
The Persistence of Land Concentration in Colombia: What Happened Between 2000 and 2010?*

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9.1. Introduction

The high concentration of rural property has been a constant in the history of Colombia. After three failed land reforms in the twentieth century, and decades of armed conflict and public policies that have favored the big landowners, high land concentration persists, with an escalating trend, and now the Gini coefficient reaches a value of 0.86, one of the highest in the world. During the period between 2000 and 2009, rural property became even more concentrated: particularly from 2005 onwards the trend increased, not only because of an increase in the number of properties but also due to the acquisition of new ones by the same owners.

The causes of land concentration in rural areas are diverse. The initial distribution of land during the colonial period, the policies governing the assignment of frontier land, colonization processes, public policies favoring large landowners, and the armed conflict are the factors that have determined the current land distribution in Colombia. Moreover, the thinness of land markets, and their strong fragmentation

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and high transaction costs are obstacles for market transactions that would transfer land to more efficient producers and would improve equity in land distribution. Finally, the three land reforms undertaken in the twentieth century failed because of the pressures of large landowners, and in the case of the 1994 reform, the intensification of the armed conflict and the ineffectiveness of governmental institutions.

The aim of this chapter is to study the evolution of land concentration in rural areas during the period between 2000 and 2009. We analyze the evolution of the concentration of rural property and its regional distribution. We also identify some exploratory hypotheses about the possible causes of the distribution of property in Colombia, with a particular emphasis on the dynamics of the armed conflict.

Our results show a slight increase in land concentration, especially from 2005 onwards. The concentration has deepened as a result of increases in the size of land plots and the acquisition of new properties by those who were already owners in year 2000. The statistics also reveal a considerable increase in the number of new property owners, presumably due to transferences in the land market, the updating of the cadastral registry, and land seizures.

The municipalities with largest land concentration in rural areas are located in isolated areas at altitudes higher than 2000 meters above sea level (masl), where production is non-agricultural, the soil is poor, natural resources are exploited, and on settlement areas. Finally, although the econometric estimates are preliminary, we find a possible correlation between increases in land concentration and the emergence of new owners, on the one hand, and the presence of armed groups, on the other.

The chapter is organized in four sections, including this introduction. The second section reviews the literature on the distribution of land in Colombia and its relationship with the prolonged civil conflict. The third section contains an analysis of national and municipal trends of land concentration for the period between 2000 and 2009. The fourth section concludes.

9.2. The Distribution of Land in Colombia and the Civil Conflict

In this chapter, we describe the evolution of land distribution during the first decade of the twenty-first century and also identify some potential determinants of the increasing trends. However, historical processes play a dominant role on current land distribution, and for this reason in this section we provide a brief historical overview.

The unequal land distribution in the twenty-first century is the result of state policies that originated in the colonial period and were consolidated in the following centuries. The dynamics of land concentration have also been entangled with the country's internal conflicts over the past two centuries. This section examines the historical dynamics of land distribution in Colombia, and analyzes the effect of public policies, the armed conflict, and drug trafficking on land distribution in Colombia, which is one of the most highly concentrated in Latin America and the world.

The structure of land distribution in Colombia began in the colonial age and consolidated up to the beginning of the twentieth century. Since the colonial period, the predominant premise to assign land was the Spanish concept of “*morada y labor*” (dwell and work), which contemplates that land should be assigned to the person who dwelled and worked on his plot. Ferdinand II of Aragon defined this condition for assigning land plots. In later years, the appropriation of frontier lands was permitted upon payment of a fixed sum to ensure a valid title, with the possibility of proving dwell and work later on. These regulations allowed for the best land in the valleys and high plains to be appropriated in the sixteenth century, either through valid property titles or through informal tenancies. Regulations for the exploitation of uncultivated lands were expanded in the following years; in 1777, the colonization of new land was permitted, with a commitment by the settlers to clear, sow, and cultivate within a fixed time limit, and in 1821 a law was passed allowing for the transfer of public lands to private owners.¹

Land properties of the Catholic Church and indigenous reserves were covered by special regimes that were later abolished, that of the

¹ Albert Hirschman, 1965, *Journeys toward Progress: Studies of Economic Policy-Making in Latin America*, Garden City: Doubleday.

reserves in 1810 and that of the Church in 1861 through the expropriation (*desamortización*) of mortmain. Powerful groups of the population took advantage of both processes to acquire the great majority of these properties and thus consolidated their regional predominance.² In the case of expropriations against the Church, the decision to auction its land plots substantially reduced prices, favoring the businessmen and financial groups that were able to buy them. This redistribution of a third of the country's land in favor of a minority increased land concentration.³ After the independence from Spain, the assignment of frontier land to pay war debts and military services created new land-owning elites.⁴

Despite this continual process of land assignment, at the end of the nineteenth century and beginning of the twentieth, there were still great tracts of land available for settlement. Furthermore, a high percentage of land, both in large and small land holdings, lacked formal property titles.⁵ The possibility of colonizing lands eased the social tensions of the nineteenth century by allowing a large mass of people who worked as laborers or sharecroppers (*aparceros*) to colonize new land and become landowners.⁶ Nevertheless, the big landowners likewise benefited from the colonization processes, as they were able to enlarge their plots and consolidate some of the large properties that exist to this day.⁷

Powerful and influential groups of the population participated in the process of granting titles for frontier lands, which presumably contributed to the high concentration of land ownership in Colombia. Given the close links between these powerful groups and the state in-

² *Id.*; Alejandro Reyes, 2009, *Guerreros y Campesinos: El Despojo de la Tierra en Colombia*, Bogotá: Editorial Norma.

³ Paul Oquist, 1980, *Violence, Conflict and Politics in Colombia, Studies in Social Discontinuity*, New York: Academic Press.

⁴ Reyes, *supra* n. 2.

⁵ Oquist, *supra* n. 3.

⁶ *Id.*; Hirschman, *supra* n. 1.

⁷ Catherine LeGrand, 1994, "Colonización y Violencia en Colombia: Perspectivas y Debate", in *El Agro y la Cuestión Social*, Absalón Machado (ed.), Bogotá: Tercer Mundo Editores.

stitutions in charge of granting property titles, as well as these groups' advantages in accessing both the information required to claim lands and capital to cover the transaction costs, the programs for awarding titles seem to have amply favored them.⁸ Similar situations occurred in other Latin American countries, where the granting of titles promoted the creation of large properties.⁹

The colonization processes caused land disputes between landowners and settlers. Peasants colonized lands beyond the agricultural frontier and large landowners seized them, turning the settlers into sharecroppers. During the period between 1880 and 1925, squatters created organizations to protect themselves from the abuses of large landowners and relied on institutional channels to solve land disputes.¹⁰

In the 1920s, economic factors increased the value of land and encouraged the expansion of the agricultural frontier, aggravating the expulsion of settlers and turning disputes over land into violent conflicts. First, by the mid-1920s uncultivated lands located in the center of the country had all been assigned, and the agricultural frontier in the Andean region had been exhausted.¹¹ Second, drops in farmers' per capita income due to the fall in coffee prices encouraged small producers to migrate and settle on privately held land.¹² Third, the scarcity of labor in large properties fostered the eviction of sharecroppers and settlers, who were then turned into day laborers.¹³

Incentives to accumulate land lay, and still lies, not only in its rising prices but also in the alternative uses of land. During the first half of the twentieth century, fiscal policies increased taxes on the earnings from industrial and commercial activities, while those on ag-

⁸ Hans Binswanger, Klaus Deininger, and Gershon Feder, 1995, "Power, Distortions, Revolt and Reform in Agricultural Land Relations", in *Handbook of Development Economics*, J. Behrman and T.N. Srinivasan (eds.), Elsevier Science.

⁹ Karen Macours, 2009, "*Land Titles and Conflicts in Guatemala*", Res Working Papers Csi-I64, Washington: IADB.

¹⁰ LeGrand, *supra* n. 7.

¹¹ *Id.*; Hirschman, *supra* n. 1.

¹² *Id.*

¹³ Oquist, *supra* n. 3.

ricultural and stock-raising production and landholding were practically non-existent. Land and cattle were thus a useful device to fictitiously reduce earnings from other activities in order to pay less taxes.¹⁴ Besides contributing to decrease tax payments, land is a useful hedge against inflation and can be used as collateral for loans. Consequently, land prices exceed the flow of income from agricultural and stock-raising profits, thus making investment in land more attractive and excluding poor families from access.¹⁵

Disputes between large landowners and squatters left the official institutional channels during the mid-1920s. Peasants shifted from defensive to offensive activities and their initially isolated and sporadic attacks became coordinated actions by the end of the 1920s.¹⁶ Response by large landowners did not take long and erupted with renewed violence. The eviction of squatters without any apparent justification increased, sharecropping weakened, and large landowners preferred to hire day laborers, especially in the cattle raising regions, an activity with few labor requirements.¹⁷

In some cases large landowners promoted the creation of groups of “loyal” peasants with the aim of replacing previous sharecroppers and tenants. Evictions were often accompanied by violent acts, like the burning of homes, in order to prevent sharecroppers from returning later.¹⁸ The forced abandonment and coercive sale of lands caused political conflicts in some regions during the 1930s.¹⁹ Informal land holding and insecure property rights created opportunities for false claims to land and abuses.²⁰

The state’s inability to settle disputes between squatters and large landowners, and its clear reluctance to expropriate private property, was compensated by the opening of new territories for colonization.

¹⁴ Hirschman, *supra* n. 1.

¹⁵ Alain De Janvry and Elisabeth Sadoulet, 2001, *Access to Land and Land Policy Reforms*, Unu-Wider Policy Brief No. 3, Helsinki.

¹⁶ LeGrand, *supra* n. 7; Hirschman, *supra* n. 1.

¹⁷ LeGrand, *supra* n. 7.

¹⁸ Hirschman, *supra* n. 1.

¹⁹ Oquist, *supra* n. 3.

²⁰ Macours, *supra* n. 9.

This led to recurrent cycles of colonization, land seizures, and intensifying conflict. In addition, in these regions the awarding of titles to frontier lands was never accompanied by state presence in the form of infrastructure investments, provision of subsidies for squatters, or social investment.²¹

The escalation of disputes led to the passing of Law 200 of 1936. The main objectives of the Law were to clarify property titles, to introduce stricter regulations about the eviction of sharecroppers, to encourage the productive exploitation of land (with a threat of expropriation), and to undertake a program of land reform. Despite the good intentions of Law 200, its deficient design created incentives opposite to what was originally intended. Sharecroppers initiated legal actions to nullify the titles of large landowners, while the landowners, fearing the loss of their lands, stepped up the massive eviction of sharecroppers.²² This was an incentive for many large landowners, who had formerly made intensive use of manpower, to switch to intensive capital investments, and to enlarge cattle stock at the expense of agricultural production.²³ Large landowners also took advantage of the law to legalize large stretches of land.²⁴

The Law was accompanied by state policies in favor of large landowners, such as the provision of credits by the government banks (*Caja Agraria*), technical assistance from the Ministry of Agriculture, police protection against land invasions, and the support of judges in the resolution of land disputes.²⁵ The convergence of all of these factors led to an artificial but significant increase in productivity and contributed to increased land concentration.²⁶

²¹ Hirschman, *supra* n. 1.

²² *Id.*; Binswanger, Deininger, and Feder, "Power, Distortions, Revolt and Reform in Agricultural Land Relations"; Oquist, *supra* n. 3.

²³ Oquist, *supra* n. 3.

²⁴ Reyes, *supra* n. 2.

²⁵ Oquist, *supra* n. 3.

²⁶ Alain de Janvry and Elisabeth Sadoulet, 1993, "Path-Dependent Policy Reforms: From Land Reform to Rural Development in Colombia", in *The Economics of Rural Organization: Theory, Practice, and Policy*, K. Hoff, A. Braverman, and J. Stiglitz (eds.), Johns Hopkins University Press.

The failed land reform of 1936 did not ease the growing conflicts over land. Quite the opposite, such disputes were exacerbated during *La Violencia*. On the one hand, in many regions the traditional conflicts among members of indigenous groups, large landowners, and squatters continued, and traditional disputes over land control mingled with partisan conflicts.²⁷ On the other hand, the purposive use of violence to seize lands and displace people became a common practice in certain regions. The forced displacement of landowners, abandonment of properties, and forced sales of land at low prices were strategies employed by different interest groups during *La Violencia*.²⁸ Moreover, in some cases the payment to combatants and loyal peasants was made assigning land in the dominated territories.²⁹

Uncertainty over property rights and the total absence of state institutions in certain regions facilitated land seizures. The massive and violent redistribution of land frequently occurred in areas that underwent complete state collapse. This was especially common in areas where the property titles of large landowners were doubtful, regions of intensive colonization processes, and areas occupied by indigenous groups.³⁰ Even before *La Violencia*, there were clear signs of strong competition for land between squatters and large landowners; this led to disputes that could not be settled through formal channels due to the lack of participatory political mechanisms and state institutions.³¹ Even though small landowners aligned themselves with one of the two main political parties in an effort to protect their property, they were the most affected by land seizures.³² According to Oquist's estimates, over 393,000 hectares of land in Colombia were subjected to seizure during this period.³³

²⁷ Oquist, *supra* n. 3; Mary Roldán, 2002, *Blood and Fire: La Violencia in Antioquia, Colombia, 1946-1953*, Durham: Duke University Press.

²⁸ Oquist, *supra* n. 3.; Roldán, *supra* n. 27.

²⁹ Roldán, *supra* n. 27.

³⁰ Oquist, *supra* n. 3.

³¹ Roldán, *supra* n. 27.

³² Oquist, *supra* n. 3.

³³ *Id.*

Informal tenure and state absence facilitated land seizures and intensified the conflicts in recently colonized regions. Given the weak social ties in these regions, and the absence of state institutions, the social and legal controls over landowners were practically non-existent.³⁴ Disputes over land frequently escalated into violent conflict, as has also happened in Brazil and Guatemala in areas where property rights are highly informal.³⁵ Even though the land reform of 1936 did result in the formalization of some land titles, this process was insufficient due to the weak state presence and its inability to effectively protect property rights.³⁶

The process of land seizure during *La Violencia* modified the structure of landholdings in certain regions of the country, and increased further the concentration of ownership in a few hands.³⁷ Conflict over land persisted in certain regions once *La Violencia* ended in 1953, while other regions saw the appearance of new waves of migration, some of which are immersed in the civil conflict to this day.³⁸

The Colombian government's response to processes of forced displacement and land usurpation was similar to the solution adopted at the end of the 1930s: frontier land assignment and a land reform that was again unsuccessfully applied. The rate of frontier land allocation increased significantly during *La Violencia*. LeGrand finds that 60,000 hectares were annually assigned between 1931 and 1945; 150,000 hectares between 1946 and 1954; and the figure rose to 375,000 between 1955 and 1959.³⁹ Once the period of *La Violencia* was over, coloniza-

³⁴ De Janvry and Sadoulet, *supra* n. 15.

³⁵ Lee J. Alston, Gary D. Libecap, and Bernardo Mueller, 2000, "Land Reform Policies, the Sources of Violent Conflict, and Implications for Deforestation in the Brazilian Amazon", *Journal of Environmental Economics and Management* 39, 2; Macours, *supra* n. 9.

³⁶ Macours, *supra* n. 9; Klaus Deininger and Gershon Feder, 1998, *Land Institutions and Land Markets*, World Bank Policy Research Working Paper No. 2014, Washington: World Bank.

³⁷ Oquist, *supra* n. 3.

³⁸ Reyes, *supra* n. 2.

³⁹ LeGrand, *supra* n. 7.

tion programs were undertaken to resettle families of peasants and displaced persons in remote regions.⁴⁰

During the Carlos Lleras presidency, Law 135 of 1961 was passed with the purpose of carrying out an ambitious land reform program. The law's good intentions never resulted in a land redistribution. First, the expropriated lands were in remote regions and with poor soil quality. Second, the amount of expropriated land was far below the established targets. In the first year of the land reform, little more than 2,300 families received lands, the target being 10,000 families. By 1972, 123,000 titles had been granted, far short of the 935,000 families that had been identified as eligible, and only 1.5% of all large landholdings had been redistributed.⁴¹ Third, the INCORA (the Colombian Institute of Agrarian Reform, which was created with the specific purpose of implementing Law 135) geared the land reform efforts towards granting titles to frontier lands, a less controversial initiative than expropriation. In fact, during these ten years, 85% of its activities concentrated on granting legal property titles to newly colonized lands.⁴² Lastly, alongside Law 135, the Colombian government devised and implement a set of public policies that favored large producers and promoted the adoption of new technologies. These large investments improved the value of large landholdings, and made compensation payments for expropriation unaffordable for the state.⁴³

The power of large landowners wound up thwarting the country's second land reform.⁴⁴ This happened despite the fact that the productivity of land in the 1960s was considerably higher on small properties, due to a more intensive use of land and the bigger proportion of it devoted to agriculture instead of cattle-raising.⁴⁵ In 1972, in the face of endless pressures from large landowners, the Chicoral Pact was nego-

⁴⁰ Hirschman, *supra* n. 1.; LeGrand, *supra* n. 7.

⁴¹ De Janvry and Sadoulet, *supra* n. 15.

⁴² Donny Meertens, 2005, "Tierras, Derechos y Género: Leyes, Políticas y Prácticas en Contextos de Guerra y Paz", in *Informe Final*, Unifem.

⁴³ De Janvry and Sadoulet, *supra* n. 15.

⁴⁴ Meertens, *supra* n. 42; De Janvry and Sadoulet, *supra* n. 15.

⁴⁵ Albert Berry, 1972, "Farm Size Distribution, Income Distribution, and the Efficiency of Agricultural Production", *American Economic Review* 62, 2.

tiated and land reform came to an end. Law 4 of 1973 confirmed the end of land reform by limiting the invasion of frontier land to cases where they remained unproductive and abandoned; this was a return to the regulation of frontier land in the earlier Law 200 of 1936.

Thus, it is not surprising that the results of the land reform contemplated in Law 135 were insufficient. During the decade in which the reform was in effect (1960-1970), ownership became more concentrated by an increase in large properties and a regrouping of smaller ones.⁴⁶ The percentage of lands subject to intensive use on large properties increased by 59%, whereas it remained constant on small ones.⁴⁷ In sum, the land reform was effective in legalizing titles to frontier land properties, but inadequate as a means to redistribute land.⁴⁸

Throughout the 1970s and 1980s, public policies favoring large landowners endured, as well as the granting of frontier lands with poor soils in remote zones to peasants. Investments in public goods in rural areas, such as roads, irrigation channels, and subsidized loans, continued to aim at the owners of large properties. In addition, the adoption of capital-intensive technologies and the expansion of cattle raising diminished the opportunities of employment for peasants.⁴⁹ While this policy explicitly favored the colonization of frontier lands, the great majority of colonized lands did not have formal property titles. An eloquent figure is that only 1.4 million of the 3.4 million colonized hectares had been granted property titles by 1980.⁵⁰

The emergence of drug trafficking and its consolidation in the 1980s, together with the underlying prevalent dynamics, led to an even higher land concentration in Colombia, and to further evictions of peasants from colonization areas. In addition to land being a symbol of social prestige and an asset with multiple uses, the traffickers' accumu-

⁴⁶ Luis Lorente, Armando Salazar, and Angela Gallo, 1996, “*Distribución de la Propiedad Rural*”, *Coyuntura Colombiana* 13, 2B.

⁴⁷ *Id.*

⁴⁸ Binswanger, Deininger, and Feder, *supra* n. 22.

⁴⁹ De Janvry and Sadoulet, *supra* n. 15.

⁵⁰ Dario Fajardo, 1994, “*La Colonización de la Frontera Agraria Colombiana*”, in *El Agro y la Cuestión Social*, Absalón Machado (ed.), Bogotá: Tercer Mundo Editores.

lation and purchase of land had a strategic purpose, as it permitted them to legalize illicit capital and provided areas where they could be safe or hide, and also to build an infrastructure of laboratories and landing strips.⁵¹ Drug traffickers most frequently purchased land in consolidated areas and at higher prices than the returns from agricultural exploitation. The revenues from the sales of these lands were in turn invested in the purchase of more extensive properties in colonization areas. In this way, drug trafficking partly financed a new wave of colonization.⁵²

During the 1970s and 1980s, the combination of the traditional dynamics of the land market and the emergence of drug trafficking caused changes in the ownership and prices of land. Between 1970 and 1984, large-scale ownership declined and medium-sized ownership consolidated. Nevertheless, land inequality levels were fairly stable because of the fragmentation of large properties.⁵³ This trend was reversed between 1984 and 1994 with the deterioration of mid-sized properties, the persistent fragmentation of small ones, and the consolidation of large ones.⁵⁴

In 1994, the Colombian government designed a new land reform with the passing of Law 160 of that year. In contrast with the previous land reforms, this was based on market mechanisms for the transfer of land, not on the expropriation of unproductive lands. Peasants who were eligible as beneficiaries had to identify the plot of land, negotiate the purchase with the owner, and inform the INCODER (the Colombian Institute of Rural Development, which was created to replace the INCORA) in order to proceed with the transaction. The Colombian government offered a 70% subsidy for the purchase. The goal of this reform was to redistribute one million hectares, but the results have been insufficient.⁵⁵

⁵¹ Reyes, *supra* n. 2.

⁵² Lorente, Salazar, and Gallo, *supra* n. 46.

⁵³ *Id.*

⁵⁴ Meertens, *supra* n. 42.

⁵⁵ Klaus Deininger, 1999, “*Making Negotiated Land Reform Work: Initial Experience from Colombia, Brazil and South Africa*”, World Bank Policy Research Working Paper Series No. 2040, Washington: World Bank.

Between 1993 and 2001, 598,332 hectares were transferred, the transactions occurring mostly in four *departamentos*, which are the largest regional administrative units in Colombia, with half of the assigned plots located in only 40 municipalities.⁵⁶ Moreover, between 2002 and 2007, the INCODER concentrated its actions, as in previous periods, on granting titles to frontier lands, not on programs of land reform proper: 53.4% of the lands assigned by INCODER were grants of titles to squatters in frontier lands, 37.9% were collective land titles granted to Afro-Colombian communities, and 5.6% involved programs of land reform.⁵⁷ The dynamics of land concentration described in the previous paragraphs meant that, between 1960 and 1990, the Gini coefficient of land fell from 0.87 to 0.84, despite the two land reforms and the increasing flow of resources to the INCORA.⁵⁸

The intensification of the internal conflict as a result of the emergence of paramilitary groups, and the use of drug money to fund them, aggravated the fight for land in some regions. Indeed, land and territory have been at the center of the Colombian armed conflict, in several ways: military disputes for territorial control, the need to establish corridors for transporting arms and illicit drugs, the exploitation of natural resources, and the use of land as war booty.⁵⁹ Moreover, the growing participation of armed groups in drug trafficking has created incentives for the accumulation of land in peripheral regions, where illegal crops can be grown more easily.⁶⁰

The strategies employed by armed groups to exert territorial control and accumulate land have led, as they did during *La Violencia*, to the expulsion of millions of peasants from their lands. In order to seize their lands, the armed groups have used several strategies, such as co-

⁵⁶ Juan Gonzalo Zapata and César Arismendy, 2003, “*Ordenamiento Territorial y Reforma Agraria en Colombia: Un Nuevo Enfoque para un Viejo Problema*”, in *Informe final presentado al Banco Mundial*, Bogotá: Fedesarrollo.

⁵⁷ Juliana Helo, Ana María Ibáñez, and Andrea Velásquez, 2008, “*La Informalidad de los Mercados de Tierras en Colombia*”, in *Informe final presentado a USAID*, Bogotá: Universidad de los Andes.

⁵⁸ Deininger, *supra* n. 55.

⁵⁹ Ana María Ibáñez, 2008, *El Desplazamiento Forzoso en Colombia: Un Camino sin Retorno hacia la Pobreza*, Bogotá: Ediciones Uniandes.

⁶⁰ Reyes, *supra* n. 2.

receive transfers, fence-shifting to seize plots previously in hands of people now displaced, the use of front men to keep plots from expropriation, and the acquisition of fore-closed plots, whose owners failed to pay mortgages because they were displaced.⁶¹

By the end of 2008, around 2.8 million peasants had been forced to migrate. More than half of the displaced population, 55.4%, had access to land before this forced migration, and the average size of their plots was 13.2 hectares. In many cases, it will be impossible to recover the abandoned properties, since only 31.2% of these peasants have formal property titles, 12.8% still control their property in some manner, and 25.8% hope to recover their property when they return.⁶² In consequence, nearly 1.8 million hectares have been abandoned or seized, that is, 2.5 times the amount of lands assigned under land reform programs between 1993 and 2002.⁶³

The land abandoned by the displaced population is being used in diverse ways. In some cases, it has been reassigned to peasants loyal to the dominant armed group in the region.⁶⁴ In others, the land has been appropriated by drug traffickers or by members of the armed groups. This is the case of the leaders of paramilitary groups, who have accumulated significant amounts of land.⁶⁵ But, in certain regions, the lands have been simply abandoned.

The processes of displacement and the seizure of lands have been particularly intense in regions where the absence of the state is prevalent and the protection of property rights weak. Areas of recent colonization, with a low density of population, recent settlement, weak social cohesion, and a marked informality in property rights, have been especially vulnerable to these phenomena.⁶⁶ Econometric estimates have found that forced displacement has been most intense in municipalities

⁶¹ *Id.*; Meertens, *supra* n. 42.

⁶² Ana María Ibáñez and Andrés Moya, 2009, “Do Conflicts Create Poverty Traps? Asset Losses and Recovery for Displaced Households in Colombia”, Microcon Research Working Paper 10.

⁶³ Ibáñez, *supra* n. 59.

⁶⁴ Meertens, *supra* n. 42.

⁶⁵ Reyes, *supra* n. 2.

⁶⁶ Lorente, Salazar, and Gallo, *supra* n. 46.

with the highest informality of land holding.⁶⁷ Drug traffickers and paramilitary groups took advantage of the institutional void and the weakness of the state to guarantee the rights to buy lands in areas with a strong presence of the guerrilla, providing private security, raising property values, and profiting out of the subsequent increases in land prices.⁶⁸

The capture of local authorities and institutions responsible for regulating land markets by armed groups has also facilitated the seizure of lands. In particular, the capture of public notaries and the cadastral registry offices in many regions of the country has allowed for transferences of lands to members of paramilitary groups, thus complicating the reparation processes and the protection of property rights for the displaced population.⁶⁹

The consequences of displacement and land seizures for the displaced population are substantial. They migrate to urban regions and face huge difficulties in entering urban employment because their experience in agricultural work is not valued in urban labor markets. The great loss of productive and non-productive assets, restrictions on access to credit, and the weakening of their social networks impair their ability to generate income. As a result, the earnings of the displaced population in the municipality that receives them are less than half of what they formerly earned. In addition, their ability to accumulate assets is strongly limited, and barely a fourth of them manage to recover the assets lost through the conflict.⁷⁰

The costs of forced displacement and land concentration are not limited to the displaced population. The long-term effects for the country's economic development may be important as well. On the one hand, the loss of earnings from land that remains unexploited reduces the growth of the agricultural GDP by 3.5% annually.⁷¹ On the other,

⁶⁷ Andrea Velásquez, 2008, "La Informalidad de los Derechos de Propiedad: ¿Determinante de la Estrategia Militar de los Actores Armados?", *Desarrollo y Sociedad* 61: 119-64.

⁶⁸ Reyes, *supra* n. 2.

⁶⁹ *Id.*

⁷⁰ Ibáñez, *supra* n. 59.

⁷¹ *Id.*

an unequal distribution of land affects the rural population's ability to generate income, causing a greater inequality in income distribution. The lack of assets restricts access to credits and thus the possibility of financing productive investments.⁷²

In Colombia, the *departamentos* with a higher land concentration show lower levels of growth, whereas the zones with more equitable distributions have higher levels of rural incomes.⁷³ Furthermore, the consolidation of new regional elites concentrates wealth and power even more in certain groups of the population. As in previous decades, these groups exert pressure for the shifting of public investments from ends which benefit the bulk of the population, like education, towards those which benefit a few owners of big properties, which affects the country's long-term growth.⁷⁴

To identify the factors that unleashed the current concentration of land is a complex task. Diverse factors have worked together, contributing to give this concentration an inertia that, even now, would be difficult to reverse. Nevertheless, it is possible to single out four factors that have seemed to influence the distribution of property in Colombia. First, land distribution during the first few centuries of the colonial period enabled certain groups of the population to acquire the best land, creating landowning elites with a growing power to pressure for policies favorable to them, a factor which led to further accumulation. Second, land markets in Colombia are weak and highly segmented, have high transaction costs, and, on occasions, a preponderance of informal transactions.⁷⁵ This creates conditions that contribute to land concentration. Third, public policies have created incentives for the purchase of land that, to a large extent, have benefited large landowners. Tax benefits for landowners, rural public investments aimed at

⁷² Klaus Deininger and Lyn Squire, 1998, "New Ways of Looking at Old Issues: Inequality and Growth", *Journal of Development Economics* 57, 2.

⁷³ Lina Castaño, 1999, "*La Distribución de la Tierra Rural en Colombia y su Relación con el Crecimiento y la Violencia*", Universidad de los Andes.

⁷⁴ Oded Galor, Omer Moav, and Dietrich Vollrath, 2009, "Inequality in Land Ownership, the Emergence of Human-Capital Promoting Institutions, and the Great Divergence", *Review of Economic Studies* 76, 1.

⁷⁵ Deininger, *supra* n. 55.

large landowners, and obstacles to the leasing and sale of small properties are some examples. Finally, the armed conflict and drug trafficking have been a violent mechanism for the redistribution of land in Colombia.

The following section describes the evolution of land concentration in rural areas in Colombia during the period between 2000 and 2009. While we do not identify the determinants of such concentration, we will try to find out whether the armed conflict of recent decades influenced current land distribution.

9.3. The Evolution of Land Markets and Land Concentration: 2000 to 2009

The beginning of the twenty-first century in Colombia was marked by a significant intensification of the armed conflict. The guerrilla and paramilitary groups consolidated their hegemony over many regions of the country, there was a complete absence of the state in a number of municipalities, and forced displacement reached its most critical point. Little is known about the impact of the intensification of the armed conflict on land markets and land concentration in the country. The aim of this section is to analyze the evolution of land concentration in rural areas in Colombia during the period from 2000 to 2009 and to identify possible links between the dynamic of land distribution and the armed conflict. It is worth noting that unraveling the causes of land concentration is not our aim; that would require a detailed historical study, which is not our objective. Neither do we intend to establish causal relationships between the armed conflict and land concentration. We only seek to identify possible correlations between the two variables.

9.3.1. The Data

The analysis of land distribution in Colombia is based on the information collected by the cadastral registry of the *Geographical Institute Agustín Codazzi* (IGAC). This institution has compiled cadastral information since the 1970s, consolidating a database on rural and urban land ownership for all of the country except the *departamento* of Antioquia, which has its own system of information.

Before 1983, the information on each property was limited to the characteristics of the land plot and its location. Law 14 of 1983 created a cadastral file, which is a system whose main goal is to gather information for the estimation of cadastral values. The information collected is compiled in two kinds of registers. The first has data about the owner, location, size of the plot, and constructed area. The second register has information about detailed characteristics of the buildings and other features of the property, which are the main raw data for the estimation of cadastral value. Although the collection of this information goes back to the mid-1980s, only data from the year 2000 onwards are available in electronic media.

Cadastral data were cleaned in order to correct input errors and other inconsistencies in the database. Once the first cleaning was done, a filtering process was applied to the database in order to identify properties that were not private, that is, properties belonging to the state, religious communities, indigenous communities, Afro-Colombian communities, and natural reserves, among others, which were excluded from our analysis. Finally, a database for private property was constructed for the years 2000 to 2009, which allowed us not only to identify the properties but also to follow their owners throughout the country.

Based on this data, we calculated descriptive statistics to examine trends by plot size and the number of properties in the cadastral registry, and we calculated Gini coefficients for land. In addition, we estimated two additional land concentration indicators: (i) Gini coefficients controlling for land quality, and (ii) Gini coefficients by owners. Since two properties of identical size may not necessarily have the same value due to differences in soil quality, it is important to correct land Gini by taking into account soil quality. To do this, we divided the size of the properties by the Family Agricultural Units corresponding to the region (UAF by its Spanish acronym).⁷⁶ Traditionally, land

⁷⁶ The family agricultural unit (UAF) is understood as the basic productive entity for agriculture, stock-rearing, fish-farming or forestry, the size of which, in accordance with the agro-ecological conditions of the zone and the suitability of technology, allows the family to profit from their work and dispose of a surplus capital which helps to form their patrimony (Law 160 of 1994).

Ginis are calculated by land plot, ignoring that one person may own more than one land plot. To control for the possibility of ownership of multiple properties, we estimated Gini for owners⁷⁷. With the aim of adding up all the properties belonging to a single person, we created an identifier of owners, and then aggregated the number and real size of the properties per person.

In this way, we found different estimates of the Gini: (i) land (traditional), calculated on the basis of the cadastral areas of plots; (ii) owners, which we obtained by adding all the properties of each person; (iii) lands (controlling for quality), dividing by the UAFS at the municipal level to estimate the Gini; and (iv) owners controlling for quality, which we obtained by adding up the UAFS belonging to the same owner throughout the country.

To calculate the Gini, we made robustness proofs using the four main methodologies: geometric, mean differences, covariance, and matrix estimation. The results for the different methodologies show little variation. Given that we did not find significant differences for the four estimates, Sen's proposal was chosen, which allows for comparability and simplicity.⁷⁸

The estimated Gini is:

$$Gini = \left(\frac{1}{2n^2\mu} \right) \sum_{i=1}^n \sum_{j=1}^n |y_i - y_j|$$

Where n is the total number of register entries, m_y is the mean of the total area of the plot per property (Gini for land) or total area per owner (Gini for owners), y_i is the area of the plot of property "i" (Gini for land) or of the owner "i" (Gini for owners).

9.3.2. Evolution of the Concentration of Property: 2000-2009

Land concentration in Colombia increased during the period from 2000 to 2009. Graph 1 shows the evolution of the land Gini and the owners Gini, both not controlling and controlling for land quality. Before con-

⁷⁷ We suppose that each owner has exactly the same land portion in plot with several owners.

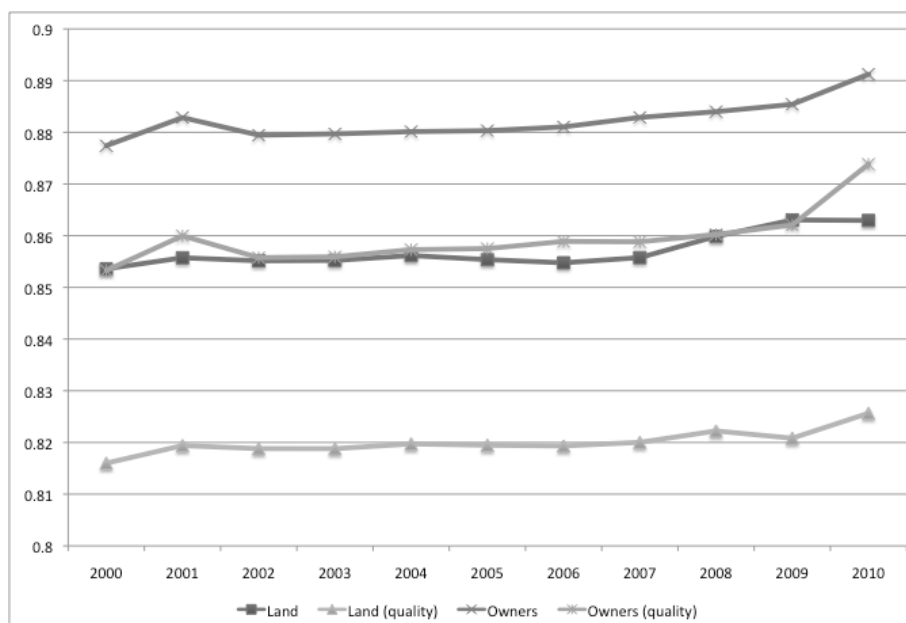
⁷⁸ Amartya Sen, 1973, *On Economic Inequality*, Oxford: Clarendon Press.

trolling for land quality, the land Gini increases, but in a barely perceptible way, from 0.85 to 0.86. When land concentration is calculated not only in terms of increases in land plots of each particular property, but also in the acquisition of several properties by the same owner, the rising trend of the Gini is accentuated, particularly from 2005 onwards.

In 2000, the owners Gini was 0.86 and in 2009 it rises to 0.88. While the increase may not seem significant, it is important to make two clarifications. First, 0.88 is the highest value seen up to now in Colombia since measurements have been made. Second, as was mentioned in the previous section, during thirty years the Gini for lands fell by 0.03 and then, in the past nine years, rose by 0.02.

When we control for the quality of land, we find that the Ginis fall slightly, but the trend persists. This implies that land concentration has taken place in regions with lands of a poorer quality. The gap between the land Gini and the owners Gini widens in a significant way from 2005 onwards and reaches a value of 0.03 in 2009. The difference between both Ginis indicates that land concentration is driven by the growth in land plots and the purchase of new properties by a few owners. The widening of this gap from 2005 reveals a significant expansion of the latter phenomenon.

Despite the rising trend in land concentration, it is surprising that increments in Gini are not more pronounced, given the massive abandonment of lands reported by the displaced population. Three complementary phenomena may explain this situation. On the one hand, it is possible that the seizure of lands is concealed by the use of front men or by the fictitious division of ownership among relatives or friends of the actual owner, and is thus not reflected in the indicators for concentration. On the other hand, concentration may not increase much when, rather than causing an increase in the size of the old properties, seizure caused a change in the owners of the same properties. Third, considering that data for the 1990s are not available, the increase may in fact be larger than reported.



Graph 1: Evolution of the Ginis for lands and owners (2000-2010). Source: Estimates of CEDE-IGAC, based on National Property Register – IGAC.

The distribution by the size of land plots remains fairly constant between the years 2000 and 2009 (Table 1). The properties of internally displaced people may range between three and 20 hectares and the share of these properties decrease slightly between 2000 and 2009. Likewise, there is a smaller percentage of properties between 20 and 200 hectares in 2009, compared to 2000. Furthermore, the percentage of properties larger than 200 hectares grew during the nine-year period, particularly properties between 1,000 and 2,000 hectares.

Land plot size	2000	2010
Less than 1hectare	0.49%	0.98%
1htas < 3htas	1.62%	2.71%
3htas < 5htas	1.70%	2.48%
5htas < 10htas	3.72%	4.86%
10htas < 15htas	3.12%	3.80%
15htas < 20htas	2.76%	3.31%
20htas < 50htas	12.46%	14.68%

50htas < 100htas	12.31%	13.23%
100htas < 200htas	12.69%	12.19%
200htas < 500htas	14.94%	12.48%
500htas < 1000htas	10.38%	9.84%
1000htas < 20000htas	8.42%	7.43%
>2000hts	15.38%	11.99%

Table 1: Distribution of lands by size (2000-2010). Source: Estimates of CEDE-IGAC, based on National Property Register – IGAC.

The stable trends of Gini's and the share by size of the land plot may conceal an active transfer of properties caused by land market factors, illegal seizures, and the cadastral update. In order to determine whether this phenomenon did in fact take place, Table 2 reports the number of new owners registered between 2000 and 2009, as well as the changes in the size of the plots and owners of the old properties for the period between 2000 and 2009.

The number of new owners filed in the National Cadastral Registry rose by a little more than 1.4 million. This is equivalent to 46.6% of the land registered in 2009 and 51.6% of owners. Even though an update of cadastral registry has occurred, a percentage of these new owners may be explained by purchases or illegal seizures of properties that formerly belonged to the displaced population. Below we will undertake econometric estimates in order to determine whether the registration of new properties coincides with regions where more forced displacements occurred or where the presence of armed groups was persistent.

The remaining categories of Table 2 correspond to owners who appear both in 2000 and 2009. For these owners, we compare the number of properties and their area, and we group them according to dynamics of concentration and fragmentation. We found dynamics of concentration in 14.78% of the plots that appeared in the 2000 cadastral registry and in 17.24% of the properties. In particular, 12.33% of the properties played a role in the process of concentration insofar as their owners accumulated more and bigger plots. On the other hand, 3.82% of the owners continued to have the same number of properties, but of a larger size.

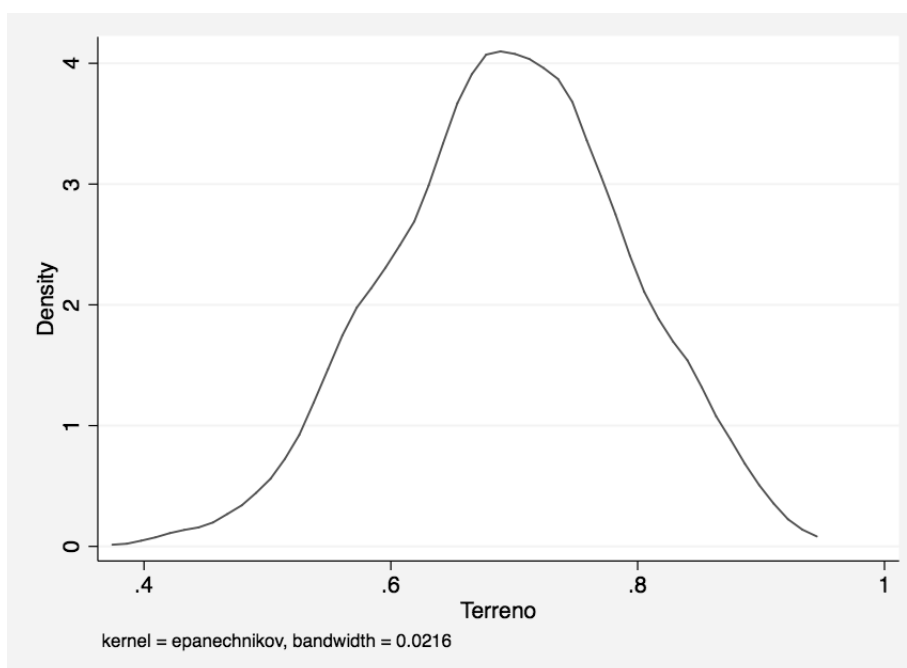
The fragmentation of plots seems less frequent in this period. The division of plots is recorded in 10.5% of the land and 9.62% of the properties. The shrinking of land size and a smaller number of properties were the main causes of this fragmentation.

	Number of owners	Plot percentage (2010)	Properties percentage (2010)
New owners	793,611	24.50%	21.26%
Plot size and properties constant	2,004,045	49.74%	53.68%
Concentration			
Plot size constant and smaller number of properties	82,232	2.20%	2.20%
Larger plot size and constant number of properties	128,713	7.79%	3.45%
Larger plot size and smaller number of properties	9,982	0.65%	0.27%
Larger plot size and larger number of properties	47,609	1.39%	1.28%
Fragmentation			
Smaller plot size and smaller number of properties	31,725	0.90%	0.85%
Constant plot size and larger number of properties	361,664	3.95%	9.69%
Smaller plot size and constant number of properties	203,307	7.73%	5.45%
Smaller plot size and larger Number of properties	70,214	1.15%	1.88%

Table 2: New owners, fragmentation and concentration of property: (2000-2010).
Source: Estimates of CEDE-IGAC, based on National Property Register – IGAC.

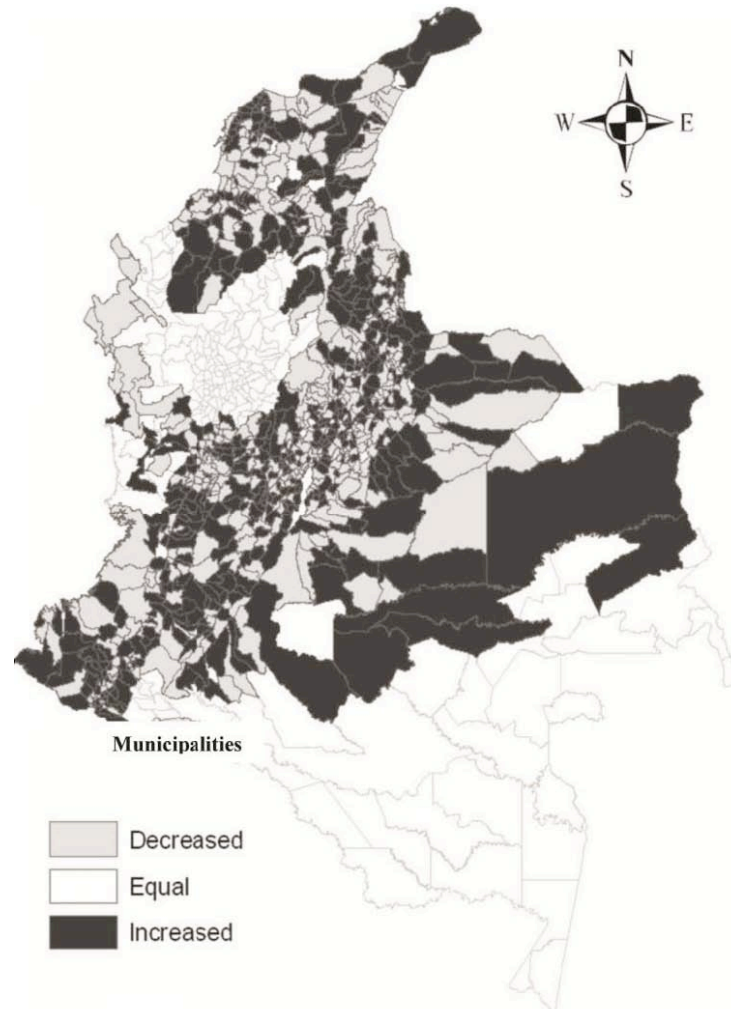
Although it shows some heterogeneity among municipalities, land concentration is high for the great majority of municipalities. Graph 2 shows the kernel distribution of the municipal Gini in the year 2009. The average municipal Gini is 0.726 and half of Colombian municipalities have a Gini higher than 0.732. The distribution shows that the bulk of Colombian municipalities have Ginis that range between 0.5 and 0.98. The municipality with the lowest Gini is San José del

Palmar (Chocó), with an index of 0.1403 and the one with the highest is Chiscas (Boyacá), with an index of 0.97929.



Graph 2: Distribution of municipal Ginis (2010). Source: Estimates of CEDE-IGAC, based on National Property Register – IGAC.

Changes in land concentration in Colombia between 2000 and 2009 occurred in more than half of the municipalities. Map 1 shows the municipalities whose concentration rose, stayed the same, or fell. A little more than 56% of municipalities register an increase in land concentration, while 43.3% show a decline. The increase in concentration is a common trend along the Colombian territory and is not particular of isolated municipalities. Moreover, a high percentage of the municipalities that show increased concentration between 2000 and 2009 are located near the main productive centers of the country.



Map 1: Changes in land concentration: (2000– 2010). Source: Estimates of CEDE-IGAC, based on National Property Register – IGAC.

While this concentration was seen throughout the country, determining the characteristics of the municipalities which faced an increased concentration is of prime importance. A first approach to this question is shown in Table 3 (see Appendix at the end of the chapter). There, the country's municipalities are grouped in accordance with their agricultural and cattle-raising production, the quality of their lands, their altitude, their distance from the capital of their respective

departamento, the presence of natural resources, the activities of armed groups, and the magnitude of forced displacement. Likewise a comparison is made of the evolution of concentration in zones of colonization and consolidated zones.

Before analyzing the evolution by groups of municipalities, we compare the concentration in 2000 for the different groups. In the year 2000, the highest concentration of rural property was most frequently found in isolated zones at altitudes greater than 2000 masl, located on poor quality soils, where production was non-agricultural (for example, exploitation of natural resources), or in areas of colonization. It is worth noting, however, that the indexes of concentration in other regions are rather high and do not differ much from those of the more concentrated regions. The trend of concentration in the different municipal categories remains fairly stable over the ten years. Nevertheless, in the period between 2003 and 2006, the concentration deepened in regions devoted to the exploitation of natural resources, enduring colonization processes, and located in remote areas. The concentration in isolated regions continued to grow in 2009.

The concentration in 2000 and its subsequent evolution are different for municipalities with high and low indexes of violence. The municipalities with a persistent paramilitary or guerrilla presence show much higher indexes of concentration compared to those where there was a smaller presence, a difference which is more profound for the municipalities with a paramilitary presence. The municipalities with magnitudes of displacement above the national median show lower indexes of concentration of property, which means that the displacement process occurred more frequently in regions of small landowners.

To identify the determinants of such concentration is not simple. The initial assignment of lands, land markets, public policies, and the diverse conflicts throughout Colombian history would seem to be important determinants of the process of concentration. To untangle these determinants it would be necessary to carry out an analysis covering a long period of time, which is not possible due to the unavailability of the data. However, in recent decades land seizure, forced displacement, and the consolidation of Colombia's position as an exporter of natural resources makes it necessary to find relationships between land con-

centration, the emergence of new owners, and the possible determinants. To establish causality links between the armed conflict and the recent land concentration in Colombia is difficult. While the conflict might have produced an increase in concentration, the armed groups presumably tried to exert territorial control in regions with the most valuable lands and in those with a higher concentration of property.

The econometric estimates associate the changes in the Gini indexes for the period between 2000 and 2009 and the dynamics of concentration to the presence of armed actors and the initial conditions of the period, that is, the number of new owners and the cadastral area in 2000. The estimates also include a set of municipal controls that are not reported as well as fixed effects by *departamentos*.⁷⁹

Before interpreting the results, a word of caution is necessary. First, the econometric estimates do not seek to establish causal relationships, given the abovementioned complications. Second, the relationship between forced displacement and land concentration is difficult to identify because of reverse causality. On the one hand, the armed groups are concentrated in regions which would seem to have a smaller concentration of property, presumably because of the ease of seizing the lands of small owners. On the other hand, mass expulsion may eventually lead to a higher concentration of land ownership. Finally, since forced displacement is still ongoing, many of the illegal transferences of land are not immediately captured by the cadastral registry. All of the above makes it difficult to arrive at accurate estimates, and thus the results are not reported.

In Table 4 (see Appendix), we report estimation results for the difference in size and number of properties between the years 2000 and 2009. In particular, we analyze the two dynamics that seem to have contributed more to land transfers and land concentration: (i) the emergence of new owners, and (ii) the increase in the size of land plots and the number of properties. It also includes the estimates, in Gini levels, of lands and owners, controlling for quality, for 2009.

⁷⁹ Each of the econometric estimates included fixed *departemento* effects, controls for municipal geography, and dummies for quintiles of the quality of land and informality of land holdings, presence of natural resources, and areas of colonization.

The presence of armed groups is correlated with land concentration. Attacks by unknown armed groups are positively correlated with the number of new owners. Likewise, attacks by guerrilla groups are positively correlated with the number of new owners, the increased number of properties per person, and the growth of the properties. The estimates of Gini levels of 2009, both of lands and owners, indicate a positive correlation with the variables of the armed conflict. In particular, the Ginis have a positive correlation with the attacks by unknown agents and by paramilitary groups.

As could be expected, the initial conditions of land concentration, determined by historical dynamics, would seem to have the highest correlation with current concentration. This would imply that the initial distribution of property and the difficulties of reversing the persistence in this concentration, which is due to the weakness of land markets in Colombia, might be the main cause of land concentration in Colombia. Since these econometric estimates do not establish any causality, this is merely a hypothesis, which might be confirmed in future research.

In sum, although it would be hasty to state that there is a robust relationship between the processes of land concentration in Colombia and the armed conflict, the correlations between these events suggest that the effects of the armed conflict have had an influence on the structure of property in Colombia. Nevertheless, this is less a conclusion than an invitation to continue exploring quantitatively possible relationships that would help us to attain a clearer understanding of the structure of land ownership in Colombia.

9.4. Elements for Discussion: By Way of Conclusion

Land concentration in Colombia is caused by many factors. The initial distribution of land, the historical dynamics, the weakness of land markets, the armed conflict, and drug trafficking have determined the concentration of property in the country. To determine the effect of each one of these dimensions on the present concentration is difficult due to the lack of historical data about land distribution. Nevertheless, during the past decade, the intensification of the conflict and the con-

solidation of Colombia's position as an exporter of natural resources may have concentrated land property even further.

The analysis of land concentration trends in Colombia in this chapter allows one to reach four conclusions. First, the period between 2000 and 2009 was marked by a higher land concentration. Given the high indexes of concentration that prevailed in 2000, already the highest in Latin America, it would have been difficult to predict additional increases. However, there were increases from the year 2005 onwards. Second, instead of an increase in the size of properties, land concentration was the result of the acquisition of additional properties by the then existing owners. Third, the relative stability of the indexes of concentration contrasts with the significant appearance of new owners filed in the national cadastral registry. These new owners may have resulted from the purchase of plots, the cadastral updates, or land seizures as a result of the armed conflict. Fourth, the Colombian municipalities with the highest concentration are located in isolated zones, which have significant natural resources, poor soil quality, and the presence of colonization processes and armed groups.

While it is difficult to establish a causal relationship between the concentration of property and the presence of armed groups, a number of simple correlations reveals a positive relationship between both variables. The presence of all the armed groups – guerrilla, paramilitaries, unidentified groups – is positively correlated with land concentration, especially with the emergence of new owners, the increase of the number of properties per person, and the enlarged size of the properties. Furthermore, the conditions of concentration initially seen in 2000 have the highest correlation among all of the analyzed factors. The weakness of land markets, the few market transfers that occur, the armed conflict, and public policies that protect large landowners would seem to be obstacles to reversing the inertia created by the initial distribution of land in Colombia.

Appendix

Category	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Agricultural municipalities (DANE classification)	0.683	0.683	0.683	0.684	0.684	0.685	0.681	0.687	0.688	0.688
Non-agricultural municipalities (DANE classification)	0.719	0.720	0.722	0.722	0.727	0.728	0.717	0.730	0.728	0.731
Good land quality: municipalities with UAFS lower than or equal to the national median	0.684	0.684	0.684	0.686	0.687	0.688	0.682	0.689	0.690	0.690
Poor land quality: municipalities with UAFS higher than the national median	0.697	0.697	0.697	0.697	0.698	0.699	0.694	0.701	0.702	0.703
Municipalities below 1000 masl	0.681	0.681	0.682	0.685	0.685	0.686	0.678	0.688	0.689	0.690
Municipalities between 1000 and 2000 masl	0.688	0.686	0.686	0.686	0.688	0.689	0.682	0.691	0.691	0.691
Municipalities above 2000 masl	0.713	0.713	0.712	0.712	0.713	0.713	0.717	0.713	0.715	0.715
Municipalities at less than 100 km from the capital of the state	0.697	0.697	0.697	0.697	0.700	0.701	0.697	0.701	0.701	0.706
Municipalities at more than 100 km from the capital of the state	0.682	0.681	0.682	0.684	0.684	0.684	0.678	0.687	0.688	0.685
Exploitation of gold, flowers, palms, petroleum, coal and emeralds	0.711	0.709	0.709	0.712	0.716	0.717	0.709	0.718	0.718	0.716
No exploitation of gold, flowers, palms petroleum, coal or emeralds	0.678	0.678	0.678	0.678	0.678	0.679	0.675	0.681	0.682	0.684
Municipality colonization (DANE classification DANE)	0.745	0.744	0.745	0.745	0.748	0.747	0.733	0.749	0.748	0.746
Consolidated municipality (DANE classification)	0.745	0.744	0.745	0.745	0.748	0.747	0.733	0.749	0.748	0.746

tion)																			
Municipalities with number of paramilitary attacks greater than or equal to the national median	0.700	0.702	0.703	0.702	0.703	0.704	0.703	0.704	0.695	0.706	0.704	0.706	0.699	0.706					
Municipalities with number of paramilitary attacks less than the national median	0.683	0.682	0.681	0.683	0.685	0.685	0.683	0.685	0.682	0.686	0.689	0.686	0.689	0.689					
Municipalities with number of guerrilla attacks greater than or equal to the national median	0.695	0.695	0.694	0.694	0.696	0.696	0.694	0.696	0.692	0.700	0.699	0.700	0.699	0.699					
Municipalities with number of guerrilla attacks less than national median	0.682	0.681	0.683	0.685	0.686	0.687	0.685	0.687	0.680	0.686	0.688	0.686	0.688	0.690					
Municipalities with individual displacement equal to or greater than the national median	0.682	0.678	0.682	0.682	0.685	0.687	0.682	0.687	0.676	0.688	0.690	0.688	0.690	0.691					
Municipalities with individual displacement lesser than national median	0.700	0.703	0.697	0.699	0.699	0.698	0.699	0.699	0.699	0.700	0.699	0.700	0.699	0.699					

Table 3: Annual evolution of Gimis, by categories (2000-2009). Source: Estimates of CEDE-IGAC, based on National Property Register – IGAC.

Variable	New owner		Larger terrain and more properties	Ginis in levels (2009)	
	Size of properties	Number of properties		Land Gini (Quality)	Owner Gini
Number of attacks by unknown agents	3.286* [1.63]	3.207* [1.62]	0.199 [0.17]	0.000158*** [0.000054]	0.000129** [0.000047]
Number of guerrilla attacks	34.26** [12.9]	30.19** [11.8]	3.297** [1.29]	-0.0000933 [0.00058]	-0.000189 [0.00057]
Number of attacks by AUC (paramilitary group)	-11.97 [21.4]	-16.04 [22.1]	1.923 [2.22]	0.0022 [0.0022]	0.00287* [0.0016]
Cadastral Area (2000)	0.389*** [0.10]				
Number of properties (2000)		0.0752 [0.058]	0.0105*** [0.016]		
Observations	654	659	649	658	658
R-squared	0.55	0.4	649	0.34	0.32

Table 4: Regresiones diferencia tamaño de propiedades, número de propiedades por municipio. ***Significant to 99% level; **Significant to 95% level; *Significant to 90% level. Robust standard errors with departmental cluster in brackets. The estimates included departmental and municipal controls that are not reported.