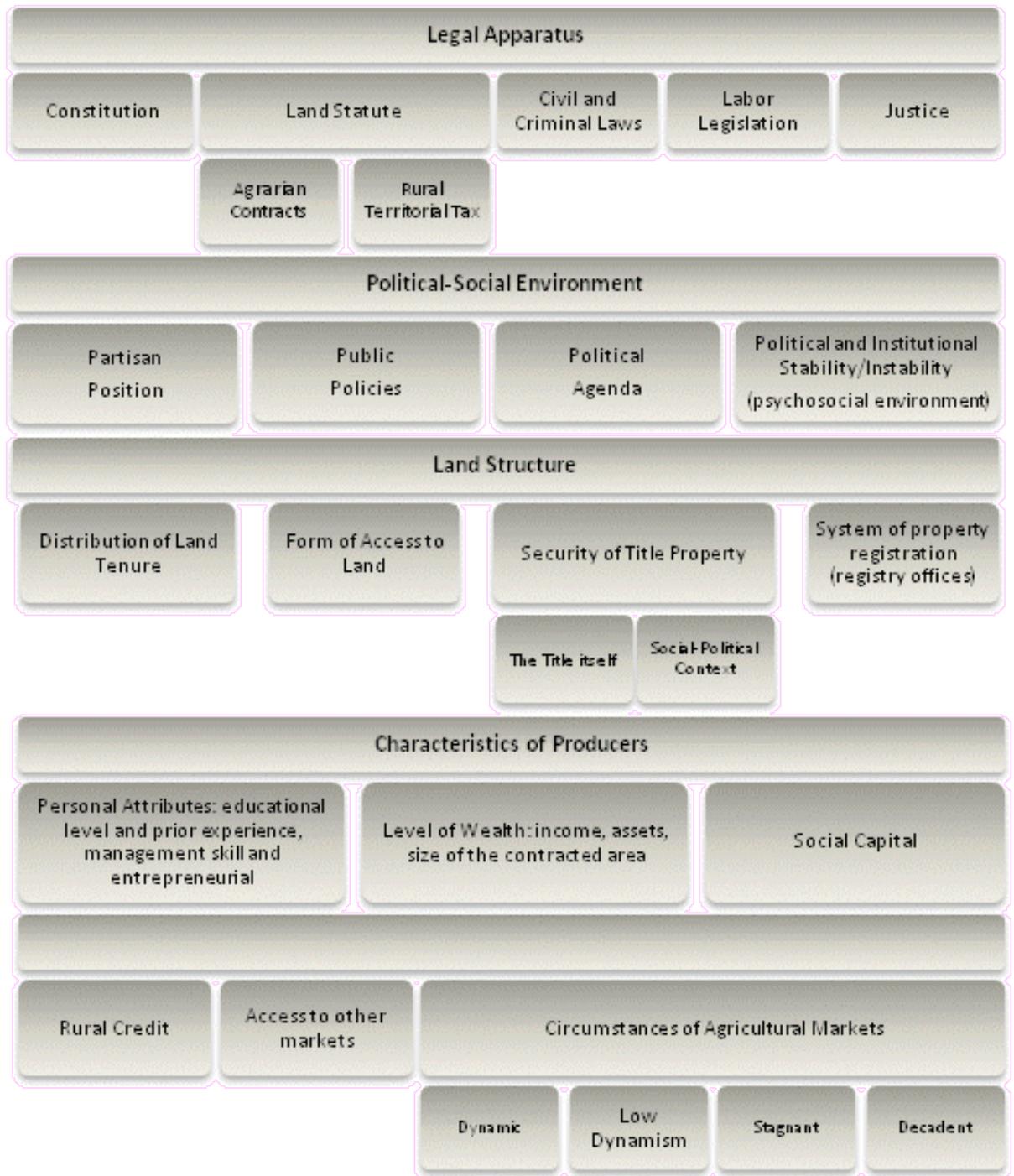


Figure 1 - Land leasing and sharecropping: key determinants
Source: Elaborated by the authors.

Land Contracts in the Brazilian Institution⁴

It is important to break away from the legal definitions that regulate land contracts, which define, ex-ante, incentives and transaction costs which may or may not be present in the final content of the contracts used in the various realities of the country. Brazilian Agrarian Law distinguishes the agrarian contracts as named or unnamed, typical or atypical. Unnamed and atypical contracts are defined as those that aim to regulate relationships that are

directly or indirectly related to the agricultural activity, yet not expressly recognized by the law. Classic examples of these contracts are the "foreiro" and the "meação". These relationships existed in the sugar cane fields in the Northeast of Brazil until the early 1960s. The forms of land use were characterized by the strong extra-economic subordination link between the worker and the landowner. This was either due to the lack of the worker's autonomy, who could only plant and sell according to the landowner's objectives, or due to the social relations that prevented the worker from achieving a certain degree of economic independence. The contribution of a free labor day for the owner (work-income) was called "foro" and the payment in products for the use of the land (product-income) was "meação" (Guimarães, 1968; Carneiro, 1978).

Named and typical contracts, however, are those deemed by agricultural legislation as typical forms of the temporary use and possession of land. In Brazil there are essentially two different forms: land lease and sharecropping.

A rural lease is "an agrarian contract by which a person is bound to allow another, for a fixed or undetermined period of time, the use of a rural property, part or parts thereof, including or excluding other goods, improvements made and/or facilities, in order to exercise farming, cattle raising, agro-industrial, extractive or a combination of activities, via compensation or rent, subject to the percentage limits permitted by the law" (art. 3º do Dec. 59.566/66).

According to the law, the lease price must not surpass 15% of the registered value of the property, considering the improvements included in the contract. One exception of this is the case of partial leasing, when the contract is for the possession and use of an area specifically chosen for high profitability exploration, in which the percentage threshold may reach up to 30% of the area's value. It is compulsory to establish the lease price in monetary value. Payment however can be made in cash or an equivalent quantity in products⁵. Regarding deadlines to make price adjustments, the law states that the price in the contract should be adjusted periodically. Rural sharecropping is defined as "the agrarian contract in which a person is bound to allow another, for a fixed or undetermined period of time, the specific use of rural property, part or parts thereof, including or excluding other goods, improvements, and/or facilities, in order to exercise farming activities, cattle raising, agro-industrial, extractive or mixed activities; and/or to provide livestock for raising and breeding, wintering, fattening, or raw material extraction from animal origin, by sharing the risks of fortuity and acts of god of a rural enterprise, as well as the fruits, products or profits accruing in the stipulated proportions, subject to percentage limits permitted by law" (art. 4º do Dec 59.566/66).

According to article 95 of the Land Act, the pre-emption right⁶ provides the tenant or sharecropper with the right to renew the contract or purchase the land in the case that the owner decides to sell it throughout the period of the lease and/or sharecropping term. If the owner intends to sell his land, he must notify the tenant or sharecropper via the court, or via

any other appropriate and secure means. The tenant or sharecropper has thirty days after receiving notification to exercise their preemptive rights.

In terms of making useful or necessary improvements to the rural property, the tenant and/or sharecropper are entitled to reimbursement, as per common law. Improvements not deemed necessary would only be compensated with express authorization from the lessor/landowner⁷.

Brazilian legislation aims to protect the rights of both the tenants and the owners equally, providing conditions to both parties to exercise the contractual activities. However, according to economic theory, contracts are imperfect and incomplete, and it is precisely this characteristic that significantly alters the results expected from agrarian contracts. In this case, the imperfections are linked to failures in the design, incomplete information such as risks inherent to the future, aspects that gave origin to incomplete contract theory (Simon, 1959; Milgrom and Roberts, 1992) as well as enforcement problems related to the workings of the Brazilian Justice system. They can also be associated to major disparities between the contracting parties, in terms of economic and political power, education, knowledge and the level of importance placed on the asset being negotiated.

Thus, the analysis must first consider this disparity that may exist between the parties, particularly when the contract of the lease/sharecropping involves small areas rented by less affluent or poor producers. It must also consider moral hazard, aggravated by the notoriously slow and imprecise Brazilian Justice system, which requires specialized agrarian departments. Once the contract has been signed, and the land is under the power of the tenant (or sharecropper) this asymmetry does in fact fall in his favor.

Characteristics of the Producers

In Brazil, both the macro-institutional context and the characteristics of the producers (primarily qualifications and level of wealth) affect the lease and sharecropping contracts, and their expected results (Reydon e Plata, 2006; Peres, 2003). On the one hand, the wealthier tenants and sharecroppers have greater access to financial services and purchase more inputs for production, and therefore have greater means to invest in modern technologies⁸. Contrary to this situation, the poorer tenants and sharecroppers find themselves in an adverse situation, and tend to be excluded by the landowners who wish to grant the use of their land to third parties.

Despite a lack of hard empirical evidence for Brazil, we can hypothesize that the producer's level of wealth influences how much effort he devotes to the economic activity, as suggested by Hoff, Braverman and Stiglitz (1993). It is possible to imagine that when a certain level of wealth is attained, the producer would have, for different reasons (diversification of interests, for example), less incentive to dedicate time and effort into production. In addition, a poorer producer with less capital would be more willing to work harder, in order to improve his financial situation, despite the restrictions faced regarding access to the goods and services markets and modern technology.

Qualification and experience make the tenants and sharecroppers more skilled, entrepreneurial and capable than the others. It is therefore natural that the owners prefer these producers. This could, in turn, increase competition for them, as they would have better external opportunities (i.e. other contracts) and eviction threats would be less effective against them. These threats would be effective against the producers with a large number of close substitutes (Banerjee et al., 1998).

The classic problem of selection comes into question, as it is not always possible to identify and distinguish *a priori* the most experienced and capable from the others, nor is it easy to separate the "adventurers" from the "serious and reliable" producers, to whom the landowners can "grant their land and sleep at night." In this context reputation is a key asset in leasing and sharecropping contracts. For the reasons mentioned, the contracts tend to involve people directly known to each other or through third parties, who have personal ties with both parties, thus representing a privileged informant.

Political-Social Environment

The influence of political factors represents an obstacle in the practice of land leasing and sharecropping in Brazil. This influence, above all, is seen in the judicial insecurity that, in the majority of cases, penalizes the owners with the least political power. The lack of clear rules, and particularly the inefficiency of the judicial system to respond quickly to conflicts can generate negative expectations with regard to the temporary lease of land to others. Almeida (2002) confirmed in interviews carried out with a group of landowners that this is a real fear, which is why many of the owners interviewed do not consider leasing their land to small producers. The risk of losing property rights indicates the legal uncertainty in vigor in Brazil, which ultimately creates an unfavorable environment in which agrarian contracts are established. On the other hand, the low cost of keeping unused lands, as well as impunity for unproductive properties results in producers having less incentive to concede their land to third parties. Moreover, pressure from large landowners⁹ have contributed to weakening the effectiveness of Agrarian Reform Programs - as well as technical and operational difficulties surrounding their implementation - that were unable to reverse the major inequality regarding the distribution of land and the social exclusion in rural Brazil¹⁰. The first attempt, in 1964, culminated in military dictatorship; the second, in 1985, failed amid democratic transition. Years later, the 1988¹¹ Constitution and Collor de Mello's government introduced additional legal and operational challenges for agrarian reform.

The Supplementary Law No. 76/1993 defined the summary of the rite¹² of property expropriation for agricultural reform, and constituted progress in this area. The expropriation process was, however, still extremely slow, making it difficult to implement agricultural reform plans (Buainain, 2006). An important change came with the introduction of the Supplementary Law No. 88/1996 that made it possible for the Government to seize the land (provisional property) within 5 days of filing of an expropriation suit. This measure, taken in response to the agrarian mobilization that marked the first half of the 1990s, favored the growth of settlements and reduced land disputes. The period from 1995 to 2002 was

characterized by a series of governmental measures, in response to the pressure from social movements that impelled the process of land expropriation and increased the number of settlements (Buainain et al., 2008). This policy remained in place from 2003-2010, however, according to an evaluation by the CPT – Pastoral Land Commission (2011) - the results were limited.

Since mid-1990s rural social mobilization and land conflicts have determined the pace at which agrarian reform has taken place, as well as where it has happened. If, on one hand, the failure of mechanisms that could facilitate the provision of land is clear, on the other, applicants for such land clearly exceeds the land available. Landless social movements are the key stakeholders claiming the constitutional right to access land. Their aggressive strategic actions, that clearly defy the law, negatively affect access to land leasing and sharecropping, above all by the producers who are the potential beneficiaries of a possible land distribution policy. As land leasing contracts with these producers serve as evidence of "unproductive" land, the majority of landowners avoid such contracts. The fact that the profile of a lease/sharecropping contract is unconditionally related to the profile of properties that may be expropriated for means of agrarian reform reinforces the fears of landowners to have their land expropriated.

Distribution of Land Ownership

Land ownership has always been synonymous with political power, wealth and status in Brazil. Given that the land is a productive and non-reproducible good¹³, it became relatively profitable under the institutional context effective in the country – which has always made it possible to keep unproductive land at a low cost – to control large areas and use them in extensive activities requiring little investment and employment of labor, such as extensive cattle operation (Almeida, 2002). The country's land tax system enables the maintenance of large properties, as Rural Land Tax is negligible, and the enforcement of both environmental and labor relations is relatively weak.

Over a number of years, Brazilian macroeconomic history has registered high monetary instability and slow development of the financial system. Thus, land took on the function of a valuable reserve asset (Saiad, 1982) - a characteristic that to some extent still exists today. The purchase of assets that can increase in value over time and provide a level of liquidity, was a solution that enabled economic agents to safeguard and increase the profitability of their assets. Despite its relative abundance, land surprisingly assumed this function in Brazil.

It is worth mentioning that the very strategy of agricultural development, adopted in the 1950s, increased the unequal distribution of land ownership. Studies (Rezende, 1985; World Bank, 1993) show that the subsidized rural credit policy released funds to borrowers for the purchase of new land, which strengthened the pattern of accumulation, as named by Buainain (1998) and Buainain et al. (2014). Ownership meant guaranteed access to low

interest credit. Thus, an unhealthy relationship between credit and ownership was created. This relationship both facilitated and encouraged the concentration of the agrarian structure.

Property Title Security

Like other stakeholders, the landowner aims to maximize present and future monetary gains (in addition to his social and political gains) derived from his property. When the land leasing/sharecropping contracts do not represent a profitable deal, the uncertainty surrounding the owner's future gains rises. This could cause the owner to decide not to temporarily rent his land, primarily if the cost to keep inactive land is low (Sabatto, 2008).

In addition, one of the disadvantages of a leasing/sharecropping contract is that for the duration of the contract term, the owner cannot offer the land as collateral. It can be assumed that when faced with uncertain decisions, the owners are usually risk averse. Thus, one can assume that landowners would only grant the right to use land in a leasing and/or sharecropping contract when the uncertainty level was so low that the contract possessed similar characteristics to a complete information contract (e.g., symmetric information). Thus, the owner would need complete information regarding the behavior of the tenant/sharecropper, in addition to other variables that directly or indirectly influence the specific conditions of the contract.

In Brazil, when the landowner signs a farm lease contract, there is a risk that the producer will file a suit alleging labor rights violations during the lease period. These contracts are almost always established in an environment of asymmetric information, where the owner often has a great deal of information about his property and limited information about the qualities of the tenant/sharecropper. In contrast, the tenant/sharecropper has limited information about the property but is aware of his own professional abilities and his future actions regarding the contractual agreements.

In an attempt to evade the problems created by both the asymmetries between the contracting parties regarding a contract between unequal parties, as well the unstable judicial system, the government was brought in to manage these contracts. The most relevant experiences are those of the Municipal Land Leasing Programs, implemented first in the state of Minas Gerais (Triangle Mineiro and Alto Paranaíba regions), in the mid-1980s, and later expanding to various Brazilian states (e.g. São Paulo, Paraná, Goiás, Bahia and Tocantins).

The principle objective of these programs was to reduce rural conflicts. The strategy used was to encourage the establishment of land leasing contracts between owners of unused land - not liable for expropriation - and producers looking for land. The Program design was meant to lessen the gap between the landowners and possible tenants, and assist both parties in the organization and contract details related to these deals. In the later stages, it was thought that these programs would contribute to municipal development, particularly in areas with low and basic primary production. The leasing of unoccupied and partly occupied areas could lead to increased use of idle resources in rural areas.

The landowners and tenants themselves could benefit at a municipal and national level. Through leasing the land, the owners could obtain revenue from areas that were otherwise inactive or unproductive, restore land destroyed by continuous use for cattle breeding, diversify activities and incorporate new areas into the production process. Similarly, tenants could expand the harvest area and release immobilization of capital with the purchase of the land; apply financial resources - primarily in equipment and agricultural inputs - to increase crop size; remain in the rural area, without having to move to the city to look for work; and develop agriculture in areas with favorable conditions for production.

The municipalities could encourage rational economic use of the soil and local resources; diversify productive activities; create new jobs; develop other economic sectors (i.e. commerce, industry and services) and increase tax revenue. Finally, from a national perspective, the benefits of leasing include making better use of land situated in regions less favorable to agriculture and strategic for the transportation of output; increased agricultural production, focusing on internal consumption and exportable surplus; and a fall in rural migration.

Evidence shows that Municipal Land Leasing programs in Brazil have either failed to meet promises and expectations, or have worked only in part regarding the proposed objectives, of which included: occupying idle or under-used areas, restoring damaged land, and minimizing rural conflicts. Therefore, even in the "successful" cases (such as the Triangle Mineiro and Alto Paranaíba), the program could not be sustained, and after just a few years it was no longer running, leaving no signs that it ever existed. One of the reasons for this failure is that essentially the programs were not of interest or useful to the owners, nor did they make it feasible to be explored by small tenants (Almeida, 2002; Buainain et al., 2007).

In some cases, problems regarding the design were highlighted to explain failures, and in others, financial restrictions and changes in the economic environment were raised as reasons justifying poor performance (Buainain et al., 2007). According to Maria (2005), however, in some areas of the Brazilian Cerrado this type of program helped transform unproductive land into productive land, as well as recuperate damaged pastures (especially, Triangle Mineiro and Alto Paranaíba) (Reydon e Plata, 2006).

Access to other markets (financial, input, services, commercialization etc.)

It is well known that, due to a lack of guarantees, low incentive from the owners themselves or inability to honor the debt, small producers have limited access to land and difficulty obtaining rural credit. Due to a lack of resources and to the challenges of securing credit from the banks, informal credit (i.e., cooperatives, other producers) can be used to finance productive activity¹⁴.

Thus, the poorest producers, particularly tenants and sharecroppers, substantially limit their potential productivity gains. The funds available to these producers do not cover all investments needed to reach the technological level and the production scale compatible with the revenues required to support the family, pay for the land use and accumulate capital.

The restricted access of these producers to input markets, the lack or inefficiency of technical assistance and infrastructure, and challenges in accessing more profitable marketing channels, combine to worsen their socioeconomic conditions. There are no incentives for the landowners to grant their land to tenants and sharecroppers with no or few productive and financial resources. This fact strengthens the adverse selection, which excludes precisely this group of producers and rural workers who could have access to land — and assumingly better living conditions— through leasing and sharecropping.

Landowners, by granting the land through leasing and sharecropping, essentially seek a stable income and reduced level of risk. They know that this revenue largely depends on the results of the tenant and/or sharecropper's economic activity, which in turn depends on their personal skills (i.e., qualifications and experience), on the access to financial markets and technical services, and on the actual conditions of the local markets in which they are working. Hence, the landowners' selection is based on the tenants and sharecroppers who best fit this profile. When implementing a public policy that promotes access of land to the poorest farmers, this fact must be considered.

4. Leasing and sharecropping: a depiction based on the 2006 Agricultural Census

This section aims to depict the dual nature of land leasing and sharecropping in Brazil. The 2006 Agricultural Census data on the main economic activities, the number of holdings and area strata for the entire country and for each individual state is used as a basis for this discussion. It is recognized that the use of Census data restricts the analysis, yet it is possible to illustrate the dual nature of these systems, associating it to the asymmetries mentioned above.

Leasing and sharecropping in Brazil take place throughout the national territory. Using census data, it is possible to trace the evolution/development of these systems in Brazil. In 1920, land leasing and sharecropping¹⁵ holdings represented just 3.6% of total rural establishments. In 1970 this number reached its maximum at 20.2%, and in 2006 fell to just 7.6%. It can be assumed that the growth is largely due to the expansion of the agricultural frontier since the 1950s, as characterized by José de Souza Martins (Martins, 1975; 2009) as pioneering fronts (*fronteiras pioneiras*). Up to the mid-1970s, small producers were in fact the pioneers and those responsible for occupying the frontier; however, these producers explored small areas, allowing for the private appropriation of large areas that made up the establishments that were explored, at least in part, via leasing and sharecropping.

Since 1970 both the number of establishments and the size of the areas under lease/sharecropping have declined. This can be attributed primarily to the change of pattern as well as the slowdown in expansion of the agricultural frontier. However, the increase in the costs of leasing/sharecropping regarding the option to use salaried employees and machines most likely also contributed to the decline (table 1).

Table 1 - Evolution of leasing and sharecropping in Brazil according to the profile of the person responsible^{1,2} (1920 – 2006)

Year	Total Establishments	Total area	Leasing and Sharecropping			
			Establishments		Area	
			N.º	%	N.º	%
1920	648,153	175,104,675	23,371	3.6	8,575,917	4.9
1940	1,904,589	197,720,247	221,505	11.6	19,117,981	9.7
1950	2,064,642	232,211,106	186,949	9.1	12,946,538	5.6
1960	3,337,769	249,862,142	579,969	17.4	18,109,824	7.3
1970	4,924,019	294,145,466	993,167	20.2	16,195,544	5.5
1975	4,993,252	323,896,082	863,978	17.3	11,222,459	3.5
1980	5,159,851	364,854,421	891,317	17.3	13,765,170	3.8
1985	5,801,809	374,924,929	1,006,020	17.3	13,291,817	3.6
1995	4,859,865	353,611,246	531,804	10.9	9,049,536	2.6
2006	5,175,489	329,941,393	359,699	7.0	8,148,599	2.5

¹ The total category includes agricultural establishments without a declaration of the area.

² Data from historical series are of available publications at the time. Specifically for the year 1995, minor corrections were made after the publication, which can cause a minimal difference

Source: Agricultural Census Data, several years.

Alston and Mueller (2010) observed that the relationship between the practice of leasing/sharecropping and economic activities adopted by the agents in Brazil should be viewed from the perspective of the physical and agroclimatic attributes of each crop. These attributes determine where the different crops can be planted and the size of the cultivated area. At the same time, the attributes of each crop, together with the characteristics of the landowner, imply which type of contract would deal better with production problems.

On these same lines, the information about geographic location, average size of the area in question, the dominant economic activities and the contractual relationships are enough to sustain the hypothesis that leasing/sharecropping are characterized by the existence of dualism in Brazil. Producers and sector leaders confirmed this fact in interviews carried out by the authors - many informally - in different states (Almeida, 2002; Buainain et al., 2007; Almeida, 2009).

A clear concentration of leased establishments in the Brazilian states of Ceara, Maranhao, Rio Grande do Sul, Parana, Piaui, Sao Paulo and Minas was found. In descending order, the largest leased holdings were located in Rio Grande do Sul, Mato Grosso do Sul, Sao Paulo, Mato Grosso, Parana, Goias and Minas Gerais. Combined, these states cover 81.3% of the leased agricultural area (Table 2).

The average size of leased establishments varied greatly among states. In Parana and Rio de Janeiro the average sizes were, respectively, 31.7 hectares and 30.3 hectares. At one extreme were Ceara and Piaui, both with holdings averaging 5 hectares, at the other were Mato Grosso and Mato Grosso do Sul, with average areas of 676.7 hectares and 414.6 hectares, respectively. This, in part, highlights the agrarian structure of the state, but above all

shows the dual nature of the lease and the differentiated role it plays in the local productive activity: small holdings, mostly subjected to precarious social relationships, and the typically capitalist lease driven by economic rationality, and remunerated according to the local markets conditions.

Regarding sharecropping, the 2006 Agricultural Census data showed that the majority of establishments were located in Ceara, Piaui, Minas Gerais, Maranhao, Rio Grande do Sul, Bahia and Parana. In terms of the size of the sharecropped area, Sao Paulo occupied first place, followed by Rio Grande do Sul, Minas Gerais and Parana. Sharecrop establishments in Ceara made up 28% of country's total and corresponded to only 7.3% of the area leased, and in Piaui, only 3%. The strongest evidence of duality was the average area size, which ranged from 3.6 hectares in Ceara to 422 hectares in Mato Grosso do Sul (MS). A certain number of the partnership/sharecrop agreements in MS are most likely leased contracts disguised as partnership agreements¹⁶, registered in this way for tax purposes.

Finally, the duality of leasing and sharecropping contracts in Brazil can be noted by observing the main economic activities adopted by the agents. According to the 2006 Agricultural Census data on leasing contracts, on one hand, soybean, rice, sugar cane and maize crops, which require high capitalization, the use of modern technology and medium to large scales of operation were found. On the other hand there is manioc, typical of small farm production, with a strong presence in Maranhao, where rice was also found. For decades the planting of rice has comprised the sequential production system, which includes the production of rice and staples for auto-consumption (usually produced in a small space close to the living area, known as *roça* in Brazil) as part of the pasture formation process.

Leases and sharecropping are very similar in terms of economic activities. Rio Grande do Sul and Maranhao produced a large amount of rough rice. Sao Paulo and Minas Gerais presented a large production of sugarcane and maize, respectively. Soybeans featured largely in sharecropped areas in Mato Grosso do Sul, Parana, Goias and Mato Grosso. In Rondonia bean crops stood out.

In summary, it can be deduced that on one hand the capitalist tenants and sharecroppers traditionally harvest rice in Rio Grande do Sul, sugar cane in Sao Paulo, and a large proportion of the cattle raising and grains (soybeans and maize) in Minas Gerais, Mato Grosso do Sul, Paraná, Goiás and Mato Grosso. The main economic activity almost always requires an intensive use of modern technologies. This practice allows for lower costs and greater competitiveness in domestic and international markets.

On the other hand, there are a substantial number of poor tenants (and/or sharecroppers) throughout the Northeast, specifically in Maranhao, Ceara, Piaui and Bahia. As a result of their socioeconomic conditions, it is not always possible for these producers to achieve a marketable surplus. The production (beans, rice and maize) often serves primarily to fulfill the family's subsistence needs, with occasional sales of surplus at local markets.

Even if it is not possible to encounter hard evidence, it can be affirmed that the unequal nature of the lease/sharecropping contracts fundamentally reflects the inequality and

asymmetry - of social and economic information - between the contracting parties. The capitalist tenant and sharecropper can partially attenuate the asymmetry of information through the establishment of a formal contract and presentation of guarantees (such as bank accounts). The small producer, however, largely establishes a personal relationship (informal contract), i.e. the owner prefers to grant his land to producers with whom he has a personal connection. In many cases this connection has been established for decades and passed down almost in the form of inheritance (parents and grandparents) (Almeida, 2002).

The tenants/sharecroppers with more capital have a greater incentive to make investments, due to greater access to financial resources (i.e. rural credit), or the faster return on their principal economic activity, generally commodities (soya, maize and sugarcane). This makes it possible for such producers to comply with their contracts.

While the small tenants and sharecroppers, due to their socioeconomic conditions, have less incentive to invest in productive activities, they face major difficulties in paying the land rent and complying with the deadlines set out in the contract. Thus, the landowners are more susceptible to possible opportunistic behavior on the part of the producers.

The following subsection analyzes leasing and sharecropping from a regional point of view, in order to identify the characteristics attributed to the individual functioning in each region of the country. The principal regional differences in terms of contractual relations will also be highlighted. In order of priority, the Southeast, Southern, Central-West, and finally the Northeast and Northern regions were chosen.

5. Final Conclusions

An analysis of land leasing and sharecropping in Brazil made it possible to better understand the economic and institutional "rationality" of these contracts. Identifying and discussing the main determinants was fundamental to understanding the particularities of contractual relationships in the country. The 2006 Agricultural Census data highlighted one of the hypothesis indicated in this study: that dualism exists in land leasing and sharecropping in Brazil.

We argued that the institutional framework established in Brazil, expressed, above all in property and contract rights, negatively affects the development of land leasing and sharecropping, particularly when the relationships involve poorer landowners and producers (with or without land). Despite the coexistence of underused land and the growth in the demand for land on the part of "landless workers" and small producers, the results show that regarding these two groups, the use of leasing and sharecropping is not being fully utilized.

In spite of the complex agricultural legislation that regulates contractual relationships, it would seem that leasing and sharecropping contracts are more of a hindrance than a solution. Deadlines are generally short, and defined solely according to the interests of the owners (i.e. recuperation of damaged soil, occupation of areas renowned for land conflicts, use of temporary workers on the farm, resolving family conflicts, etc.), and rarely seek stable conditions for the tenant/assignee. The small producer does not have the incentive - nor the

financial conditions - to carry out the necessary investments to increase productivity and lower risks. He also faces a number of obstacles regarding access to credit and other markets. Under these circumstances, the producer tends to view leasing/sharecropping as temporary situations, and not as alternatives to land access. Thus, in general, small tenants and shareholders are not able to achieve satisfactory results, for the previously mentioned reasons (restricted access to different markets, level of wealth/education and experience, among others), to obtain sufficient surplus to be able to pay the land rent.

The nature of leasing/sharecropping in Brazil impedes the small producer from maintaining a livelihood. The 2006 Agricultural Census data show that, despite the practice existing all over Brazil, the economic relevance of the contracts is geographically located and, in the many cases, restricted to producers with more capital (i.e. in Sao Paulo, Minas Gerais, Mato Grosso do Sul and Rio Grande do Sul). The predominant economic activities in the more promising areas explored are those with a higher aggregated value and that are easy to commercialize on the national and international market (sugarcane, soybean and maize, for example).

The descriptive analysis of the 2006 Agricultural Census data reveals some of the facts discussed in the specific literature about land leasing and sharecropping contracts, particularly about the incentives and above all risk sharing, that lead to efficiency gains in the utilization of productive resources.

At one extreme, there are contracts that involve large landowners and producers, whose economic activities (cattle breeding, soybean, maize and sugarcane) have major consumer markets. In terms of infrastructure, these farms utilize the latest machines and equipment, modern inputs and technical assistance services. The tenants and/or sharecroppers have more capital and experience, as well as administrative and business skills that enable the running of the business to keep up with market demands. All of these factors contribute to establishing a contract that works well and generates profits.

At the other end, we have contracts established between small landowners and small producers. The contracting parties, in general, are family members, neighbors or friends. Due to a lack of productive and financial resources, these tenants/sharecroppers cultivate low cost products that require minimal investment and small areas, such as fruit and vegetables. Any surplus produce is sold at street markets, small groceries and producer warehouses in the region. However, in the majority of cases, they are unable to produce enough even to provide for their own families. Despite having farmed for years, these producers rarely have access to dynamic markets and the most favorable marketing channels.

The most efficient use of leasing and sharecropping in Brazil, particularly for small producers, depends not only on the availability of unproductive/underused land and rural workers with no land of their own, but principally, on an institutional framework that enables and stimulates the establishment of contracts. Among other factors, mechanisms of ownership rights for the landowner must be heightened. In Brazil, granting land to small producers or landless farmers is still seen as a way to exploit the weakest, a sign of absenteeism or land

idleness and unproductivity. In this case, the landowners have no incentive to establish leasing and sharecropping contracts, as this would put their own properties at risk of expropriation by the government or occupation by social movements.

Moreover, the organizations that represent small producers and landless farmers appear not to view leasing and sharecropping as an alternative to land access. For example, the Programa Cédula da Terra²¹, received strong opposition from social movements and certain institutions (i.e. the CPT), which points out the unwillingness to accept other alternatives besides "expropriation of the agricultural estate". After a decade since the introduction of the Land Granting Program (known today as Agrarian Credit Program), many adjustments were made, moving away from the original concept. There are still conflicts with the representative part of the social movement and it has not prospered as hoped when it was launched in 1997²².

In conclusion, without overcoming the instability of ownership and the acceptance of beneficiary parties, it will be difficult to create a favorable context for the use of land leasing and sharecropping, even when, from a technical angle, these contracts are appealing and useful instruments that could in fact alleviate the agrarian problem in Brazil.

Notes

1 De Janvry et al. (2000) found that between 1950 and 1990, the use of land leasing decreased in all Latin American countries. Considering the total area, participation varied from 1.5% in Bolivia (1984), 1.6% in Paraguay (1990), 1.1% in Mexico (1991) to 8.2% in Chile (1980). In Uruguay, however, 20.6% of the land was leased in 1980. This relatively high participation of land leasing can be explained by the fact that the country does not have a legacy of agrarian reform interventions (pg. 10). In Central America, however, specifically El Salvador, Guatemala and Costa Rica, an increase in leased land was noted between 1950 and 1970. According to the producer's profile (i.e. landowner, settler with no final land titles, tenant, sharecropper, occupant or farmer with no land), as given by the 2006 Agriculture Census, leasing and sharecropping made up 7.2% and 3.3% respectively, considering the total number of establishments and areas of land dedicated to farming.

2 See, among others, Deininger and Jin (2006), Banerjee et al. (1998), Boadu (1992) and Arnalde et al. (1986) for information about the use of land leasing and sharecropping in Ethiopia, India, Ghana and the European Economic Community, respectively.

3 With the contracts come costs associated to their outline, implementation, monitoring, and principally, costs related to resolving disputes that arise from not complying to contractual relationships established (Almeida, 2002).

4 For further details on this subject, see Almeida and Buainain (2013).

5 The legislator appears to align the norms to the Brazilian agrarian scenario, where, in many contracts, the lease price is determined according to the value of the product that will be grown. There are also a substantial number of informal contracts. This phenomenon is present in the planting of grains, sugarcane and citrus fruits (Garcia, 1996).

6 For more information on this subject, see Grassi Neto, 1994; Hironaka, 1990; Pettersen and Marques, 1977; Opitz and Opitz, 1971, among others.

7 Non-necessary improvements include anything exclusively for the entertainment, leisure or recreation of those living in the property. Opitz and Opitz (1969) commented on the importance of characterizing the type of improvement in order to avoid misinterpretations. They highlight that "it is necessary to check regional circumstances, where, in many cases, an improvement is necessary in one region and unnecessary in another" (pg. 246).

8 There is ample evidence showing the difficulties that small producers have in accessing the product and service markets in general, as well as the underdevelopment of these markets in the rural areas (Peres, 2003).

9 The power of land owners is revealed in their capacity to influence public policy, particularly in delaying the review of the institutional framework to create and stimulate "mobility" in the use of land.

10 Buainain argues that the agrarian reform program no longer has the means to promote the restructuring of the distributive profile of land ownership in Brazil. Achievements are also expected to be minimal to combat poverty and growth in agricultural production due to failures in design and implementation. See, for example, Buainain, Antonio Marcio. *Reflections on the current model of agrarian reform: Revolução no Campo* 1st edition, Rio de Janeiro. Konrad Adenauer Foundation, 2004, V. 03, pg. 49-64. ISBN 8575040723, and Buainain, Antonio Marcio. *Reforma Agrária por Conflito In: Luta pela terra, reforma agrária e gestão de conflitos no Brasil - Coleção Instituições, Agricultura e Desenvolvimento Sustentável*, 1st edition, Campinas: Unicamp Editor, 2008, v.1. ISBN 9788526807846.

11 Constitution only guaranteed private property rights, which notwithstanding are bounded by the social functions of ownership.

12" The summary proceeding is characterized by the agility in the practice of acts and procedural requirements, by reducing deadlines and exemption of formalities inherent in the ordinary procedure. It is, therefore, faster" (Sampaio, 1999: 21).

13 Technological progress allows for the "creation" of land, whether by the growth in production and productivity of the land or via methods such as hydroponic and plasticulture. The land therefore continues to be a non-reproducible asset.

14 Bardhan and Udry (1999) affirm that the development of the rural credit market can stimulate investments, given that it facilitates the conversion of land into a liquid asset and make its commercialization feasible.

15 For a more detailed explanation of the definitions of "establishments" and "the profile of the person responsible" adopted in this study, please see Almeida (2009).

16 Some of the characteristics of disguised leases will be analyzed later in the study on Mato Grosso do Sul.

17 According to Almeida (2002), the tenant's bargaining power is directly linked to the share of his production quota. Thus, producers who are able to extract a larger share of the output for themselves, have greater bargaining powers regarding the lease contract.

18 The following data shows Gini index evolution in Rio Grande do Sul from 1970 to 1995-96: 1970 (0.756), 1975 (0.755), 1980 (0.762), 1985 (0.764) and 1995-96 (0.763) (Hoffmann, 2000).

19 It is important to mention that in Rio Grande do Sul there are places (Pampa Gaucho, for example) where formal agriculture predominates.

20 http://www.agrometrika.com.br/boletins/agosto_2014/#1

21 A program that promoted the acquisition of land via the concession of agricultural credit, instead of expropriation and settlement.

22 For an analysis of the subject see Buainain et al. (2002) and Buainain (2004).

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