Origins of Institutions and Inequality in Latin America

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Abstract

Colonial institutions are considered to be an important determinant of post-colonial development with many scholars concluding that former British colonies inherited better institutions. This paper provides an empirical analysis of the origins of Latin American institutions and shows that colonial features have only indirect effects on institutions through their effects on economic and political redistribution. It also explains the role of British intervention in the region. After independence, Britain exerted an important economic influence in Latin America which contributed significantly to the consolidation of the economic and political institutions in the region. Another aspect of the region that affect the institutions is the economic dependence on natural resources which has a negative effect on institutions. Peru, Bolivia, Uruguay and Costa Rica are used as examples to explain how colonial inheritance, natural resources, inequality, institutions interact in the Latin American context. (JEL F54, O17, O54, P48)

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1 Introduction

From the 16th to the mid-20th century, several European powers established colonies in Asia, Africa and America. Europeans settled and took control of these territories. The impact of colonisation is considered to be immense and pervasive. Colonial practices spur the spread of colonial languages, religion, culture and territorial boundaries and scholars have proposed several theories on the colonial origins of institutions in developing countries. This literature is based on two hypotheses. One is that a series of colonial aspects shaped the character of those institutions created after the independence (i.e. early institutions). The second one is that current institutions strongly reflect early ones due to institutional persistence (Section 2 reviews this literature).

Most of these empirical studies use large samples composed by all former colonies (for which data is available). While this is helpful to maximise the number of observations in cross-country regressions, it neglects some basic differences among regions. The discovery and exploration of the Americas was mainly an Iberian (Spanish and Portughese) project. However, after the Napoleonic wars and the raise of Britain as coloniser power, Iberian crowns lost their colonies. Most of the colonised territories in Latin America declared their independence in the 1820s. This is over a century earlier than the decolonisation process of British and French colonies in other regions in the 1960s. So, even if the colonial past may have shaped the region's early institutions, the greater passage of time has given greater scope for institutional change meaning that current institutions may not just reflect the ones created at the time of independence as hypothesised by previous literature (second hypothesis), but other factors and post-colonial events may have also played a role in influencing the character of current institutions.

The empirical analysis in Section 3 shows that Latin American institutions are the outcome of a more complex interaction between colonial history, inherited colonial inequality and post-colonial events. These interactions help to explain the current poor institutional setting and high levels of inequality in the region.

This work proceeds by testing the most popular theories of colonial origins of institutions based on four colonial aspects: coloniser identity, size of European settlements, organisation of pre-colonial populations, and colonial resource endowment. Many scholars have suggested that *British did better*, i.e. British former colonies inherited better institutions than non-British ones. However, these scholars do not elucidate the specific mechanisms through which British colonial rule exerts a positive effect. This work investigates these mechanisms. Although Latin American countries were mainly Iberian colonies, Britain did show interest in Latin America and, after independence, it exerted a sort of indirect colonial rule through foreign investments and trade with the region. This intervention has two effects on institutions. One *negative direct effect* derives from the problems of economic management and rent seeking opportunities created by the inflow of British capital. A second *positive indirect effect* goes through redistribution. In those areas where British capital was invested in productive activities, this may have contributed to the development of a middle class (through creation of job opportunities) improving thus redistribution and the quality of institutions. The net effect of British intervention in Latin America depends on which of these effects prevailed.

Finally, Latin American institutions cannot be explained without considering the role of natural resources. The colonisation of Latin America was driven by the discovery of silver and gold. The results show that resource-rich areas during colonial times inherited higher levels of inequality and therefore worse institutions. Moreover, after independence, countries with larger resource endowments attracted British investments increasing the rent-seeking opportunities and increasing the negative direct effect of British intervention on institutions. There is no evidence that European settlements and native population have any impact on current institutions (as hypothesised by previous literature) but British intervention and natural resources seem to play role.

The results also shed light on the role of natural resource endowments. Resource-rich colonial territories inherited higher levels of inequality and therefore worse institutions. After the independence, British investments in countries with a highly skewed distribution of resources increase the rent-

seeking opportunities for the ruling elite; in these countries a negative direct effect of British intervention on institutions prevails. In countries with little/no colonial resources, British investments provided the needed resources for economic development but without a strong dominant political and economic elite, these investments seem to have benefited a larger share of the population.

Finally, most Latin American economies were resource dependent even after the independence. Post-colonial oil and gas discoveries have a negative direct impact on institutions.

Section 4 presents some historical evidence for four Latin American countries that supports the empirical findings. The good performance of Costa Rica and Uruguay – backwater territories during the colonial period due to the lack of attractive natural resources –contrast to the poor institutions and high levels of inequality of Peru and Bolivia, both mineral based economies before and after independence. Section 5 summarises and concludes.

2 On the Origins of Institutions

Colonialism is perhaps the single most salient historical event of the modern era and as such, it has influenced several studies investigating the origins of institutions in the developing world. The most common colonial aspects considered to affect institutions of former colonies are: the identity of the coloniser power, size of European settlements, native population, and mineral and agricultural resources.

Most of the studies looking at how the identity of the coloniser power (e.g. Spanish, French, British) affects institutions in colonised territories conclude that *British did better*. For instance, La Porta et al. (1998, 1999) argue that former British colonies have better institutions due to the inheritance of common law legal systems that are linked to protection of property rights[1]. The supremacy of British legacy has also been related to tax pol-

[1]This is because common law developed in England as a defence of Parliament and property owners against the attempts by the sovereign to regulate and expropriate them;

icy (Thirsk, 1997), labour market regulation (Stotsky and WoldeMariam, 1997; Botero et al., 2004), contract enforcement (Djankov et al., 2003), investments on education and school enrolment (Grier, 1999; Bertocchi and Canova, 2002).

In their seminal contribution, Acemoglu, Johnson and Robinson (2001) argue that European colonisers created *good* institutions in those territories where they settled down. *Good* institutions are defined as those ones that protect property rights from possible government expropriation and are opposed to *extractive* institutions which are considered *bad* for development because they did not provide protection for private property and checks and balances against government expropriation. The aim of extractive institutions was to transfer as much of the colony's resources to the coloniser crown and were created in territories where Europeans did not find favourable conditions to settle due to adverse climatic conditions. Therefore, large European settlements are related to good institutions (similar conclusion in Easterly and Levine (2012)) .

An implicit assumption in Acemoglu, Johnson, and Robinson's works, is that all European colonisers had the same institutions. Mahoney (2010) argues that this is not the case and identifies two type of European colonisers: mercantilist (e.g. Spanish, Portuguese and French) and liberals (e.g. British). While during the colonial period, European institutions were mostly based on mercantilist principles, this was also the period when liberalism started as major doctrine and intellectual endeavour in Europe and some countries approached this doctrine earlier than others, Britain being the first. These differences may have impacted the type of institutions that colonisers set in their colonies. According to Mahoney, mercantilists settled and implanted their institutions in territories with large populations due to the labour exploitation opportunities. Mercantilist institutions were bad for economic development while liberal ones promoted the creation of good institutions. This is because liberal colonisers preferred less complex societies where they sought possibilities for capitalist accumulation. The organisation of precolonial societies has thus also been considered relevant to understand the

civil law developed more as an instrument used by the sovereign for State building and controlling economic life.

type of institutions created in a territory (Acemoglu et al., 2002; Baker et al., 2008; Mahoney, 2010). Larger pre-colonial populations required a more complex organisation and are related to worse institutions than those created in scarcely populated areas.

Finally, the exploration and further colonisation of Latin America was driven by the search of mineral wealth and other commodities. The search of gold and silver carried the Spaniards far and wide across the Americas, contributing much to the amazing rapidity to which they explored and settled the continent: on the promise of gold Spaniards settled the Caribbean; finding little in the islands, they moved to the Isthmus, then to New Spain (Mexico), then to Peru. The presence of mineral resources was in fact the key determinant of the level of colonisation, at least in a first phase with Mexico, Peru and Bolivia (where large deposits of silver were found) as key centres of the colonial power. Following the increased demand of tropical crops in Europe, agriculture plantation for export became very profitable. In fact, it was in the context of plantation agriculture and sugar that the Brazilian colonial society was formed and sugar production emerges in the Caribbean as an alternative to the rapidly depleted mining industry.

Different natural resources (mining or plantation agriculture) required different ways of organisation and this is reflected in the labour organisation and land distribution. Mineral resources were generally found in areas with large native populations (such as Aztecs in Mexico and Incas in Peru), but in less populated areas American natives were transferred under different systems (as in Potosi-Bolivia). The discovery of gold or silver in a territory translated into several direct state interventions in favour of the mining sector. Due to the initial high investments required in tropical plantations Crops such as sugar, coffee and cocoa are most efficiently produced on large estates[2] and require a high initial investment and these productions were mainly supported by the import of African slaves.

Institutions put in place by colonisers in rich-endowed territories aimed to systematically extract the surplus from the (human and natural) resources

[2]Scale-neutral food crops such as wheat, rice and maize are historically produced on modest size plots (Kawagoe et al., 1985)

to enrich the coloniser power and prevented the labour force from partaking the benefits and possibilities from the economic wealth they produced (Engerman and Sokoloff, 1997, 2002). The wealth allocation that arises from the exploitation of these resources facilitates the creation of different endowed and motivated groups that could steer the mode of accumulation within the society as a whole. Landowning elites developed coercive labour market institutions such as serfdom, slavery, or permanent debt peonage (Domar, 1970), while trade restrictions and monopolistic structures favoured the creation of a wealthy elite of merchants. These merchants were often tied through investments to landowners and together they trapped capital, stifled investment and entrepreneurial activity, and thus blocked development.

Independently of which colonial factor is found relevant for explaining institutions, there are two implicit assumptions in these theories. The first is that distinctive colonial features shaped *early* institutions i.e. the institutions put in place after the independence of these territories. The second (more or less implicit) assumption is that current institutions still reflect early ones. This is the due to a specific characteristic of institutions: their *persistence* over time. Institutions tend to change slowly in response to social, political and economic individuals' behaviours and interactions.

Figures 1 to 4 show the relationship between the colonial features and two measures of early institutions in Latin America (democracy and political constraints - definitions in Appendix). Given the conclusion that *British did better*, Figure 1 compares institutions at the time of independence in British and non-British colonies and shows that, in average, British former colonies have better institutions than non-British ones.

Figure 2 shows the relationship between the two measures of institutions and the size of European settlements in 1800. Unlike Acemoglu, Johnson and Robinson argue, the relationship between European settlements and institutions seem to be negative. A large number of European settlers is not enough to secure good institutions in a colonised territory and other factors may affect the creation of these institutions.

Figure 1: Coloniser Identity

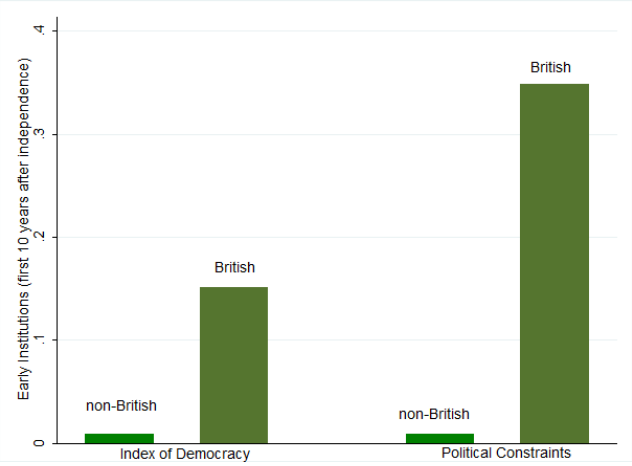
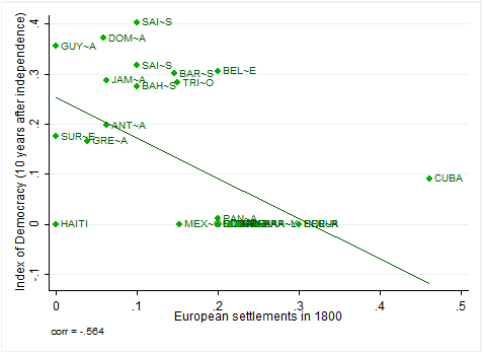


Figure 2: European Settlements

(a) Index of Democracy



(b) Political Constraints

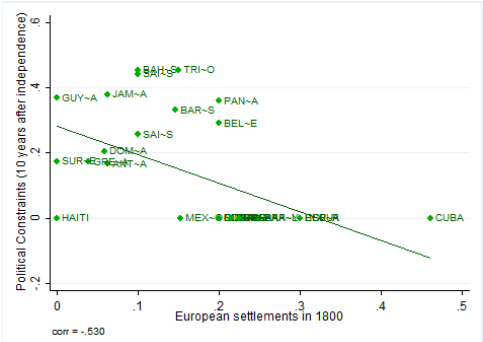
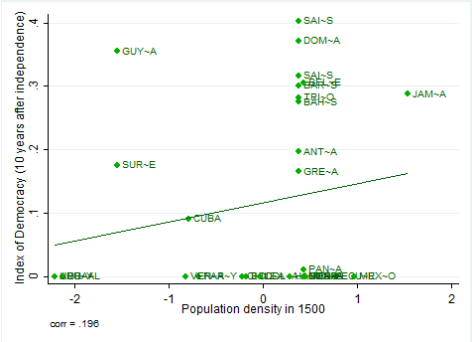


Figure 3 shows the relationship between the pre-colonial population density (in 1500) and early institutions. Unlike argued by Mahoney, we can observe that there is a (weak) positive correlation between institutions and native populations.

Figure 4 shows that in average, those Latin American and Caribbean countries that did not exploit mineral resources during the colonial times had better early institutions. and that those areas with more suitable lands for the production of sugar are correlated with worse early institutions.

Figure 3: Pre-colonial populations

(a) Index of Democracy



(b) Political Constraints

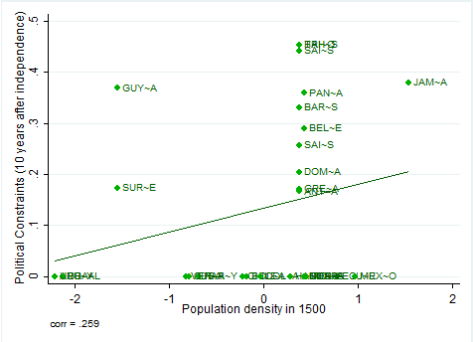
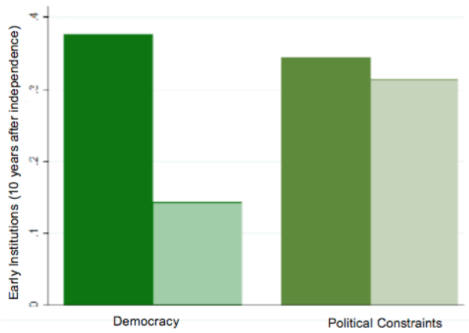


Figure 4: Colonial Natural Resources

(a) Minerals



(b) Sugar crops

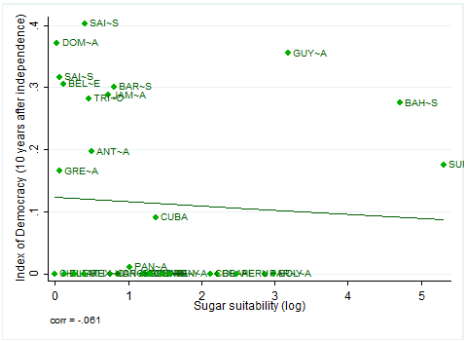
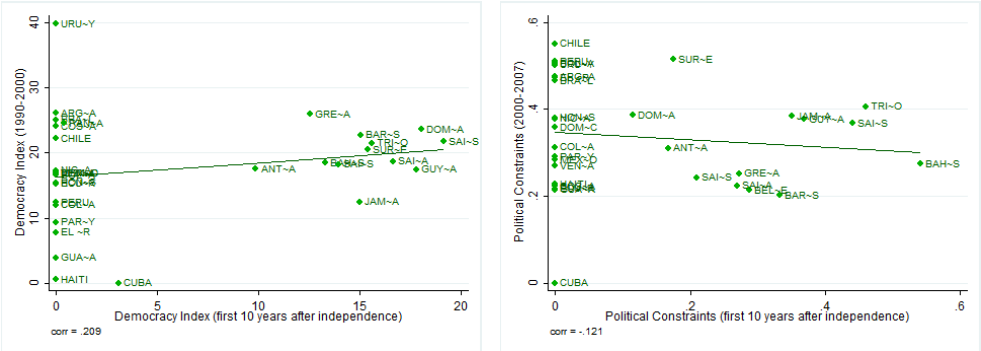


Figure 5: Current vs Early Institutions in Latin America

(a) Index of Democracy

(b) Political Constraints



Finally, Figure 5 plots the correlation between early and current Latin American institutions. We can observe that there is a weak correlation between early (at the time of independence) and current institutions in this region. This result should not surprise much: as shown in Table 1, most Latin American countries obtained independence in the first half of the 19th century. This is over a century earlier than the majority of the colonised world which acquired independence only during the decolonisation process that took place in the second half of the 20th century. The greater passage of time in Latin America has given, in effect, greater scope for institutional change, and although important, colonial factors cannot be considered as the only factors that shaped institutions. Post-colonial events may have also played a role in influencing the character of current institutions.

Table 1: Independence of Latin America and the Caribbean

Independence from	Period of Independence: Early (before1830)	Late (after 1960)	Overseas territories (no independent)
Spain/ Portugal	Argentina Bolivia Brazil Chile Colombia Costa Rica Cuba[a] Dominican Rep. Ecuador El Salvador Guatemala Honduras Mexico Nicaragua Panama Paraguay Peru Puerto Rico Uruguay Venezuela		
France	Haiti		French Guiana Guadeloupe Martinique St. Martin St. Barthlemy
Netherlands		Netherlands Antilles[b] Aruba Curacao Sint Maarten Suriname	Bonaire Sint Eustatius Saba
Britain		Antigua & Barbuda Bahamas Barbados Belize Dominica Grenada Guyana Jamaica St. Kitts and Nevis St. Vincent and the Gren. Trinidad and Tobago	Anguilla British Virgin Islands Cayman Islands Monserrat Turks and Caicos Is.

Notes: a. Cuba obtained its independence in 1902

b. Netherlands Antilles dissolved in 2010. After dissolution, Bonaire, Sint Eustatius and Saba became special municipalities of the Netherlands, while Curacao and Sint Maarten became constituent countries within the Kingdom of the Netherlands, along the lines of Aruba, which separated from the Netherlands Antilles in 1986.

2.1 Post-colonial Latin America: British Intervention

As previously explained, there is a large consensus that British did better; that is, former British colonies inherited better institutions compared to non-British ones[3]. Few considerations have to be done for the Latin American case. First, British were late-comers in the process of colonisation of American territories that were discovered, explored and colonised by Iberian crowns since late-15th century. This means that, unlike argued by Mahoney, British colonisers could not *choose* which territories to colonise, but they were left with the remnants of the Iberian ones. Second, Table 1 shows that most of the former British colonies acquired their independence much later compared to Iberian colonies which makes difficult to establish whether the positive effect of being a British colony is the result of a late independence rather than being a former British colony. In fact, another question that has arisen when attempting to assess the impact of colonial rule is whether a longer period of colonial rule was better or worse for economic development; nonetheless, for Latin America, it is difficult to disentangle the relationship between Britain colonies and late independence.

Furthermore, the British intervention in the region, did not stop at the colonial period. A broad literature in economic history explains how British intervention in the post-independence period played an key role in the economies of newly independent countries. After the independence, Latin American countries were freed from the obligation to sell their primary products through Iberian outlets which favoured an increase of trade with other European powers. The 1870s and 1880s saw a sharp increase in trade between Britain and Latin America, as the region became fully incorporated into the Atlantic economy (Platt, 1972).

Moreover, in the late 19th century, the centre of dynamism within the British economy moved from the manufacturing areas towards the commercial and financial interests, Latin American governments tapped the London bond markets and the flow of portfolio capital was followed by direct foreign in-

[3]This is also the implicit assumption in Mahoney's argument: given the more liberal background of the British system, they established institutions that promoted a more capitalist accumulation that is linked to higher development.

vestment (Victor Bulmer-Thomas, 1998). First, Latin American economies approached the international capital markets in order to finance independence wars and finance public debt. Following the high political instability during the post-independence period a wave of defaults ensued, with all bond issues in default by 1827 (Rippy, 1959). Most countries remained in default for decades, and new flows of capital started to circulate only during 1850s[4]. The macroeconomic and financial crisis produced a second wave of defaults that spread over the region in the 1870s. With the recovery of trade in the 1880s a new and bigger borrowing boom began. Capital inflows were mostly concentrated in favour of those countries with new booming trade sectors (della Paolera and Taylor, 2012). This once again ended with an economic crisis in 1890s (which affected mainly the greater economies of Brazil and Argentina).

Therefore, the British impact in Latin America went through two channels. First, Britain was one of the main destiny markets of Latin American goods in the nineteenth century. Second, the massive growth in British investment which occurred after the independence wars totally redefined the nature of Britain's relations with Latin America. On the eve of World War I, British investments in Argentina were the second largest group of investments made by British investors in a foreign country (US being the largest).

2.2 Other Factors that May Affect Institutions: Natural Resources and Inequality

There is of course more than colonial history. With almost two centuries since the region's independence, we need to consider other factors that may have shaped Latin American institutions. This paper will analyse two (perhaps the most common) distinctive features of Latin America: natural resources and levels of inequality.

Resource wealth has played a key role in the participation of Latin American economies on the international market before and after the colonisation.

[4]First, Brazil, Argentina, Paraguay, Uruguay, Chile accessed to new loans, followed by Costa Rica, Guatemala, Honduras, Bolivia, Peru.

In fact, Engerman and Sokoloff (1997, 2002) link colonial resource wealth to poor initial institutions, but Latin America still possesses large natural resource endowments and the export sector in many of the economies in the region is concentrated on natural resources. In the past decade, commodities accounted for 52 percent of the region's exports according to the World Bank. This is down from 86% in the 1970s, but over the same period the figure in East Asia and the Pacific fell from 94 to 30% (Sinnot et al., 2010).

A number of scholars argue that the exploitation and management of natural resources have negative effects on the institutions of the producer countries. These rents tend to be large, volatile, geographically concentrated, and controlled by the government. Together these features have important consequences on basic functions of the government. For instance, rentier effects are associated with a high proportion of government revenue originating from resource rents. The consequent fiscal volatility may create an unfortunate political dynamic that ratchets up expenditures in booms to levels that cannot be efficiently absorbed or sustained over time, with a stop-go pattern of public expenditure that reduces the quality of public investment and services and thus limits growth potential. In addition, much of a government's fiscal strength comes from its capacity to extract taxes from the population, a capacity that often takes decades to develop. A government that fails to develop this ability may also be unable to establish the type of bureaucracy that can provide effective public goods, and ameliorate social conflicts (Mahdavy, 1970; Beblawi, 1987; Ross, 2003; Fearon and Laitin, 2003).

Some scholars offer a more nuanced view of the role of natural resources on political regimes. Perhaps, the best attempt to address the possibility of conditional effects of resources on political regimes (rather than just considering one direct negative effect) is offered by Dunning (2008) who claims that natural resources may have both democratic and authoritarian effects and the key task is to understand variables or structural factors that tend to privilege one of these effects. The conflict over the redistribution of the resource rents does foster authoritarian desires, but this is only one way how resources may affect the political regime. In societies with substantial

inequality of assets (different from natural resources), a resource boom may help to mitigate the negative impact of inequality and therefore strengthens democracy.

There are also indirect effects on institutions through redistribution. A windfall of resource rents can generate conflicts over redistribution which may provide incentives for politicians and/or ruling elites to suppress democracy in order to take possession of these rents. This will thus affect the foundations of political regimes in favour of more authoritarian ones (Sachs and Warner, 1995; Ross, 2001; Boix, 2003; Jensen and Wantchekon, 2004).

In fact, inequality is another feature of these region's economies. Despite the decrease in inequality levels since 2000, the region is still the most unequal in the world. The richest one-tenth of the population in Latin America earns 50% of total income, while the poorest tenth earns only 2.5 percent. Using the Gini index, the inequality in the region measures 50 percent in the period 2000-09, this is higher than the rest of developed and developing areas of the world (World Bank, 2011).

There is a large consensus in literature on the relationship between inequality and institutions: countries with poor institutions tend to have large levels of inequality. Hoff and Stiglitz (2004) suggest that an equal distribution of income is a more fertile ground for good institutions; while Easterly (2001) and Keefer and Knack (2002) empirically show that social polarisation negatively affects institutional quality. Lipset (1959); Rubinson and Quinlan (1977); Muller (1988) and Boix (2003) argues that wealth distribution has a positive role on the democratisation of a country.

In particular, Boix shows that, in societies with high levels of asset specificity (e.g. with big landowners), the demand for redistribution increases and the potential level of transfers becomes larger (which would make the elites worse off), this fosters the authoritarian inclinations of the wealthy and decreases thus the probability of democratisation. Therefore, if the political power is in the hands of few, the small wealthy elite refuses the implementation of any change that redistributes economic power. Moreover, high inequality will also affect the survival of democracy. Democracies tend to survive only if the regime contributes to narrow the gap between rich and poor

(Friedman, 2002); in fact, the greater challenge for unequal countries is to sustain democracy once it is established (Houle, 2009).

While it is plausible that inequality plays a part in blocking the adoption of good institutions, the reverse holds as well, so that poor institutional quality results in higher degree of inequality. The analysis in this paper will suggest in fact that inequality and poor institutional quality may reinforce each other, indicating double feedback between the two.

Institutions, inequality and natural resources are all considered to influence economic development. However, none of these features on their own can explain the problems of Latin America. The social structures, the distribution of power and wealth, the role and strength of its elites, and the complex, often painful process of state-building, in combination with the legacy of colonial times and the economic and political difficulties that the newly independent states have in positioning themselves on the world stage, have all been decisive factors and all have something to do with the successes and failures of Latin American economies. Understanding how these variables interact may benefit the explanation on how institutions evolve in Latin America and the rest of the paper aims to contribute towards this explanation.

3 Empirical Analysis

This section offers an empirical analysis of how colonial features, post-colonial British intervention features along with inequality levels and resource endowments interact and affect the creation and further development of institutions in Latin America. Institutions and inequality are considered to be simultaneously determined; we can expect that those countries with better institutions would also have lower levels of inequality, and that at the same time a better distribution of resources will be translated into better division of power and therefore better political institutions.

3.1 Data

Data definitions and sources are provided in the appendix. The dependent variables are institutions and distribution of resources. *Institutions* is measured using variables for Democracy, Autocracy and Constraints on the Executive Power from the Polity IV Project. *Distribution* is measured by the percentage of family farms from Vanhanen (2003) defined as *the area of family farms as a percentage of the total area of holdings – a family farm employs no more than four people and the family owns and cultivates the land.* More family farms thus represent a better distribution of these resources and therefore higher values of this variable are related to lower inequality[5].

Four variables capture the colonial inheritance of these countries. First, following the work of Acemoglu et al. (2001), *European settlements* is measured by the percentage of Europeans in colonised territories in 1800[6]. Second, there is a measure of the population density in 1500 as a proxy of pre-colonial native population. Finally, two variables are used to analyse the effect of *colonial resource endowment.* One captures those countries endowed with gold and silver mines by using a dummy variable that assumes the value of 1 if the country's main economic activity at the time of the colonial period was based on the exploitation of either gold or silver and 0 otherwise. The second variable considers those countries that were specialised in the production of cash-crops. For this purpose a measure of the land suitability for the production of sugar is used[7] (from the FAO database).

The impact of British intervention in Latin America after the independence is measured by the level of trade of these countries with Britain, and the

[5]Several measures of inequality have been proposed, however the share of family farms is the only measure of inequality that is consistently available through time for a large sample of the countries considered and in the period analysed. Moreover, given the key role that land distribution have had since colonial times in Latin America, this is the most adequate measure to study how inequality affects institutions in the region.

[6]Acemoglu, Johnson and Robinson (2001) consider European settlements in 1900, however Latin American countries acquired independence in 1820s which makes European settlements in 1800 a better measure for this region.

[7]sugar was one of the main cash-crops of interest for European markets and the production of sugar dictates the distribution of land and labour organisation in most of the producer territories.

British investments at the beginning of the century (Paish, 1909). *Trade with Britain* is given by the average exports of Latin American economies to Britain weighted for the total exports for the period 1898-1906. This variable is constructed using data from the Annual Statement of Trade of the United Kingdom with Foreign Countries and British Possessions for various years (Statistical Office, 1906). *British investments in Latin America* considers the average of these investments in the period 1905-1911 (data from Paish (1909)).

Several variables have been used in literature to measure natural resources and in particular to investigate whether resource-rich countries are actually *cursed*. Based on the work of Sachs and Warner (1995) commonly used variables are the *ratio of resource exports to GDP* and the *ratio of resource exports to total exports*. Brunnschweiler and Bulte (2008); Ross (2006) and Dunning (2008) argue that these variables measure *dependence* rather than *abundance* therefore they are not independent of economic policies and institutions (i.e. they are endogenous) and prefer a measure of *oil rents per capita* (based on the work of Hamilton and Clemens (1999)). This measure provides an estimate of the value of a wide range of natural resources, net of production costs and a return to capital, giving an approximation of the size of the rents available for public spending. Although this variable provides a better measure of resource abundance, it is not without problems. Extraction costs are based on estimates for a single observation in 1990s, and costs for other years are obtained using a GDP deflator, when no data on extraction costs are available for a country, the extraction costs for a neighbour country are used (Ross, 2006).

For this analysis I use a measure that captures when a resource is discovered. This is a binary variable for the discoveries of oil and natural gas. It assumes the value of 1 if there has been a discovery in the 5-year period considered, 0 otherwise (constructed from the data provided by Lujala et al. (2007) on oil discoveries on- and off-shore). The advantages of this variable are two-fold, (i) there is a larger number of observations (across country and time), and (ii) it is not subject to the common endogeneity issues. In addition, the effects of natural resources on institutions may start well before these resources start producing rents. The mere discovery of a mineral resource

might be a source of rent-seeking behaviour from the governing elites in order to guarantee an early appropriation of future rents (e.g. guaranteeing exploration and extraction rights under the promises of future economic favours).

3.2 Results

The empirical analysis estimates the following model:

$$Inst_{i,t} = \alpha_1 + \alpha_2 Dist_{i,t} + \alpha_3 \mathbf{BR}_i + \alpha_4 Nat\ Res_{i,t} + \alpha_5 \mathbf{COL}_i + \epsilon_{it} \quad (1)$$

$$Dist_{i,t} = \beta_1 + \beta_2 Inst_{i,t} + \beta_3 \mathbf{BR}_i + \beta_4 Nat\ Res_{i,t} + \beta_5 \mathbf{COL}_i + \upsilon_{it} \quad (2)$$

Equation (1) considers Distribution ($Dist$) as independent variable for explaining institutions ($Inst$) while Equation (2) uses institutions as explanatory variable for asset distribution. In addition, both regressions use variables that capture the post-colonial British influence through trade and investments (**BR**), the natural resources ($Nat\ Res$) and the different colonial factors (**COL**).

Table 2 shows the results for the analysis of the relationship between institutions and inequality. In Panel A, a General Least Squares (GLS) estimation is used to explain institutions (democracy, autocracy and constraints on the executive) as function of land redistribution (*family farms*). The coefficients are all statistically significant and with the expected sign. In particular, higher democracy and constraints on the executive are positively related to a higher land redistribution, while autocracy has a negative sign. In Panel B land redistribution is considered as function of institutions. The coefficients confirm the previous findings. This suggests a bilateral causality between institutions and inequality.

In order to deal with the endogeneity problems caused by the relationship between inequality and institutions a Hausman-Taylor estimator (a transformed random effect model with instrument variables) is used. The Hausman-Taylor estimator deals with endogeneity issues while distinguishes between time-varying and time-invariant regressors[8].

[8] Another approach could be to consider the lags of the endogenous variables into

Table 2: Institutions and Inequality

Panel A - Institutions as dependent variable			
Explanatory Variable	Democracy	Autocracy	Contraints on the Executive
Family Farms	.683***	-.598***	.805***
	(.131)	(.123)	(.121)
constant	.190***	.401***	.249***
	(.026)	(.025)	(.026)
n	20	20	20
T	20	20	20
Wald χ^2	27.34***	23.79***	43.88***
Panel B - Family Farms as dependent variable			
Explanatory Variables	(a)	(b)	(c)
Democracy	.098***		
	(.011)		
Autocracy		-.086***	
		(.014)	
Contraints on the Executive			.110***
			(.012)
constant	.138***	.200***	.126***
	(.005)	(.006)	(.006)
n	20	20	20
T	20	20	20
Wald χ^2	73.53***	36.74***	.87.16***
notes:	Robust standard errors in parentheses ***, **; significance at 1 and 5% respectively		

Table 3 shows the results of the Hausman-Taylor estimator for regression (1) in which institutions is the dependent variable. In all the specifications, *family farms* is statistically significant and has a positive sign. That is, a better distribution of land has a positive effect on institutions. The *oil and gas discoveries* variable has a statistically significant negative effect on institutions which provides support to the literature on 'resource curse' i.e. the exploitation of natural resources in Latin America harms development (through their effect on institutions).

The coefficient for *trade with Britain* is positive and statistically significant. This suggests that those countries with more commercial tights with Britain have better institutions. However, the coefficient for *British investments* is negative. While these results may seem contradictory, we can expect that trade brings wealth to the economy through the support of productive activities that promote job creation and improve living standards for workers. On the other hand, British capital could be intercepted by political elites and used to support their economic dominance. In addition, none of the colonial factors seem to have a statistically significant effect on institutions. This result rejects most of the common theories of colonial origins of institutions for Latin America.

Finally, institutions are themselves endogenous and tend to improve with income, so that richer countries tend to have/afford better institutions. Therefore, columns (c), (c') and (c") of Table 3 include a variable for the initial level of GDP. This is statistically significant and with the expected sign, suggesting that there is statistical evidence that richer countries can afford better institutions. However, the signs and significance of the other variables remain unchanged so the main conclusions still hold.

Equations (1) and (2). Nonetheless, the validity of the lag variables as instruments is questionable due to the high persistence of these institutions and inequality. In particular, we need to assume that $E[\epsilon_{it}|Ineq_{is}] = 0$ and $E[\upsilon_{it}|Inst_{is}] = 0$ for all $t > s$ (but not otherwise) in order for second- and higher-order lags of the endogenous variables to be good instruments in the estimation of our model. Nonetheless, if our endogenous variables display persistence over time, their lagged levels will be poor instruments. A second approach could be to find strictly exogenous instruments. Our colonial variables could be considered as good instruments because they are not subject to reverse causality, nonetheless, they suffer from the drawback that they do not vary over time, so these cannot be used in a panel framework.

Table 3: Hausman-Taylor Estimator for Institutions

Explanatory Variables	Dependent Variables: Institutions								
	Democracy			Autocracy			Constraints on the Exec.		
	(a)	(b)	(c)	(a')	(b')	(c')	(a")	(b")	(c")
Time variant Endogenous									
Family Farms	1.32***	1.31***	.483**	-.750***	-.745***	-.333*	1.35***	1.34***	.849***
	(.164)	(.165)	(.221)	(.165)	(.166)	(.230)	(.168)	(.168)	(.239)
(initial) GDP per capita			.070***			-.045***			.049***
			(.011)			(.012)			(.012)
Time variant Exogenous									
Oil and gas discoveries	-.087**	-.089**	-.051*	.099**	.099**	.091**	-.085**	-.087**	-.069*
	(.043)	(.043)	(.044)	(.042)	(.043)	(.045)	(.043)	(.044)	(.047)
Time invariant Exogenous									
(log) Trade with Britain late 19th	.040**	.040**	.051**	-.032**	-.032**	-.046***	.022	.025	.036*
	(.020)	(.020)	(.023)	(.014)	(.014)	(.017)	(.018)	(.017)	(.021)
(log) British Invest. early 20th	-.110***	-.107***	-.070**	.059***	.059***	.035*	-.097***	-.095***	-.069**
	(.282)	(.028)	(.032)	(.019)	(.019)	(.023)	(.026)	(.024)	(.029)
Mineral colonial centre	.011	.021	-.089	-.045	-.046	-.006	.055	.036	.004
	(.076)	(.079)	(.086)	(.052)	(.056)	(.064)	(.069)	(.068)	(.078)
Sugar suitability	.103**	.107**	.108**	-.049	-.049	-.053	.037	.065	.051
	(.044)	(.048)	(.049)	(.030)	(.034)	(.036)	(.040)	(.041)	(.044)
Early European settlements		-.355			.010			-.790*	
		(.532)			(.374)			(.456)	
native population		-.026			.002			-.001	
		(.035)			(.025)			(.030)	
constant	.040	.002	-.047	.531***	.528***	.548***	.058	.230*	.046
	(.089)	(.151)	(.109)	(.073)	(.025)	(.086)	(.090)	(.133)	(.102)
n	320	320	276	320	320	276	320	320	276
T	16	16	16	16	16	16	16	16	16
Wald χ^2	93.08***	95.06***	122.88***	47.99***	47.92***	63.52***	93.01***	102.07***	100.23***

notes: Robust standard errors in parentheses
***, **, *; significance at 1, 5 and 10 percent respectively

Table 4: Hausman-Taylor Estimator for Land-Redistribution

Explanatory Variables	Dependent Variable: Family Farms (a)	(b)	(c)	(a')	(b')	(c')	(a")	(b")	(c")
Time variant Endogenous									
Democracy	.135***	.134***	.037**						
	(.017)	(.017)	(.017)						
Autocracy				-.086**	-.086**	-.023			
				(.019)	(.019)	(.017)			
Constraints on the						.	133***	.132***	.054***
Executive							(.016)	(.016)	(.016)
(initial) GDP			.029***			.031***			.028***
per capita			(.003)			(.003)			(.003)
Time variant Exogenous									
Oil and gas	-.021	-.021	-.010	-.026*	-.025*	-.010	-.019	-.018	-.008
discoveries	(.014)	(.014)	(.012)	(.015)	(.015)	(.013)	(.014)	(.014)	(.012)
Time invariant Exogenous									
(log) Trade with	.004	.005	.011	-.008	-.009	.012	.006	.007	.010
Britain late 19th	(.007)	(.006)	(.011)	(.007)	(.006)	(.011)	(.007)	(.006)	(.011)
(log) British Invest.	.021**	.026*	.020**	.012	.011	.025	.019**	.018**	.027*
early 20th	(.010)	(.009)	(.015)	(.010)	(.009)	(.016)	(.009)	(.009)	(.015)
Mineral	-.037	-.052**	-.073 **	-.044*	-.060**	-.077*	-.043*	-.054**	-.074*
colonial centre	(.076)	(.026)	(.041)	(.025)	(.025)	(.042)	(.025)	(.025)	(.040)
Sugar	-.037**	-.027*	-0.14	-.031**	-.018	-.012	-.028**	-.022**	-.013
suitability	(.015)	(.016)	(.024)	(.015)	(.015)	(.024)	(.014)	(.015)	(.023)
Early European		-.139			-.211			-.082	
settlements		(.173)			(.167)			(.170)	
native population		-.017			.015			.013	
		(.011)			(.011)			(.011)	
constant	.224***	.256***	.179***	.290***	.337***	.191***	.206***	.256***	.169***
	(.030)	(.047)	(.048)	(.030)	(.045)	(.050)	(.029)	(.047)	(.047)
n	320	320	276	320	320	276	320	320	276
T	16	16	16	16	16	16	16	16	16
Wald χ^2	86.64***	92.10***	185.97***	42.57***	49.60***	181.31***	89.03***	93.97***	199.01***

notes: Robust standard errors in parentheses
***, **, *; significance at 1, 5 and 10 percent respectively

The results for redistribution (Equation 2) are shown in Table 4. Institutions help to explain redistribution: countries with higher levels of democracy and constraint on the executive and lowers level of autocracy have more family farms i.e. a more equal distribution of land. The discovery of oil has a statistically significant effect only if we consider autocracy as institutional variable (regressions (a'), (b'), and (c')). A possible explanation is that the resource shock affects redistribution only under autocratic regimes. Under more democratic rulers, the effects of a resource on inequality is not significant.

The coefficient of *Trade with Britain* is not statistically significant, but British investments have a positive and statistically significant effect. When democracy or constraints on the executive are used as institutional variables, British investments increase the percentage of family farms (i.e. inequality decreases) showing a positive *indirect effect of British investments on institutions* through inequality. This contrasts with the direct negative effect on institutions observed in Table 3 and the net effect of British investments on institutions will depend on which of these two effects prevails.

While colonial factors seem not to matter for institutions, colonial resource endowments have affected redistribution. Colonial mineral centres and plantation based countries have less family farms (i.e. higher land inequality) than those territories with no resources. This result supports Engerman and Sokoloff's hypothesis that colonial past matters for initial inequality. These results hold when controlling for colonial European settlements and native populations (columns (b), (b') and (b")) which are not statistically significant.

Two are the main contributions of this analysis. One is that, given the early independence of most Latin American countries, institutions are not just a colonial outcome. Second, The effect of British intervention after independence goes through different channels. While trade with Britain has a positive direct effect on institutions, the direct effect of British investments is negative. This may be explained by the political instability caused by the series of defaults that followed the entry of these capitals in Latin American financial markets. These investments have nonetheless an indirect positive

effect through redistribution.

To understand which effect dominates we may need to look at the country's individual characteristics. It is likely that in those countries that invested these capitals in more efficient projects saw an increase of their employment opportunities which in turn reduces inequality. However, in strongly autocratic regimes, this indirect effect may be reduced to a minimum. According to Miller (1993), external loans and direct investments in Latin America contributed to put off taxation reforms and undermined local political institutions as more politicians became beholden to their links with the British companies. This affected the adoption of redistribution policies, and therefore the negative direct effect of British investments on institutions dominated.

To better understand how the different variables analysed interact and to establish how post-colonial British intervention may have affected these countries, the next section offers some historical narratives for four Latin American countries. The experiences of Costa Rica and Uruguay which are considered consolidated democracies in the region, will be contrasted with the realities of Peru and Bolivia which history is marked by political instability with continuous break-downs of democracy.

4 Historical Evidence: Some Case Studies

Costa Rica and Uruguay good development experiences contrast with the poor economic, social and political scenarios observed in Bolivia and Peru. The history of these four countries helps to illustrate the specific mechanisms through which the variables considered in the empirical analysis work and how their interactions affected these countries' institutions.

4.1 Costa Rica

Costa Rica is one of the most stable, prosperous, and progressive nations in Latin America. Nonetheless, it was a poor, isolated, backwater territory

during colonial experience. Costa Rica had no gold or silver and few opportunities to promote sugar plantations which made this territory of little attraction to colonial settlement (Monge Alfaro, 1974; Quirós Vargas, 1990). According to Quirós Vargas (1990), one of the factors behind Costa Rica's colonial poverty was the lack of a significant indigenous population available for forced labour. For this reason Costa Rican settlers were forced to work their own land and this prevented the establishment of large *latifundios*. So the lack of natural and human resources has been considered to constitute the basis for a successful *rural democracy* in Costa Rica (Thorning, 1945). At the time of independence, this country had in fact the highest level of land redistribution compared to the rest of the region (based on data of land distribution from Vanhanen, 2003).

After its independence in 1821, and with the introduction of coffee, there were clear attempts to stimulate export agriculture. By late 1830s coffee exports began to reach important levels and the main destiny was Great Britain. In fact, British merchants played a key role in financing the coffee expansion[9] (Gudmundson, 1986). This specialisation and export-dependence on coffee was accompanied by high political instability; the 1860s were marred by power struggles among the coffee elite. As the Costa Rican economy moved to monoculture and declining returns[10], the coffee-based peasantry and the growing urban middle-class increasingly protested for a greater wealth distribution and taxation of the coffee-oligarchy. This culminated in the 1948's Revolution which is seen as the beginning of the new process of democratisation in Costa Rica[11]. Social and economic progress since 1948 helped the return of the country to stability, and though post-civil war politics reflected the play of old loyalties and antagonisms, elections have been free and fair since then.

[9] As matter of fact, the first bank founded in Costa Rica was the *Banco Anglo-Costarricense* in 1862.

[10] The declining returns on coffee production were due to the ageing of the groves, soil exhaustion, and the infrequent use of fertilisers (as explained in Hall [1976] cited in Gudmundson (1986, p. 5)).

[11] See Gudmundson (1984) for a review of the literature on the Costa Rican revolution and civil war in 1948.

4.2 Uruguay

As Costa Rica, the colonial history of Uruguay is also characterised by no gold, silver, and sugar plantations, making this territory unattractive for colonisation (especially in early times). In fact, the current Uruguayan territories were little inhabited during the colonial times, at least until the establishment of *Colonia del Sacramento* by the Portuguese in 1680 (Bértola, 2003). Unlike Costa Rica, Uruguay had a quite unstable transition to independence. Uruguay was on the border between the Spanish and Portuguese empires, and was the subject of several disputes between the two crowns; this was decisive for the creation, with strong British involvement, of an independent state in 1828-1830 (Bértola, 2003).

The mid-19th century was characterised by the growth of the Uruguayan agricultural sector based on the production of meat and livestock production in general. The main destiny of Uruguayan production was Britain which attracted British investments in the country (Winn, 1976). Despite episodes of political unrest and economic stagnation in 1930s for most of the past 180 years, Uruguay has been a model democracy with one of the lowest rates of income inequality in the region[12].

4.3 Bolivia

The history of Bolivia contrasts with the development experiences of Costa Rica and Uruguay. Bolivia is one of the less developed and more unequal countries in the region (and in the world). Despite recent improvements in the Gini index (from 60.1 in 2002 to 56.3 in 2008), the differences in income still remains: in 2007, the 10% of the population earned 45% of the population's total income, while the poorest earned merely 0.5% (World Bank, 2011). It can hardly be argued that the origins of Bolivian underdevelopment and inequality are found in colonial times. After the discovery of large silver deposits in Potosí in 1545, Bolivia became a key mining centre and an important source of revenue for the Spanish Empire and virtually every

[12]However, Uruguay did not escape the wave of military dictatorships that swept through South America in the 1970s.

aspect of Bolivia's economic, political but also cultural and social development responded to the mining monocultures of silver first and then tin. The labour force was organised around the exploitation of minerals and based on forced labour (Cunningham and Jacobsen, 2003).

After independence, the white Creole elite, took control of the State, and although servitude and slavery were abolished, indigenous people were prevented from participating in the political life through the introduction of the 'qualified vote' i.e. only alphabetised people with a minimum income could vote at the elections and new forms of forced labour were introduced[13]. Universal vote was introduced only after the Bolivian National Revolution of 1952. However, this was of little help for the redistribution of power which was in the hands of the wealthy elite (Albro, 2005). One of the main limitations for political inclusion was the skewed distribution of land that strongly favours small elite groups. The numerous land reforms introduced after 1952 implemented only temporary and minor changes and had little effect on wealth distribution (Medina, 2010). In fact, in the 1980s, over 66% of land was still controlled by 0.22% of landowners with an average of more than 16,000 hectares per owner (Weisbrot and Sandoval, 2008).

The last decades have been characterised by political instability and a continuos economic fluctuations arising from the unstable commodity market. A succession of militaristic dictators repressed labour-based organisations and continued the social discrimination of the indigenous populations (Madrid, 2012). In current times, Bolivia is still a mining country with the second largest natural gas reserve in South America[14]. The economy's reliance on mining has reinforced regional tensions and determined political power in Bolivia (Morales, 2010). Of all the oil and gas significant producers in the world, Bolivia is perhaps the only country where sub-national governments share these resources revenues according to where they happen to be underground. This creates further divisions and limits redistribution (Weisbrot and Sandoval, 2008).

[13]The most common was *ponguaje*, through which indigenous population had to provide cheap or unpaid labour in exchange for access to subsistence parcels of land (Bueno, 2011)

[14]Natural gas and oil and other minerals replaced tin in its role on Bolivian economy, after the collapse of the world tin market in 1980s

4.4 Peru

Peru was also a mining centre during the colonial period. Peru was in fact described as the "Spain's great treasure house in South America" (Pike, 1967). Labour was organised following the needs of the mining sector under different forms of forced labour creating the same social inequalities between indigenous and colonisers described in the Bolivian case. Colonisers monopolised control over land and gradually the land tenure system became polarised between large haciendas and subsistence-based indigenous communities (Hunefeldt, 2004). After independence, the elite class that inherited the power from colonisers aimed to preserve and enhance their privileged economic status[15]. The new-independent country experienced severe political instability lasting until the advent of the guano boom in mid-19th century[16].

The Guano Era in Peru represents a period of economic prosperity. Demand for guano increased with the industrial revolution in the United Kingdom first and the increase of demand in the rest of Europe and US afterwards. Although the revenues of guano were used to accomplish some social projects such as the end of slavery and the Indian tribute (1854), Peru failed to become a modern state. Much of the guano wealth went into the support of state bureaucracy and some infrastructure projects that were never completed (Hunefeldt, 2004). The guano revenues were distributed between British and Peruvian bondholders who held long-standing claims on the government. According to Quiroz (1987) two-thirds of the total bond value was held by only 126 people, mostly land-owners and state bureaucrats. In addition, guano financial windfalls made it easy to get loans on the international financial markets which eventually led to a deep financial crisis[17].

[15] At the time of independence and for several decades after, Peru had a racially defined occupational structure. Artisans were black, peasants were Indians, smaller merchants were mestizos, and elites were white (Hunefeldt, 2004).

[16] Guano is created by seabird droppings deposited for thousands of years and sedimented n coastal islands. The benefits of guano as fertilising were known by pre-Columbian societies, by it was Alexander von Humboldt who alerted Europeans to the value of guano.

[17] The Peruvian debt crisis had his origins in the independence wars. In 1822 and 1824 two loans were contracted in London, and by 1848 the principal and interest had increased Peru's debts of three times the initial loan. In addition, the government acknowledged

The discovery of synthetic fertilisers and the collapse of the guano price in the international market were devastating to the Peruvian economy. The discovery of nitrate mines could have replaced the role of guano in Peruvian economy, but the conflict between Chile and Peru for the control of the mines ended in the War of the Pacific where Peru lost its nitrate-rich provinces (Greenhill and Miller, 1973).

After guano and nitrate, Peru experienced several booms in its primary sector. Rubber, coffee, sugar cane, cotton, rice and other natural resources were crucial for Peruvian development. Nonetheless, these resources were in the hands of a Peru's oligarchy (estimated as 40 to 200 families) that retained much influence until late 1960s. In 1980s some attempts to address the problems of rural communities were made, and although the levels of inequality still remain very high, the political participation of the marginalised communities has increased, fostering a greater redistribution and the new wave of democracy in the country.

The experiences of these countries contribute to the previous explanation on how the different variables interact. We can see how the effect of British indirect rule in the region depends on the levels of inequality and quality of institutions inherited from the colonial times which in turn depend on the colonial resource endowment. Due to the lack of gold, silver and sugar plantations in Costa Rica and Uruguay, these were not considered relevant for the colonial activities of the European powers, so these countries did not inherited a strong colonial economic elite. When British investments arrived into these markets, these went to finance agricultural production which fosters the development of the peasantry and middle class in these countries. These investments did have a negative impact on these countries institutions (shown by a series of revolts in 1948 in Costa Rica and in 1930s in Uruguay), however, the indirect effect (through the increase in redistribution) dominate.

internal debt to those citizens who had supplied funds for the patriot armies during the independence wars in order to foster the development of an entrepreneurial middle class. During the guano boom, British bondholders pressured the Peruvian government for repayment and in 1849 they obtained new bonds to be issued backed by future sales of guano. However, new loans were used to repay old loans and accumulated interest.

In Peru and Bolivia, the negative effect on institutions was dominant. Both these countries inherited a strong colonial elites that controlled the wealth of this region and occupied main charges in the governments. Labour was mainly organised under force labour creating huge social inequalities. The revenues from mining (in Bolivia) and guano (in Peru) were managed by these elites which also took control over the British capital. The limited participation of the working class to the political activities makes the indirect effect of British investments being only marginal.

5 Concluding Remarks

The discovery and colonisation of new territories has been one of the most salient events in the World history. This has brought several scholars to argue that colonial past exerted a strong influence on the economic and political institutions created in former colonies. Two are the hypotheses of these studies, (i) various colonial aspects affect the creation of early institutions, (ii) given that institutions tend to be highly persistent, current institutions still reflect early ones. This paper shows that Latin American institutions cannot be explained just by their colonial past due to the region's early decolonisation process that leaves scope for other factors and post-colonial events to change the character of these institutions so that current institutions do not just reflect early ones. Two additional distinctive characteristics of the region are considered: inequality and natural resource dependence.

Latin America is the most unequal region in the world. High levels of inequality and poor institutions are correlated and the relationship tends to be highly persistent due to the feedback mechanisms put in place. As explained by Boix (2003), in societies with high level of inequality and land-concentration, the cost of taxation and redistribution becomes high enough for the elites to prefer an authoritarian regime which in turn will put in place policies that allow these elites to keep their economic and political benefits reinforcing the current levels of inequality and asset-concentration. As matter of fact, we can observe a long-standing political discrimination

of indigenous populations in Peru and Bolivia after independence. The authoritarian regimes in these countries delayed the required policies to abolish forced labour and allowed the political participation of the poorer parts of the society. However, whereas Boix (2003) explains how inequality and institutions interact, he fails to explain the impact of the colonial (and non-colonial) past on current institutions. The understanding of the origins of institutions and inequality can be used to explain the observed persistence of the relationship between institutions and inequality.

The analysis of the colonial factors shows that colonial resource endowment has a negative effect on the redistribution of land in these countries having thus a negative (indirect) effect on institutions. Latin America territories with larger European settlements and smaller pre-colonial populations do not seem to have better institutions as discussed by Acemoglu et al. (2001); Easterly and Levine (2012) and Acemoglu et al. (2002); Baker et al. (2008); Mahoney (2010) respectively.

This paper also goes more in depth analysing how coloniser's identity affects on institutions. Authors tend to conclude that *British did better*, but they fail to elucidate the mechanisms through which British left behind better institutions in colonised territories. This paper explains the channels through which British intervention affected institutions. While most Latin American countries were Iberian colonies, Britain showed a great interest on these territories after they acquired independence. Latin American countries become an important provider of natural resources for the booming British economy and a potential market for British exports. Moreover with the development of British financial sector, Latin American governments tapped the London market.

The results show that while trade with Britain played a positive role in improving institutions, the channels through which investment affected institutions are more complex. There is a negative direct effect on institutions that can be explained by the political instability created once the governments in these countries could not make front to British investors and decided to default creating economic and financial instability. However, in those countries where these investments were efficiently utilised to finance productive

sectors, we can observe a positive indirect effect that goes through the improvement in redistribution. Countries with a better initial redistribution of resources may have used these investments in productive enterprises that, in the long-run, benefited the economic development and the institutional setting of these economies (see for instance the improvement of transport infrastructure in Costa Rica during the coffee era).

In addition, the dependence of some of these economies on natural resources even after the independence promoted further authoritarianism in order to gain control over these resources. Discoveries of natural resources have in fact a negative effect on institutions. Dunning's claim (2008) that natural resources may have both authoritarian and democratic effects based on the redistribution of resources is thus not entirely consistent with the Latin American experience. There is no evidence that in societies with substantial inequality of assets (not related to the natural resource sector) a resource boom helps to mitigate the negative impact of inequality on institutions through an increase in redistribution policies. On the contrary, there is a tendency for these resources to promote authoritarian regimes – the presence of resource rents increases the payoff of controlling power in order to control the distribution of rents. Even in those countries with a more egalitarian wealth redistribution, these resources generated some conflict over power (see for example the Costa Rican political instability marred by power struggles among the coffee elite in 1860s).

While the colonial period contributed to the struggles over power control and redistribution of income and wealth in Latin America, post-independence discoveries of natural resources provided the elites with further incentives to maintain authoritarian regimes in order to control the rents generated by these resources. Future research on what facilitates the redistribution of power within a country is needed. After independence, the several revolutions and democratisation processes that took place in Latin America allowed these countries to reach important milestones: in the 1980s-1990s democracy and universal suffrage became a reality in the region, however sound political practices have not always kept pace. This may be due to the persistence of unequal distribution of power in some countries that, even during periods of transition (that may translate into a temporary loss of

power), allows elites to find alternative ways to influence the distribution of resources in order to maintain their privileges. How to contrast the elite behaviour would help us to provide with clearer policy advices to these countries.

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A Appendix

A.1 Data Sources and Variable Definitions

This appendix offers definitions and sources for the data used for the empirical analysis. Table 5 provides the descriptive statistics of the variables used.

The variables for institutions, *democracy*, *autocracy* and *constraints on the executive power*, are from Marshall and Gurr (2013). This data set consists of six component measures that record key qualities of executive recruitment, constraints on executive authority, and political competition. It covers all major, independent states, currently 167 countries over the period 1800-2012.

As measure of inequality, I use the *percentage of family farms* from the "Vanhanen Index of Power Resources" (Vanhanen, 2003). This covers the period 1850-2000. Family farms are distinguished from large farms cultivated mainly by hired workers. However, family farms are not dependent on the actual size of the farm which varies with the type of product and the agricultural technology being used.

The percentage of family farms capture the degree of concentration and therefore inequality in the ownership of land. The variable for the discovery of oil and natural gas is based on the dataset PETRODATA (Lujala et al., 2007). This dataset includes 890 onshore and 383 offshore locations with geographic coordinates and information on the first oil or gas discovery and production year. Based on this dataset, I created the variable for the discovery of natural resources.

The British influence in Latin America is considered using measures of British investments in Latin America in the period 1905-1911 and trade with Britain in the period 1898-1906. Investments are from Paish (1909). These are expressed in British Sterling. These investments were mainly based on government loans. Considering the differences in population and dimensions among countries, I have divided this variable by the average government revenue in the same period. The data for the government revenue is from the "Cross-NationalTime-Series DataArchive" (CNTS) (Banks and Wilson, 2013). This data is expressed in US dollars, therefore, British investments are converted in US dollars using US$4.85=GBP£1 as exchange rate (during late 19th and early 20th centuries, many countries adopted the

gold standard, as consequence, conversion rates between different currencies was fixed and determined by the respective gold standard).

Trade is from the "Annual Statement of the Trade of the United Kingdom with Foreign Countries and British Possessions". This is given by a country's exports to Britain in a given year divided by the total exports of that country. Total exports are also from CNTS (Banks and Wilson, 2013). Trade is also expressed in US dollars following the same procedure than before. The CNTS contains data for over 200 states from 1815 onwards (excluding the periods 1974-1918 and 1940-1945) for a number of social indicators.

Table 6 summarises variables definitions and sources.

Table 5: Descriptive Statistics

Variable		Mean	Std. Dev.	Min	Max	Observations
Democracy	overall	0.332246	0.328692	0	1	N = 400
	between		0.197039	0.115	1	n = 20
	within		0.266577	-0.20275	1.017246	T = 20
Autocracy	overall	0.334746	0.296249	0	1	N = 400
	between		0.13727	0	0.534	n = 20
	within		0.264231	-0.19925	0.930663	T = 20
Constraints	overall	0.408285	0.324914	0	1	N = 400
on the Executive	between		0.184884	0.141667	1	n = 20
	within		0.270213	-0.15672	1.149951	T = 20
Family	overall	0.17665	0.113929	0.01	0.62	N = 400
Farms	between		0.071893	0.062	0.34	n = 20
	within		0.089762	-0.07435	0.46965	T = 20
Oil and gas	overall	0.1375	0.344806	0	1	N = 400
discoveries	between		0.169267	0	0.45	n = 20
	within		0.302662	-0.3125	1.0375	T = 20
Trade with	overall	0.1573601	.1547945	.0000836	.645317	N = 400
Britain	between		.1586171	.0000836	.645317	n = 20
	within		0	.1573601	.1573601	T = 20
British	overall	0.356444	0.24639	0.009175	0.871568	N = 320
Investments in	between		0.254073	0.009175	0.871568	n = 16
Latin America	within		0	0.356444	0.356444	T = 20
European settlements in 1800	overall	0.157923	0.102771	0	0.4612	N = 49
Native population in 1500	overall	1.386844	0.995758	0	5.64	N = 48
Colonial mineral centre	overall	0.183674	0.39123	0	1	N = 49
Sugar suitability	overall	1.134926	1.214803	0	5.315139	N = 49

Table 6: Variable definitions and sources

Variable	Definition and Source
Democracy	An eleven category scale, from 0 to 10, with a higher score indicating more democracy. Points are awarded on three dimensions: competitiveness on political participation, competitiveness of executive recruitment, and constraints on chief executive. This has been re-scaled to 0-1. Variable described in Gurr (1999). Source: Marshall and Gurr (2013)
Autocracy	An eleven category scale, from 0 to 10, with a higher score indicating more autocracy. This has been re-scaled to 0-1. Variable described in Gurr (1999). Source: Marshall and Gurr (2013)
Constraint on Executive	A seven category scale, from 1 to 7, with a higher score indicating more constraints. This has been re-scaled to 0-1. Variable described in Gurr (1999). Source: Marshall and Gurr (2013)
Family Farms	The area of family farms as a percentage of the total area of holdings. A family farm employs no more than four people including family members and the family owns and cultivates the land. The data set is reported in averages for each decade. For this study, we use five-years average, therefore the data has been considered twice (e.g. for the periods 1990-1995 and 1995-2000, I use the data reported for 1990s. Source: (Vanhanen, 2003)
Oil and Natural gas discoveries	This variable assumes the value of 1 if there was a discovery of oil or natural gas in that period of time, otherwise it is equal to 0. This variable has been created based in PETRODATA, and from several other sources (for the missing years). Source: (Lujala et al., 2007), and author's elaboration
British Investments in Latin America	Average of British investments in Latin American countries in the period 1905-1911, divided by the country's average government revenue. The value is expressed in US$. Source: Paish (1909) and Banks and Wilson (2013)
Latin American trade with Britain	Average of British imports from Latin American economies in the period 1898-1906, divided by total country's exports. The value is expressed in US$. Source Statistical Office (1906) and Banks and Wilson (2013)
European settlements in 1800	Percentage of population that was European or of European descent in 1800. Source: Acemoglu et al. (2001) and McEvedy and Jones (1977)
Pre-colonial population	Total population in 1500. Source: Acemoglu et al. (2002) and McEvedy and Jones (1977)
Colonial Minerals	Dummy variable. It is equal to 1 if the main economic activity during the colonial period was based on the exploitation of gold or silver. 0 otherwise. Source: Author's elaboration
Sugar suitability	Percent of national land area suitable for the production of sugar, taking into account such factors as soil, rainfall, temperature, and elevation. Source: FAO (2010)