

# THE EDUCATIONAL EFFECTS OF 19<sup>TH</sup> CENTURY DISENTAILMENT OF CATHOLIC CHURCH LAND IN COLOMBIA\*

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## ABSTRACT

The aim of this paper is to analyse the effects of land concentration prompted by the distribution of disentailed church land during the second half of the 19<sup>th</sup> century on the accumulation of human capital in early 20<sup>th</sup> century Colombia<sup>1</sup>. Using existing primary sources on the process of land disentailment and the 1912 National Census at the municipal level, descriptive statistics and econometric evidence show a significant and negative relationship between the amount of disentailed land during the 1870s and literacy and school enrolment rates of males in 1912.

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\* Received 20 May 2008. Accepted 11 March 2010. We thank Maria Teresa Ramirez and the anonymous referees for their insights and useful comments on a previous version of this paper.

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<sup>1</sup> Disentailed land refers to the land expropriated from the Church by the Liberal administrations during the 19<sup>th</sup> century and sold in public auction. Municipal common land (*ejidos*) was also auctioned during this process.

**Keywords:** disentailment policy, land concentration, institutions, human capital, Colombian history

**JEL Code:** N10, N36, N4

## RESUMEN

El documento tiene como objetivo analizar los efectos que tuvo la concentración de tierras desamortizadas durante la segunda mitad del siglo XIX sobre la acumulación de capital humano, a principios del siglo XX en Colombia<sup>2</sup>. Utilizando las fuentes primarias existentes sobre el proceso de desamortización de tierras y el Censo Nacional de 1912 a nivel municipal, las estadísticas descriptivas y los ejercicios econométricos muestran la existencia de una relación negativa y significativa entre la cantidad de tierra desamortizada durante la década de 1870 con la tasa de alfabetismo y la proporción de hombres matriculados en la escuela en 1912.

**Palabras clave:** políticas de desamortización, concentración de tierra, instituciones, capital humano, historia de Colombia

*«That one of the major obstacles for the prosperity and growth of our Nation is the lack of movement and free circulation of a large amount of property, which is the basis of public wealth»*

*President Tomás Cipriano de Mosquera (1861)*

## 1. INTRODUCTION

The study of institutions — that is, the rules of the game operative in society, (North 1993) — and their evolution in history is crucial to explain the economic performance of a given country and the role played by the accumulation of human capital. The institutional approach has been widely used as a framework to explain the poor economic performance in the Latin American region<sup>3</sup>. According to this view, favourable factor endowment conditions in the colonial period, namely abundance of precious metals and relatively plentiful native labour, prompted the rise of excluding institutions — economic, political and those related to property rights — which only benefited a small group of individuals, particularly landowners and those of Spanish origin.

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<sup>2</sup> La tierra desamortizada correspondió a aquella que durante la segunda mitad del siglo XIX los gobiernos liberales le expropiaron a la Iglesia. Los ejidos ó tierras comunales también fueron rematados durante este proceso.

<sup>3</sup> Among the most influential papers on this approach are those by Acemoglu *et al.* (2002, 2001) and Engerman and Sokoloff (2002).

Even after independence, according to Engerman and Sokoloff (2005) and De Ferranti *et al.* (2003), these institutions remained basically unmodified — excluding the institutions that persisted — as the small group of landowners and the ruling elite continued to reap the benefits for themselves. The above-mentioned view has nevertheless been subjected to some revision. Recent research by Coatsworth (2008), Dobado (2009) and Dye (2006) has shown that, on the one hand, Latin American levels of colonial inequality were lower than post-independence levels and, on the other, that post-independence institutional change in the region had different dynamics, which explains the diversity of political and economic outcomes in Latin America during the 19<sup>th</sup> century.

Dye (2006) shows, for instance, that one of the chief institutional changes introduced during the post-independence period was the transformation of property rights over land. Thus, the land policies implemented were aimed at formalizing the property rights of squatters through titling and at eliminating archaic property rights such as entailed church land. A key outcome of such reforms would be the reduction in the concentration of land ownership, as Sánchez *et al.* (2010) and Coatsworth (2008) have pointed out. In fact, all land reforms undertaken by the 19<sup>th</sup> century Colombian administrations were aimed at increasing access to and ownership of land to new social groups. It was widely believed that a more egalitarian distribution of land property would help to overcome poverty and backwardness. The most important land policies carried out after independence were the sale and grant of public land (*baldíos*) and the disentanglement (expropriation) of Catholic Church land. The analysis of the process, outcomes and impact of the latter is the purpose of this paper.

Liberal administrations undertook the expropriation of church assets during the second half of the 19<sup>th</sup> century arguing their lack of productive use (mortmain; see Villegas 1977)<sup>4</sup>. Throughout the colonial period, the clergy had accumulated a large amount of wealth and, thanks to its evangelizing function, had entailed considerable areas of land that had made the Catholic Church the largest landowner in the country<sup>5</sup>. Liberal politicians believed that the concentration of land ownership was one of the chief obstacles to economic growth. Thus, the Liberal President, Tomás Cipriano de Mosquera, on 9 September 1861, decreed the disentanglement of mortmain properties so as to implement a more egalitarian distribution of land (see Núñez 1862; Alarcón 1973).

During the 19<sup>th</sup> century, Republican institutions attempted to modify the structure of property rights to establish a more democratic distribution of land.

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<sup>4</sup> The decree ordered that all ecclesiastic properties (urban and rural) with little market activity be appropriated by the State. Properties not included in this process included those associated with the sect, schools, hospitals, prisons, markets and the residence of clergy members.

<sup>5</sup> According to Alarcón (1973, p. 50), the Church obtained ownership of large amounts of indigenous land by claiming that its value was inferior to that of soul salvation.

One of these attempts was land disentailment. Nevertheless, historical scholarship on the subject has shown that this goal was not achieved and land remained concentrated in the hands of individuals belonging to or connected with political circles (see Díaz 1977; Alarcón 1973; Villegas 1977). In other words, disentaileed land was appropriated by the existing elite and did not lead to a less concentrated structure of property as argued by Villegas (1977). This outcome may in fact have reinforced the perverse effects of excluding institutions — set up during the colonial period — on the provision of public goods. Thus, the concentration of property rights over land inherited from the colonial period may have curbed the reduction of land concentration, which was the key objective of land policy towards church land. Based on the quantitative evidence of disentaileed land purchases, the primary objective of this paper is to verify empirically the negative relationship between the concentration of disentaileed land on the accumulation of human capital in 1912 measured by rates of literacy and school enrolment of males. This paper comprises six sections, including this introduction. The second section reviews the literature on institutions and long-run economic performance. The third approaches the historical context in which disentailement occurred, corroborating that land distribution in fact remained concentrated. The fourth examines the relationship between the accumulation of human capital and the concentration of disentaileed land. In the fifth section, an econometric model is estimated and the results are interpreted. The sixth section concludes the paper.

## 2. RELATED LITERATURE

Some economic development literature suggests that the current differences in economic development between countries originated as early as the colonial period. There is a significant amount of research dedicated to exploring the historical roots of economic divergence. For instance, Acemoglu *et al.* (2002) argue that the countries which were relatively wealthy during the colonial period (as is the case of the Spanish colonies in Latin America, for example) are less developed today in comparison to those that were poor during the same period (United States and Canada). They conclude that the types of institutions established during the colonial period are responsible for today's divergence. The initial wealth of Latin America consisted of precious metals and a native population induced the creation of extractive institutions for the sole benefit of the colonizers, so that a very limited group of individuals exercised political and economic power. In contrast, the lack of native labour and of gold or silver mines in North America motivated the creation of more permanent settlements based on land ownership, thus developing more egalitarian institutions.

In this regard, Engerman and Sokoloff (1999, 2002) and De Ferranti *et al.* (2003) point out that in North America, geographic conditions (which

favoured crops characterized by constant returns scale), along with the scarcity of indigenous labour, promoted the settlement of colonizers on family farms (a more egalitarian distribution of land), bringing about a more democratic structure of political and economic power<sup>6</sup>. In Latin America, the availability of indigenous labour and geographic conditions favouring large plantation crops, which experienced economies of scale, led to institutions that reproduced the concentrated structure of economic and political power<sup>7</sup>. The nature of institutions (democratic or excluding) would continue over time leading to the persistence of the initial political and economic inequalities.

Acemoglu *et al.* (2002, 2001) and Engerman and Sokoloff (1999, 2002) claim that the excluding institutions of the colonial period persisted even after independence (which occurred in most cases during the 19<sup>th</sup> century) as the elite continued to reap the political and economic benefits they had enjoyed until then. Likewise, De Ferranti *et al.* (2003) conclude that not only did initial inequality persist, but also it actually intensified during the 19<sup>th</sup> century. For instance, Engerman and Sokoloff (2005) indicate that electoral rules in Latin America granted voting rights almost exclusively to wealthy and educated males. In contrast, in North America, restrictions on voting imposed during the colonial period were partially lifted during the 19<sup>th</sup> century, thus increasing the proportion of voters. In this way, the percentage of people who voted in Latin America was significantly lower than in the United States or Canada<sup>8</sup>.

Until now, emphasis has been placed on how initial inequalities in Latin America affected institutional development by benefiting an elite largely

<sup>6</sup> This analysis excludes the southern portion of the United States. In this area, the existence of abundant land and geographic conditions favourable to agriculture that promoted the presence of economies of scale explains why the institutions established were less democratic than those created in the rest of the country (economies of scale stimulated the use of slavery as a labour institution). On the heterogeneity of the American colonies, see Walton and Rockoff (1998).

<sup>7</sup> Recent scholarship has challenged the view that excluding colonial institutions and distribution of factor endowments are responsible for differences in current economic development. Dobado (2009) argues that the view of Acemoglu *et al.* (2001) overstates the development and wealth of the pre-Columbian societies. In fact, their technological backwardness was quite profound as they did not have animals for war or agriculture and did not use water-based energy. In addition, metals were almost exclusively used for ornamental purposes and their sailing techniques were basic. Thus, given the poverty of the pre-Columbian economies, the hypothesis of the «Reversal of Fortune» cannot be sustained. In addition, according to Dobado (2009), both Acemoglu *et al.* (2001) and Engerman and Sokoloff (2002) overlook events that are quite important for economic development, such as the *demographic collapse* of the indigenous populations in the 16<sup>th</sup> century, which should have prompted deep changes in the excluding institutions created at the beginning of the colonial period based precisely on the *abundance* of the indigenous population. Dobado also questions the extractive character of the mining industry and plantations (*hacienda*) showing that the institutions regulating these activities were basically in private hands.

<sup>8</sup> In the United States and Canada, initial voting restrictions (gender, literacy, landholdings) were gradually lifted so that, at the beginning of the 19<sup>th</sup> century, voter participation was high: over 50 per cent of adult males in the United States voted (Engerman and Sokoloff 2005). They also suggest that at the end of the 19<sup>th</sup> century, electoral participation in Latin America was 75 years behind that of the United States and Canada. Voting rates in Latin America at that time hovered around the 1-2 per cent mark.

made up of landowners. Our intention is to explore how institutions created in the 19<sup>th</sup> century, particularly those related to property rights over land, may have contributed to the persistence of inequality by influencing the accumulation of human capital.

Land distribution policies during the 19<sup>th</sup> century in the Americas are at the heart of the persistence (or change) of property rights institutions, as Engerman and Sokoloff (1999, 2002) maintain. For instance, in the United States, according to Walton and Rockoff (1998), the 1862 Homestead Act granted 160 acres of public land to each colonizer — trading the land lots for time and work — proving that productive use of the terrain promoted egalitarian land distribution. In contrast, 19<sup>th</sup> century Mexican, Argentinean and Brazilian agrarian policies showed high degrees of inequality. The distribution of either the new land settlements at the frontier or the old ones (e.g. church estates) simply mirrored colonial land inequality triggering the reproduction of existing excluding institutions. Thus, using their political power, the elite of large landowners took control of the policies aimed at improving land distribution in order to benefit themselves. One of the most important features of such an institutional structure is the lack of incentives on the part of the elite to invest in public goods<sup>9</sup>. The studies by Galor *et al.* (2004), Deininger and Squire (1998) and Sokoloff and Zolt (2007), among others, find similar patterns: land concentration negatively influenced investment in human capital<sup>10</sup>.

The research presented here indicates that land concentration and the excluding institutions caused by it would persist and reproduce over time. Policy choices in societies with large wealth inequalities would be less oriented to the provision of public goods. In the long run, they will exhibit low levels of human capital, productivity and *per capita* income. In societies in which land was scarce or distributed equally (less political influence of landowners), the economy benefited from greater investment in human capital and higher economic growth. This paper will analyse the extent to which Colombia's land policies — in particular, the distribution of the

<sup>9</sup> A study by Banerjee and Lyer (2005) found that in India in 1981 in the regions characterized by large estates — the so-called «landlord districts» inherited from the British rule — investment in human capital was lower than in the regions with a more egalitarian distribution of land. They argue that in the landlord districts, the concentration of power and the political influence of the landowners inhibited a larger provision of public goods via the policy decisions taken.

<sup>10</sup> Galor *et al.* (2004) show, through the construction of a model of general equilibrium, that public expenditure on education (taxes) is desirable for everyone in society, with the exception of landowners, due to the great wealth and position of political privilege that they possess. Deininger and Squire (1998) found a negative connection between land inequality and poverty levels. They argue that inequality affects education spending negatively. By analysing the effects that initial inequality and equality have on the investment in public goods, Sokoloff and Zolt (2007) found that in the case of Latin America — societies with initial inequalities — the elite used its political influence to perpetuate those institutional structures that benefited them. In this way, their contribution to public goods remained minimal as they refused to pay direct taxes on property and wealth.

expropriated church assets — in the second half of the 19<sup>th</sup> century modified neither the existing pattern of land distribution nor the policy choices towards the provision of public goods. Quite the opposite, despite government intentions the allocation of church assets in the second half of the 19<sup>th</sup> century was concentrated in a handful of individuals. Such an outcome reduced the prevailing low level of human capital investment even more (measured as 1912 literacy and school enrolment rates) as will be seen below.

### 3. DISENTAILED LAND: TOWARDS THE CONSOLIDATION OF SECULAR LATIFUNDIO?<sup>11</sup>

#### 3.1. History of the disentanglement of mortmain land (1861-1886)

The catechization and evangelization exercised by the Church during the colonial period endowed it with a great deal of political and economic power, which it maintained even after independence and during the Republican era<sup>12</sup>. During Liberal rule (in the mid-19<sup>th</sup> century), the government argued that the land retained by the Church — due to its lack of mobility on the market (mortmain) — was a great obstacle to the economic progress of the country. In consequence, the Liberals adopted measures to weaken the Church's political and economic power and to reduce the relationship between the Church and the State<sup>13</sup>. On 9 September 1861, the provisional president of the country, Tomás Cipriano de Mosquera, publicly announced the «September 9, 1861 decree», on the «*disentanglement of mortmain land*», which deposed the Church of the land and wealth it had retained since the colonial period, making this land available for free circulation on the market<sup>14</sup>.

The Liberal government passed this law with the political objective of ending the alliance between the Church and the Conservative Party, but also had two other economic goals in mind. Through the sale of mortmain land,

<sup>11</sup> Díaz (1977) emphasized that while the process of land disentanglement abolished clerical estates, it fortified lay estates.

<sup>12</sup> During the colonial period, the enormous patrimony retained by the Church was problematic even for the Spanish rule as the viceroys had denounced it to the King (Alarcón 1973; Villegas 1977). Disentanglement policies had already taken place before the Liberal era. For instance, the Republican government adopted certain measures to weaken the Church's economic power. One remarkable case was the closure of several convents in 1821 (Villegas 1977).

<sup>13</sup> Anti-clerical reforms adopted by the Liberal government include the following: (i) 1847: the liberalization of land censuses, which was a tax paid to the Church; (ii) 1851: the suppression of the tithe and ecclesiastic privileges; (iii) 1853: Church-State separation, eliminating the annuities assigned to the Church; (iv) 1861: «Rights of tuition», that is the swearing-in of the clergy to the constitution and to existing and new laws, (Alarcón 1973; Díaz 1977; Villegas 1977; Meisel and Jaramillo 2007).

<sup>14</sup> Disentanglement was not unique to Colombia. There are cases in other countries in which disentanglement was used as an instrument to reduce the fiscal deficit that afflicted these countries: Spain (1766-1768 and 1808-1823), Paraguay (1811), Argentina (1822), Chile (1823), Uruguay (1838) and Mexico (1856-1876) (Alarcón 1973; Meisel and Jaramillo 2007).

the government wanted to procure the resources to alleviate the fiscal deficit resulting from the independence wars, as has been emphasized by Alarcón (1973), Díaz (1977) and Villegas (1977) and more recently by Meisel and Jaramillo (2007). In addition, the decree was intended to improve land distribution as well as to promote the insertion of the Church's properties into market circulation to stimulate the country's economic development. Three mechanisms were employed to this end. The first consisted of offering these plots of land for sale in public auctions, allowing purchases to be made in bonds; the second offered them on credit (so that payment could be made in instalments) and lastly, large estates were divided up into smaller parcels (see Cipriano de Mosquera 1861; Núñez 1862; Alarcón 1973; Díaz 1977; Villegas 1977; Oficina De Investigaciones Socioeconómicas y Legales, Ofisel 1975; Palacios and Safford, 2002; Meisel and Jaramillo 2007)<sup>15</sup>. In this way, the Liberals hoped that farmers and their families would be able to access these lots in public auctions, thus achieving a more equal land distribution. Minister Rafael Núñez's writing a «*public flyer explaining disentanglement*» (1862) stated the policy as follows:

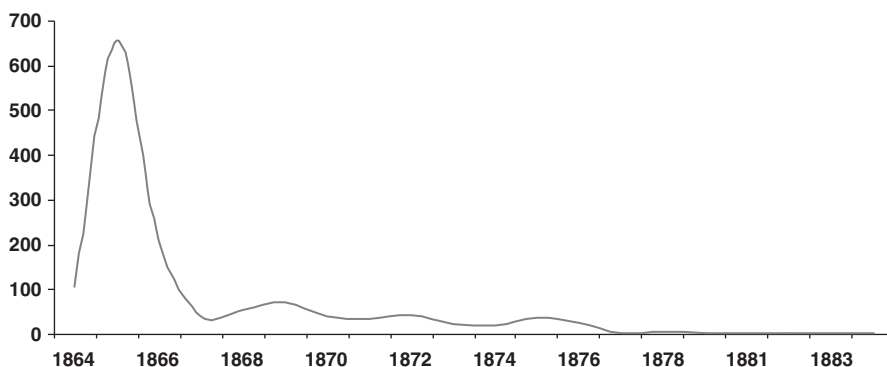
*«Because this is not just about resuscitating and putting into circulation a considerable amount of inactive values, (which is itself an ambitious task) nor is it just about paying the Public Debt, which is an even greater one: rather this is about certain precedents, because we work with eminently fertile soil and are on the brink of a more progressive era. I repeat, this is about solving with disentanglement to the greatest extent possible, the arduous and immense problem of the egalitarian distribution of property».*

The process of disentanglement of mortmain land continued throughout the Liberal period until the Conservative Party came to power in 1887. After reestablishing the relationship between the Church and the State, the administration then returned the land that had not been sold to the Church, thus compensating it for the policies introduced under Liberal rule. Nevertheless, it should be noticed that the most dynamic period of this process took place during the 1860s. During the 1870s, sales began to plummet partly because of the strong opposition of the Church, and to a great extent because of the elimination of the Agency of Disentailed Land, whose task of selling land was transferred to the Treasury, an organization with more pressing matters to attend to than these land auctions (see Villegas 1977; Meisel and Jaramillo 2007). As Figure 1 shows, most of the purchases of disentailed land

<sup>15</sup> Regarding the division of large estates, Article 6 of the September 9, 1861 decree states: «Once those rustic and urban *haciendas* have been inventoried, and the terms of rent have been determined, they will be transferred in public auction by lots, the division of which will be made in the smallest possible proportions, in order to increase competition» (in Cipriano de Mosquera 1861).



**FIGURE 1**  
NUMBER OF PURCHASES OF DISENTAILED LAND



Source: AGN, Sección República, *Fondo de Bienes Desamortizados (Rollo 1-30)*, *Diario Oficial* (1864-1884), Villegas (1977) and authors' calculations.

occurred during the Liberal administrations in the period 1864-1871, with the figure falling abruptly during the next decade.

### 3.2. Property rights and the concentration of disentailed land in Colombia

The previous section described how the September 9, 1861 decree made it possible for the central government to enact the disentanglement policy with the purpose of land redistribution. But was this objective achieved? Did this policy result in a more egalitarian distribution of land?

In order to determine the distribution of disentailed land, two sources of information were used: the Disentailed Land Fund and the Official Journal or *Diario Oficial*. These sources contain lists and descriptions of the assets to be auctioned and their approval by the *Junta Suprema Directiva del Crédito Nacional* (Supreme Board of Directors of the National Debt), which was in charge of determining the successful bid of each auction. The information compiled from these sources was: the date of sale of the lot, its location (city/state), size, valued price, the (paid) auction price — mostly in bonds — and the name of the buyer of each lot<sup>16</sup>. In total, 1,385 land sales were registered in different towns and *departamentos* (states at that time).

<sup>16</sup> At this point, it is important to note that sales could be approved or disapproved by the Supreme Board of Directors of National Debt, depending on the relationship between the sale price and the valued price. This meant that any given lot could be auctioned repeatedly for years until the Board of Directors approved the sale. Measurements in the auction records were standardized in

As previously mentioned, the legislation of disentailed land provided for fairer property distribution in the hope that farmers and indigenous people would be able to acquire this land through public auctions. Yet the historical studies of Alarcón (1973), Díaz (1977), Villegas (1977) and Oficina De Investigaciones Socioeconómicas y Legales, Ofisel (1975) claim that this objective was not accomplished. Information from newspapers of that time suggests that because the process was indeed corrupt — those in charge of land disentailment favoured a small group of individuals — the buyers who ultimately purchased the land in public auctions were wealthy individuals, usually landowners with close ties to political circles<sup>17</sup>. For instance, a letter from the people (non-elite) to President Tomás Cipriano de Mosquera mentioned:

*«This very majority (of the liberal population) regrets the disgrace of our decrees, and everything associated with the behavior of a small circle of speculators, whose liberalism is only proportionate to the growth of their wealth and the filling of their caskets (...) This wrong has reached the degree to which the Junta de Crédito Nacional, in keeping with the demands and influence of this circle, has become an unrecognizable authority, arbitrator of the fortune and interests of citizens, filling the coffers of one, snatching away the bread and sustenance from others (...). In order to eradicate this cancer, your authority is needed»<sup>18</sup>.*

Historical research based on popular opinion articulated in newspapers has concluded that although land ownership did change hands (the Church and its communities), the new landowners consisted of a small group of individuals. In addition to corruption, the low level of participation was due to ignorance of the procedures and the costs involved in acquiring lots through public auction (costs of transaction), poverty (making it impossible for farmers to buy bonds) and finally, threats made by the Church to a largely Catholic population (see Alarcón 1973; Oficina De Investigaciones Socioeconómicas y Legales, Ofisel 1975; Díaz 1977; Villegas 1977 )<sup>19</sup>. In conclusion, pre-existing institutional factors determined that the redistribution of

(Footnote continued)

square metres according to the Courvel guide (1940). If the area was unknown, it was calculated based on the auction sale price, valued price, year of purchase and location.

<sup>17</sup> Villegas (1977) documents public opinion expressed in newspapers of the time.

<sup>18</sup> Letter sent to President Tomás Cipriano de Mosquera in 1862 (Villegas 1977, p. 55). Corruption of the elite was also pointed out in President Mosquera's response to the people's letter: *«Secure in this impunity, the members of the Junta Suprema Directiva del Crédito Nacional continue to be negligent with respect to the law, in the fulfillment of their responsibilities, corruption and rebellion against the orders of legal authority...»*.

<sup>19</sup> According to Sánchez *et al.* (2010), the fragility of the *de jure* institutions with respect to the *de facto* ones is also visible in the process of distribution of vacant land during the second half of the 19<sup>th</sup> century, in which large tracts of land were granted to large landholders to the detriment of poor farmers.

property rights based on disentanglement would simply reproduce the land concentration that had existed since the colonial period.

Based on historical research, it is possible to argue that despite the fact that *de jure institutions* stimulated agrarian reform and land redistribution, *de facto institutions* — the influence of landowners on governmental entities (e.g. the *Junta Suprema Directiva del Crédito Nacional* and the Agency of Disentailed Land) — encouraged the concentration of disentailed land. The actual distribution of disentailed land in Table 1 proves such a claim.

Table 1 shows the number of squared kilometres of disentailed land by department, the valued price, the price paid for the auctioned land (in bonds), the number of purchases in each state and the concentration index (Gini) calculated with the information of the area (in squared metre) purchased by each buyer in a particular state from 1864 to 1884. During these years, a total of 1,720.9 km<sup>2</sup> of rural and urban land was disentailed in Colombia. Using current geographical boundaries as a reference, the departments (current) where most mortmain land was disentailed were: Santander (20.98 per cent), Cundinamarca (17.34 per cent), Sucre (17.54 per cent) and Boyacá (14.48 per cent). The number of purchases made by the department was as follows: Cundinamarca (501), Santander (310), Boyacá (193) and Nariño (189), for a total of 1,193 purchases (86.14 per cent of the auctions)<sup>20</sup>. These findings are consistent with historical studies by Alarcón (1973), Díaz (1977) and Meisel and Jaramillo (2007) who point out that the process of disentanglement was heterogeneous at the regional level and that the *departamentos* that most contributed to disentanglement were Cundinamarca, Boyacá and Cauca (Nariño was part of the state of Cauca at that time)<sup>21</sup>.

Based on the data in Table 1, it is apparent that the *departamentos* (current) that most contributed to disentanglement, that is, where most purchases took place (86.14 per cent), show concentration indexes closer to 1 (column 8): Santander (0.93), Cundinamarca (0.8), Nariño (0.8) and Boyacá (0.75). The same pattern of high inequality is also observed in some *departamentos* (current) with fewer purchases: Norte de Santander (49 purchases, Gini of 0.88), Huila (15 purchases, Gini of 0.83), Tolima (48 purchases, Gini of 0.72). In the *departamentos* (current) with the smallest number of transactions (in today's Sucre, Casanare, Valle del Cauca), the Gini coefficient was relatively low (approximately 0.5). For the country as a whole, the Gini index was 0.89, confirming the popular belief that disentailed land became concentrated in the hands of very few individuals instead of promoting a more equal distribution of

<sup>20</sup> The information was treated in the following way: the municipal data were taken and then the municipality within the current *departamento* to which it belonged was located and the calculations were carried out in each case. In other words, the current political division of the country consisting of 32 *departamentos* with Bogota as the capital district was used.

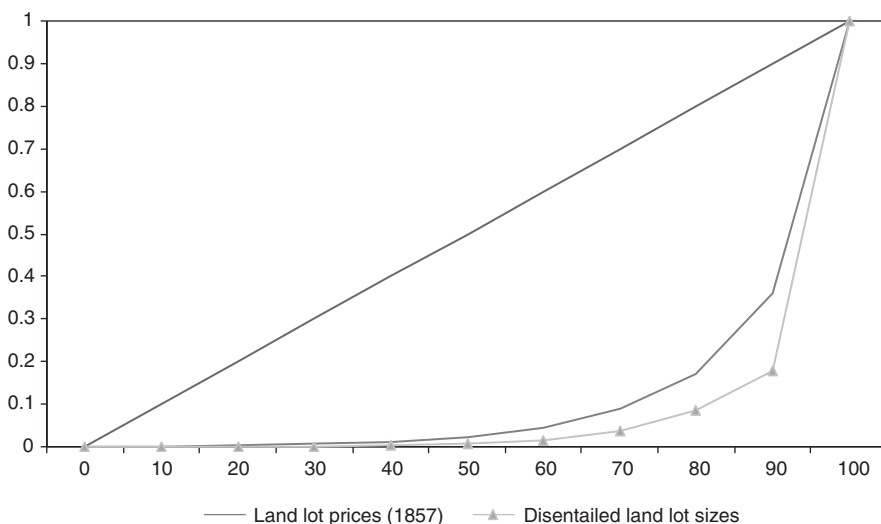
<sup>21</sup> Historical studies show that Antioquia was one of the states in which disentanglement was most difficult due to clerical opposition (see Díaz 1977; Oficina De Investigaciones Socioeconómicas y Legales, Ofisel 1975).

**TABLE 1**  
DISTRIBUTION OF DISENTAILED LAND BY *DEPARTAMENTO* (STATE)

|                    | km <sup>2</sup> | Percentage of km <sup>2</sup> | Valued Price (thousands of pesos) | Paid price (thousands of pesos) | Number of purchases | Gini        |
|--------------------|-----------------|-------------------------------|-----------------------------------|---------------------------------|---------------------|-------------|
|                    | 1               | 2                             | 3                                 | 4                               | 5                   | 6           |
| Cundinamarca       | 298.49          | 17.34                         | 843.26                            | 3002.74                         | 501                 | 0.80        |
| Santander          | 361.08          | 20.98                         | 146.43                            | 537.97                          | 310                 | 0.93        |
| Boyacá             | 249.21          | 14.48                         | 305.07                            | 1295.73                         | 193                 | 0.75        |
| Nariño             | 81.05           | 4.71                          | 188.90                            | 815.88                          | 189                 | 0.80        |
| Norte de Santander | 166.41          | 9.67                          | 32.10                             | 73.19                           | 49                  | 0.88        |
| Tolima             | 218.27          | 12.68                         | 51.88                             | 119.60                          | 48                  | 0.72        |
| Cauca              | 9.10            | 0.53                          | 29.04                             | 99.89                           | 45                  | 0.63        |
| Antioquia          | 1.02            | 0.06                          | 35.51                             | 80.47                           | 16                  | 0.72        |
| Huila              | 25.73           | 1.50                          | 8.50                              | 41.98                           | 15                  | 0.83        |
| Bolívar            | 7.29            | 0.42                          | 4.16                              | 8.82                            | 8                   | 0.65        |
| Sucre              | 301.83          | 17.54                         | 2.90                              | 7.41                            | 5                   | 0.54        |
| Casanare           | 1.29            | 0.08                          | 3.60                              | 10.70                           | 3                   | 0.46        |
| Valle del Cauca    | 0.16            | 0.01                          | 1.51                              | 4.15                            | 3                   | 0.64        |
| <b>Total</b>       | <b>1720.95</b>  | <b>100.00</b>                 | <b>1652.86</b>                    | <b>6098.52</b>                  | <b>1385</b>         | <b>0.89</b> |

Source: AGN, Sección República, *Fondo de Bienes Desamortizados (Rollo 1 a 30)*, Diario Oficial (1864-1884), Villegas (1977), Courvel (1940) and authors' calculations. The calculations were made using the current political division of Colombian *departamentos*.

**FIGURE 2**  
LORENZ CURVES FOR PRICES OF TRADED LOTS IN 1857 AND DISENTAILED  
LAND LOT SIZES



Source: AGN, Sección República, *Fondo de Bienes Desamortizados (Rollo 1 a 30)*, Diario Oficial (1864-1884) and AGN Fondo Notarias, Notaria 1 de Bogota, año de 1857, Volumen 348-350, Tomos 1-3.

property. Although it is difficult to determine how disentailed land purchases affected the land distribution before the disentanglement process, existing evidence from notary archives compiled by Sánchez *et al.* (2007) shows that the Gini of *land lot prices* traded in 1857 was around 0.79. Similar figures are obtained for other years. The 1857 price Gini, although high, is lower than the figure of 0.89 obtained for the disentailed land Gini<sup>22</sup>. The Lorenz curve for both size of disentailed lots and prices of traded lots is depicted in Figure 2. In addition, land price Ginis are in general higher than land size Ginis as large states are less rough (rustic?) and have better soil and irrigation and hence higher prices per unit of land.

Since article 6 of the 1861 decree emphasized that large tracts of church lands had to be divided into small lots in order to increase the number of individuals with access to disentailed land, scholars such as Meisel and Jaramillo (2007) have argued that the disentanglement of mortmain land

<sup>22</sup> Williamson (2009) concluded recently that around 1790 the Gini coefficient of income for Latin America reached 57.6, up from 36.2 in 1491. Although income and land Ginis are not comparable, Williamson's figure suggests that the distribution of wealth in Latin America during the 19<sup>th</sup> century was flatter than the one obtained from the data on disentailed purchases.

succeeded in prompting a more egalitarian access to land. However, as we have seen, land ended up in the hands of few individuals and one of the principal goals of land reform failed. Villegas (1977), for instance, stressed that small lots were not desirable to buyers, making it necessary to join them in larger tracts in order to be offered for sale. Thus, Villegas writes:

«For example, in order to sell off common lots (*ejidos*) in Bogotá, it was necessary to suspend the sale of smaller lots and regroup them into larger lots because there were no buyers for the smaller lots» (Villegas 1977, p. 60).

In fact, the evidence shows that the allocation of small terrains among different farmers did not happen and what actually occurred was a consolidation of large-scale properties (large estates). For example, in Pasto (in today's Nariño), the Sandoná Hacienda was divided up into forty-eight lots, thirty-nine of which were purchased by Manuel J. Valencia. The Negavita property in Pamplona (in today's Norte de Santander) was divided into five lots, four of which were bought by Dámaso Zapata. The Hacienda Las Monjas in Facatativá (Cundinamarca) was divided into thirty-four lots bought by six people, confirming that the disentailment of mortmain land actually reinforced large-scale holdings<sup>23</sup>.

The disentailment process as a whole encompassed 1,385 purchases with 334 buyers. The top ten buyers (3 per cent of the total) in Table 2 made up 440 purchases (31.77 per cent of the total), retaining almost 17 per cent of the total area of land sold. These figures clearly confirm that large estates and land concentration were strengthened as just a small number of individuals gained control of a large amount of the expropriated land. In addition, some land was concealed (unregistered mortmain land), mostly in regions like Cauca and Antioquia in which the Catholic Church exercised a strong influence, as pointed out by Meisel and Jaramillo (2007), confirming the difficult task of the government in effectively implementing its legislation so as to successfully enact land reform. In conclusion, land distribution policies implemented by the central government were not very successful because: (i) they reproduced land concentration by favouring a small group of individuals and thus did not promote more equal distribution of land property, which was one of the chief goals of the legislation; and to a lesser extent; and (ii) the opposition exercised by the clergy through the concealment of mortmain land and the political power it retained in certain departments, for example, in Antioquia.

It has been empirically shown that disentailed land remained concentrated and that the objectives of the legislation — *de jure institutions* — were not achieved because landowners' power and influence and, to a lesser extent, the Church — *de facto institutions* — curbed the implementation of

<sup>23</sup> AGN, Sección República, *Fondo de Bienes Desamortizados (Rollos 1-30)*, Diario Oficial (1864-1884).

**TABLE 2**  
TOP TEN BUYERS OF DISENTAILED LAND

| Name of purchaser | Number of purchases | km <sup>2</sup> | Number of purchases as percentage of total | km <sup>2</sup> as percentage of total |
|-------------------|---------------------|-----------------|--|--|
| Alejandro Cordova | 44                  | 134.87          | 3.18                                       | 7.8                                    |
| Lucrecio Salcedo  | 71                  | 46.60           | 5.13                                       | 2.7                                    |
| Isaac Montejo     | 56                  | 44.68           | 4.04                                       | 2.6                                    |
| Lope Restrepo     | 42                  | 42.26           | 3.03                                       | 2.5                                    |
| Camilo A García   | 27                  | 6.89            | 1.95                                       | 0.4                                    |
| Manuel J Valencia | 39                  | 4.78            | 2.82                                       | 0.3                                    |
| Perea y Páez      | 61                  | 1.78            | 4.40                                       | 0.1                                    |
| Trino Vargas      | 28                  | 1.04            | 2.02                                       | 0.1                                    |
| Timoteo Hurtado   | 44                  | 0.98            | 3.18                                       | 0.1                                    |
| Cruz Ballesteros  | 28                  | 0.54            | 2.02                                       | 0.0                                    |
| <b>Total</b>      | <b>440</b>          | <b>284.42</b>   | <b>31.77</b>                               | <b>16.53</b>                           |

Source: AGN, Sección República, *Fondo de Bienes Desamortizados (Rollo 1 a 30)*, Diario Oficial (1864-1884), Courvel (1940) and authors' calculations.

land reforms. Thus, the case of disentaile land illustrates that where initial inequalities existed, institutions evolved in a less democratic manner (perpetuating inequality) benefiting a small elite. The consequences of such concentrated benefits of land reforms would be low levels of investment in public goods such as education. This will be developed in the next section.

#### 4. ACCUMULATION OF HUMAN CAPITAL AND LAND CONCENTRATION

Galor *et al.* (2004) emphasize that in societies in which land ownership is concentrated, public spending on education is desirable for everyone except the landowners, given that the benefits they receive from education are lower than the money they pay in taxes<sup>24</sup>. The previous section described how

<sup>24</sup> In more egalitarian societies (a more homogenous population), there are greater incentives to invest in education and public goods. For example, Goldin and Katz (2003) argue that in the 19<sup>th</sup> century the United States was one of the most successful countries in terms of providing an egalitarian system of education. This system of education was founded on a set of virtues based on democratic principles: (i) public provision of services; (ii) decentralization of the educational system;

disentailed land ended up in few hands and concluded that despite the fact that legislation — the September 9, 1861 decree — sought to implement a more equal distribution of land, this goal was not achieved due to the influence that a small group of individuals had over the mechanisms of disentailed land acquisition, which allowed them to appropriate most of it.

#### 4.1. The early 20<sup>th</sup> century Colombian literacy rate in the Latin and North American context

North America (United States and Canada) was characterized very early on by high rates of literacy; in 1870, more than 80 per cent of the population (10 years and older) could read<sup>25</sup>. In contrast, and according to Mariscal and Sokoloff (2000), the Latin American case was not so positive: of the countries with the highest rates of literacy, none were comparable to North America. In 1900, Argentina and Uruguay reached literacy rates above 50 per cent, followed by Chile and Cuba with 40 per cent and Costa Rica at 33 per cent (see Mariscal and Sokoloff 2000)<sup>26</sup>. In the least successful cases, that is, Mexico, Brazil, Venezuela, Peru, Colombia, Bolivia and Honduras, it was not until the 1920s that 30 per cent of the population was literate. Nevertheless, as shown by Newland (1994), literacy rates did increase steadily throughout the first half of the 20th century from 28 per cent in 1900 to 48 per cent in 1925, finally reaching 64 per cent in 1950. However, the rates were never comparable to those of North America.

The relative prosperity of Argentina and Chile — in terms of literacy and the number of children enrolled in school — in Latin America was due to the influx of immigrants to urban centres (Newland, 1991, 1994)<sup>27</sup>. The success

*(Footnote continued)*

(iii) public funding — through the sale of public land, parental contributions and taxes — assuring that education be free; (iv) secular education; (v) gender neutrality; and (vi) a universal educational system that provided access to all children.

<sup>25</sup> In the United States in 1910, 92.3 per cent of the population was literate, three times the rate of the most literate countries in Latin America (Argentina, Chile, Costa Rica and Cuba) and four times more than in Brazil and Mexico (Mariscal and Sokoloff 2000).

<sup>26</sup> In Latin America, the rate of literacy at the beginning of the 19<sup>th</sup> century was less than 10 per cent. Within 50 years, that rate had increased 5 percentage points reaching 15 per cent, finally reaching 27 per cent in 1900. The most prosperous countries in Latin America had the following rates: (i) Argentina, 23.8 per cent in 1869 and 45.8 per cent in 1895; (ii) Chile, 23.3 per cent in 1864 and 30.3 per cent in 1885 (Newland 1991).

<sup>27</sup> See Mariscal and Engerman (2000). These authors point out that in Argentina, despite the fact that the literacy rate had risen to 22.1 per cent in 1869 and to 65 per cent in 1914, it was much higher in urban areas. In 1895, the literacy rate in Buenos Aires was 71.8 per cent while in the rest of the country it was only 42.8 per cent. This difference in literacy rates between foreigners and nationals is corroborated by Newland (1991) who found that in 1895, 65 per cent of resident foreigners in Argentina could read and write, a figure far above that of 47 per cent for those born in Argentina. In Chile, 13.3 per cent of citizens could read and write compared to 46.3 per cent of foreign residents.



of Costa Rica was mainly thanks to the homogeneity of the population and the egalitarian conditions that had existed since the colonial period, as it was a society that lacked indigenous labour and precious metals. In conclusion, the educational performance of countries in Latin America during the 19<sup>th</sup> century and early 20<sup>th</sup> century varies significantly as some countries managed to reach higher levels of literacy and school enrolment than others<sup>28</sup>.

How did Colombia perform? Helg (1987) and Ramírez and Téllez (2006) argue that at the beginning of the 20<sup>th</sup> century, the percentage of adults in Colombia who knew how to read was far below the Latin American average as seen above. Based on the 1912 census, Helg (1987) found that the global rate of literacy in people above the age of 7 years was 17 per cent. Although this figure is clearly an overestimate, it shows that the country's literacy rate was quite low.

#### 4.2. Accumulation of human capital and concentration of disentaile land

According to the national census of 1912, the percentage of men who knew how to read was 12.3 per cent<sup>29</sup>. Analysing the statistics found in the census at the departmental level, and using current geographical boundaries as a reference (see footnote 18), it is clear that in those departments in which a higher percentage of men could read, there were no events of disentaile land auctions. These departments were San Andrés (26.12 per cent), Putumayo (24.76 per cent), Caldas (17.06 per cent) and Quindío (17.02 per cent)<sup>30</sup>.

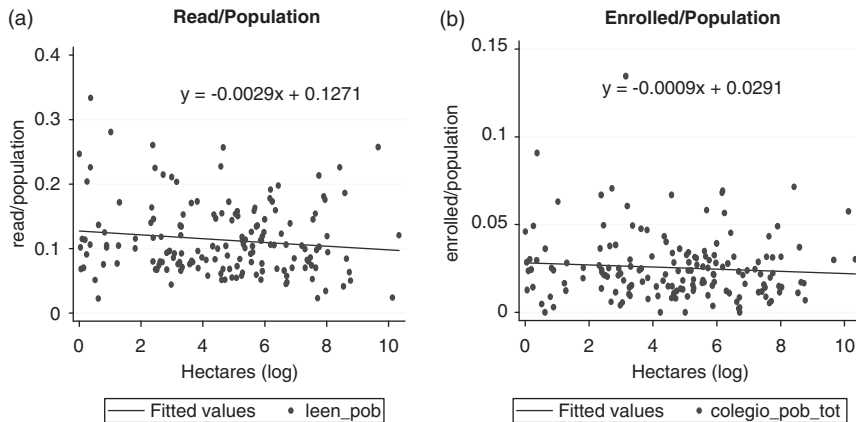
In the departments (current ones) in which the greatest number of purchases took place and which had high rates of inequality of disentaile land (Gini), the 1912 literacy levels were lower. Examples of this pattern include Cundinamarca (including Bogotá) with a Gini of 0.8 and a literacy rate of 10.72 per cent, Boyacá with a Gini of 0.75 and a literacy rate of 8.07 per cent,

<sup>28</sup> In Colombia, Ramírez and Salazar (2007) indicate that the poor educational performance of Colombia — even in relation to other Latin American countries — was the result of the lack of incentives to improve the system including: (i) an agrarian economic structure that did not depend on skilled labour; (ii) a social structure in which only a small elite had access to education; (iii) low and unstable wages for teachers; (iv) instability of the education budget due to civil wars; (v) Church–State rivalry and governmental changes that impeded the organization of the system.

<sup>29</sup> The 1912 census documents literacy exclusively among men. Not all of those who could read could also write and censuses generally registered these two variables separately (Newland 1991, 1994 and the 1912 census). The proportion of men who could write in Colombia in 1912 was 10.72 per cent. According to Newland (1991, 1994), it was to be expected that this percentage would be lower than the percentage of men who could read (12.33 per cent) as people were usually taught how to read and then how to write. Enrolled male children as a percentage of the population were 2.75 per cent.

<sup>30</sup> This same result is obtained in the case of men who could write: San Andrés (25.6 per cent), Putumayo (21.9 per cent), Caldas (17.1 per cent) and Quindío (17 per cent). For enrolled male children, the results are almost identical. The three departments with the highest enrollment rates were Putumayo (14.07 per cent), San Andrés (8.21 per cent) and Caldas (3.8 per cent).

**FIGURE 3**  
CORRELATION BETWEEN HECTARES OF DISENTAILED LAND AND HUMAN CAPITAL INDICATORS



Source: AGN, Sección República, *Fondo de Bienes Desamortizados (Rollo 1-30)*, Diario Oficial (1864-1884), Courvel (1940), Censo de 1912 and authors' calculations.

and Santander with a Gini closer to 1 and a rate of literacy just above the national average<sup>31</sup>. Figure 3 presents the correlation between the logarithm of disentailed land and the indicators of 1912 human capital, which confirms the negative relationship between land concentration and the 1912 literacy rates and the 1912 percentage of children enrolled in school (as a proportion of the population).

Both the high concentration of disentailed land — a Gini coefficient of 0.89 at the national level — and the low percentage of men who could read, write and attended school at the national level (12.33, 10.72 and 2.75 per cent, respectively) should be highlighted. To discover the effects that disentailed land had on the provision of education empirically is the main purpose of the paper. It should be pointed out that despite the fact that some of the Church's possessions were expropriated to be redistributed, ownership of the former church lands was concentrated in the hands of a small group of landowners who used their *de facto* political and economic power for that purpose. It is then to be expected that as land ownership became more concentrated, the provision of education, *ceteris paribus*, would have diminished in those places

<sup>31</sup> In the case of men who knew how to write in 1912, the same pattern is found. For instance, Cundinamarca (9.9 per cent) and Boyacá (7.3 per cent) were both below the national average. The same result is found for the percentage of enrolled children in 1912: Cundinamarca (2.31 per cent, which is 0.43 percentage points below the national average) and Boyacá (1.60 per cent or 1.14 percentage points below the national average).

that experienced disentailed land purchases. As landowners became more powerful, their ability to lower their tax burden may have been strengthened, which would have negatively affected the provision of education.

In this regard, Mariscal and Sokoloff (2000) stated that initial inequalities limited investment in public education. Thus, in Latin American societies characterized by high levels of inequality, the provision of public education was scarce and the provision of human capital was very limited. In section 5, this negative relationship between land concentration originating in the disentanglement process and the accumulation of human capital will be examined empirically.

## 5. EMPIRICAL MODEL AND ECONOMETRIC RESULTS

### 5.1. Empirical model

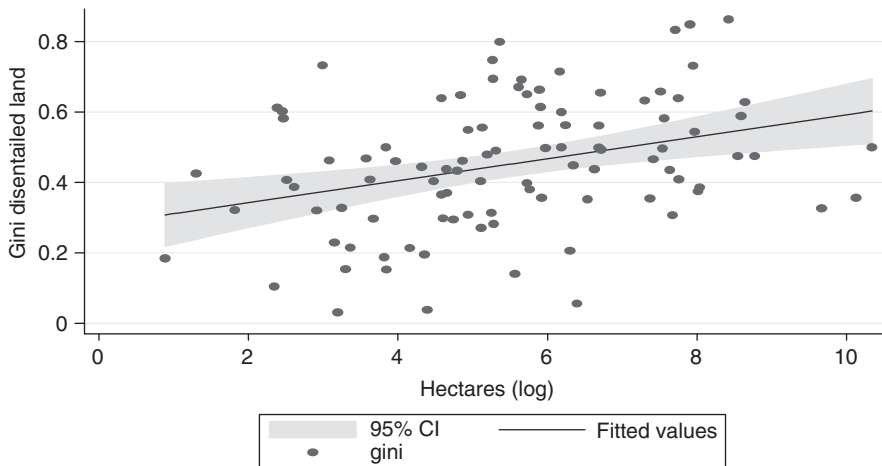
The empirical model attempts to show the negative relationship between the concentration of land — in this case disentailed land — and human capital measured as the proportion of literate males to total population in 1912. The econometric model to be estimated is the following:

$$A_i^{1912} = \beta_0 + \beta_1 \text{Disentailed Hectares}_i + \beta_2 \text{Geography}_i + \beta_3 \text{Population-1870}_i + \varepsilon_i \quad [1]$$

in which  $A_i^{1912}$  represents the percentage of males in each municipality  $i$  who could read in 1912, or the proportion of males enrolled at school to the total population in 1912. *Disentailed Hectares* refers to the total number of disentailed hectares purchased in municipality  $i$  during the period 1864-1884. Geography variables collected by Sánchez and Núñez (2000) include land erosion, precipitation and altitude, which may have affected access to schools. For instance, in places of higher altitude or moderate rain precipitation, the incidence of tropical diseases may have been lower and hence children's health better, which may have influenced school attendance positively. By the same token, terrains with relatively high levels of erosion would have had low levels of agricultural output, which may have reduced schooling rates and forced children to work. *Geography* also contains the distance to Bogotá — the country's capital and to the Pacific and the Caribbean Seaports. It is expected that the further a municipality was located from those places, the more difficult the provision of education would have been. Finally, as it is anticipated that in more urban and highly populated municipalities the provision of and access to education would have been higher, *Population 1870* is used as the control.

It has been shown that disentailed land remained concentrated in the hands of a small group of individuals, so that the hectares variable — that is, the quantity of disentailed hectares — may be a good indicator to determine

**FIGURE 4**  
CORRELATION BETWEEN HECTARES PURCHASED AND GINI OF DISENTAILED LAND



Source: AGN, Sección República, *Fondo de Bienes Desamortizados (Rollo 1 a 30)*, Diario Oficial (1864-1884), Courvel (1940) and authors' calculations.

land concentration. Figure 4 supports this idea since the correlation between the logarithm of disentaile land at the municipal level and the Gini coefficient is positive, which may confirm that the greater the amount of disentaile hectares, the higher the index of disentaile land inequality.

Nevertheless, allocation of disentaile land may be endogenous to human capital despite the fact that this variable is observed years after disentanglement occurred. The reason is that 19<sup>th</sup> century human capital may have determined both the amount and concentration of disentaile land and the level of 20<sup>th</sup> century human capital. In other words, low levels of human capital in the past may be linked to higher purchases of disentaile land and current (1912) low levels of human capital. In addition, there could have been an unobserved variable that influenced both disentaile land purchases in the 1870s and human capital indicators in 1912.

In order to solve the possible source of this omitted variable or endogeneity biases, the variable *year of the municipality foundation* was used as an instrument for hectares of disentaile land. It is expected that — after controlling for population and geography variables — there would be larger amounts of disentaile land in those municipalities founded during earlier periods and smaller amounts in those municipalities founded more recently. In other words, the older the municipality, the longer the Church may have been favoured by mortmain land and the larger the quantity of such land in the hands of the

Church. In this way, *year of the municipality foundation (founding year)* is correlated only with the independent variable (hectares) but uncorrelated with the dependent variables (literacy and school enrolment in 1912).

Thus, the first stage equation will be as follows:

$$\text{Disentailed\_Hectares}_i = \alpha_0 + \alpha_1 \text{ Geography}_i + \alpha_2 \text{ Population\_1870}_i + \alpha_3 \text{ founding\_year}_i + v_i \quad [2]$$

Consequently, a negative relationship between those municipalities with a more recent year of foundation and the quantity of disentailed hectares is expected.

## 5.2. Econometric results<sup>32</sup>

Table 3 shows the descriptive statistics and Ordinary Least Squares (OLS) and the first and second stages of Instrumental Variables (IV) estimations for the 1912 human capital measures — males who could read and were enrolled in school in 1912 as a percentage of the population. The OLS results in columns 3 and 6 show that, after controlling for geography and population, the effect of disentailed land purchases on both measures of 1912 human capital is negative, but non-significant in the case of percentage of enrolled children. Given the likely bias of the OLS coefficients, an IV approach is undertaken. The first stage results are presented in column 4 and, as expected, the instrumental variable *founding\_year* is negatively and significantly correlated (at 99 per cent) with disentailed land purchases in the period 1864-1884. Thus, the later the foundation of a particular municipality, the lower the amount of land kept by the Catholic Church would have been. The strength of the instrument is shown by the Stock–Yogo test for the Cragg–Donald F-statistic, which rejects the hypothesis of weak instruments at the 10 per cent level if one is willing to accept a maximum weak instrument bias of 20 per cent. The endogeneity test indicates that the null hypothesis of non-endogeneity is rejected, pointing out that the OLS coefficient for disentailed hectares is indeed biased.

Other covariates in the first stage also have the expected signs and are highly significant. Thus, in municipalities with larger populations and closer to Bogota, the Church accumulated more land. Columns 5 and 7 contain the second-stage IV results indicating that disentailed land purchases in a municipality were negatively correlated to literacy rates and school enrolment. Thus, the relationship is negative and significant at 95 and 90 per cent, respectively. For instance, if the amount of land disentailed increased 1 per cent, the

<sup>32</sup> As previously mentioned, not every man who could read could also write, so that the same econometric exercise was performed taking the percentage of men who could write in 1912 as a dependent variable. Similar results (not reported) were found in the case of the population that could read.

**TABLE 3**  
ECONOMETRIC RESULTS OF EDUCATIONAL OUTCOMES (1912)

|  | Descriptive statistics | Percentage of males who could read in 1912 |                        |                       | Percentage of males enrolled in school in 1912 |                        |                       |
|--|------------------------|--|------------------------|-----------------------|--|------------------------|-----------------------|
|  | 1                      | 2  | 3                      | 4                     | 5  | 6                      | 7                     |
| Variables                                      | Mean and SD            | OLS  | First stage            | Second stage TSLS     | OLS  | First stage            | Second stage TSLS     |
| Percentage of males who could read in 1912     | 0.123<br>0.057         |  |                        |                       |  |                        |                       |
| Percentage of males enrolled in school in 1912 | 0.026<br>0.019         |  |                        |                       |  |                        |                       |
| Purchases of disentailed hectares              | 1.052<br>2.261         | -0.0023**<br>(0.0009)                      |                        | -0.0351**<br>(0.0154) | -0.0002<br>(0.0003)                            |                        | -0.0064*<br>(0.0036)  |
| Erosion index                                  | 3.840<br>1.238         | -0.001<br>(0.0018)                         | 0.1375**<br>(0.0701)   | 0.0035<br>(0.0036)    | -0.0010*<br>(0.0005)                           | 0.1329**<br>(0.0649)   | -0.0001<br>(0.0008)   |
| Precipitation                                  | 1.702<br>0.986         | 0.0012<br>(0.0022)                         | -0.2518**<br>(0.0905)  | -0.0089<br>(0.0060)   | 0.0014**<br>(0.0007)                           | -0.2441***<br>(0.0864) | -0.0004<br>(0.0014)   |
| Altitude above sea level (thousands, metres)   | 1.339<br>0.912         | 0.0175***<br>(0.0030)                      | -0.1348<br>(0.1180)    | 0.0130**<br>(0.0053)  | 0.0075***<br>(0.0009)                          | -0.1277<br>(0.1127)    | 0.0067***<br>(0.0012) |
| Distance to Bogotá                             | 2.501<br>1.657         | 0.0122***<br>(0.0018)                      | -0.4339***<br>(0.0682) | -0.0024<br>(0.0074)   | 0.0037***<br>(0.0005)                          | -0.4428***<br>(0.0647) | 0.0008<br>(0.0018)    |
| Distance to the main Pacific sea port          | 3.527<br>1.843         | -0.0062***<br>(0.0020)                     | 0.2923***<br>(0.0797)  | 0.0031<br>(0.0055)    | -0.0044***<br>(0.0006)                         | 0.2940***<br>(0.0758)  | -0.0026**<br>(0.0013) |

TABLE 3 (Cont.)

|   |                |                        |                        |                                |                        |                               |                       |
|---|----------------|------------------------|------------------------|--------------------------------|------------------------|-------------------------------|-----------------------|
| Distance to the main Caribbean sea port | 5.373<br>2.400 | -0.0050***<br>(0.0015) | 0.1872***<br>(0.0585)  | 0.0008<br>(0.0036)             | -0.0032***<br>(0.0004) | 0.1849***<br>(0.0555)         | -0.0021**<br>(0.0008) |
| Total population in 1870 (thousands)    | 3.617<br>3.402 | 0.0018***<br>(0.0006)  | 0.1523***<br>(0.0239)  | 0.0071***<br>(0.0027)          | 0.0010***<br>(0.0002)  | 0.1507***<br>(0.0232)         | 0.0020***<br>(0.0006) |
| Founding year                           | 1685<br>168    |                        | -0.0013***<br>(0.0005) |                                |                        | -0.0014***<br>(0.0004)        |                       |
| Number of observations                  |                | <b>676</b>             | <b>676</b>             | <b>676</b>                     | <b>724</b>             | <b>724</b>                    | <b>724</b>            |
| Endogeneity test ( <i>P</i> -value)     |                |                        |                        | <b>11.944</b><br><b>0.0005</b> |                        | <b>4.464</b><br><b>0.0346</b> |                       |
| Stock and Yogo test                     |                |                        |                        | <b>7.190**</b>                 |                        | <b>8.335**</b>                |                       |

*Notes:* Standard errors for the coefficients are in brackets below the coefficients. The table reports OLS (Ordinary Least Squares) and the first and second stage of the TSLS (Two-Stage Least Squares).

Critical values for the Stock and Yogo weak instrument test (5% significance) based on TSLS size with exact identification are 16.38, 8.96, 6.66 and 5.53, for the 10%, 15%, 20% and 25% sizes, respectively.

\*, \*\*, \*\*\*: 90%, 95% and 99% significance respectively.

proportion of literate males would be 0.035 lower. This same relationship is confirmed when using the case of male children who attended school, showing a 1 per cent increase in the quantity of disentailed land, where the rate of enrolment would be 0.006 lower. The relative impact of disentailed land purchases is considerable. For instance, a change in one standard deviation of the latter variable would have reduced in 1.3 standard deviations of the 1912 percentage of literate males and in 0.79 standard deviations of the 1912 percentage of males enrolled at school. This means that the concentration of disentailed land had important negative effects on the accumulation of human capital.

Thus, the results validate the hypothesis that the greater the concentration of economic power measured through size of landholdings, the lower the investment in public goods such as education. Although the expropriation of Catholic Church assets was aimed at making the distribution of land property more egalitarian, the *de facto* institutions (the political and economic power of the elite) made this goal impossible to achieve and, on the contrary, simply reproduced and even worsened the existing inequality.

## 6. CONCLUSIONS

In this paper, two major conclusions were reached. First, it was quantitatively verified that the Liberal administrations' attempt to achieve better land distribution through disentanglement failed due to the strong influence that a small group of individuals had on the institutions in charge of handling the disentanglement process. The final result was that, despite the legislation, the expropriated church land ended up in few hands. Second, a negative relationship between land concentration and the accumulation of human capital was confirmed. In fact, it was found that the greater the amount of disentailed land purchases in a particular municipality, the lower was its future rates of literacy and school enrolment. Despite the fact that during the second half of the 19<sup>th</sup> century the Liberal administrations divested the Church of its land, precisely to attain a more equal distribution of land, the final upshot was that the allocation of disentailed land exhibited even higher levels of concentration. For instance, the Gini coefficient of disentailed land purchases was 0.89 while the figure prior to the disentanglement process was in fact lower. This negative outcome evidenced the political manipulation of the disentanglement laws for the benefit of landowners. Thus, excluding property rights institutions inherited from the colonial period impeded the redistribution of land ownership during the post-independence reducing the incentives for the provision of growth-enhancing public goods (Coatsworth 2008). In consequence, the concentration of disentailed land reproduced and even enhanced both the economic and political power of landowners and curbed investment in human capital and hence long-run economic development.



Thus, the political power retained by this group of individuals — large landowners — led to lower levels of accumulation of human capital. This group could have used its political influence to avoid contributing to the investment in public goods, for example, through a refusal to pay direct taxes on their wealth and properties in line with the reasoning of Sokoloff and Zolt (2007). The negative relationship between land concentration and social indicators is corroborated through an econometric model that verified the negative and significant relationship between disentailed hectares in the 1870s — and thus concentration of land — and the rates of literacy and school enrolment in 1912.

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