

Thema

UMR 8184

Théorie Économique, Modélisation et Applications

Thema Working Paper n° 2014-27
Université de Cergy Pontoise, France

"French Colonial Trade Patterns: European
Settlement"

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October, 2014

French Colonial Trade Patterns: European Settlement, Networking and Institutions

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October 21, 2014

Abstract

We investigate how the colonial strategy through the settlement decision affected French trade patterns. In this regard, we construct a new database relying on various primary historical sources containing information on the value of French sectoral trade between 1880 and 1913. Our results show that French colonies with more European settlements traded more with France, whereas the opposite is true for other colonies. We also investigate two channels through which European settlements might have affected the French trade pattern with colonies: institutions and networking. We find that better institutions brought by European settlements had a negative impact on trade with French colonies, while it promoted trade with British colonies. These results are consistent with the extractive nature of French trade relations with its colonies. As for networking, it increases overall French trade within French colonies but reduces it in other colonies.

Keywords: European Settlement, Institutions, Networking, Trade, Colonization

JEL classification: D85, N50, N53, N70, P16, P51

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1 Introduction

Economic exploitation is widely held to have been the driver of colonization: European settlement in the 1900's was a way to establish colonization while trade served as tool for exploitation. Although political power rivalry might have been another driver of colonial expansions, economic motives remain the ultimate goal of colonization. This economic facet of colonialism is important because it has a longstanding influence on current economic disparities among the former colonies (Acemoglu, 2001; Alam, 1994; Bretocchi, 2001; Kown, 2011; Lange, 2006; Nunn, 2008-2009; Sylwester, 2007). European powers established their colonial control by settling in the colonies and exploiting their resources through trade. This assertion is not new to the literature and can be traced back to Hobson, Lenin and on down to Marxist thinkers, who regarded trade as the prime cause of imperialist expansion (Kleiman, 1976). The French colonization offers a quite representative example: French colonizers settled, namely in the form of military troops, imposed territorial powers, and set up trade policies and preferential trade agreements in order to transfer resources from the colony to themselves and secure favorable markets for their products (Crowder, 1968)¹

Colonial exploitation in its "legitimate form" occurred under the veil of colonial trade, hence the latter offers an illustrative picture of how colonizers applied extractive policies in their colonies. For that reason, looking at the trade relation between one colonial empire -taking the particular case of French empire- with the different groups of colonies during the age of high imperialism help us shed the light on this angle of the colonial strategy.

To gain some perspective on this question, this paper investigates how the amount of European settlement in 1900's in the colonies affected France's level of resource extraction through trade values and patterns, as well as whether those patterns of trade differ if the trading partner were the French colonies or other colonies. Figure 1a depicts the transmission mechanisms of colonialism on trade. We hypothesize that if the French settled in their colonies for the purpose of exploiting their raw materials and using their markets to sell their products, one would expect more french imports of raw materials and exports of manufactured goods as a result of this settlement, as arrows 1 and 2 in figure 1a illustrate. Meanwhile if the British or other Europeans settled in their respective colonies, this would not necessarily increase French imports of other colonies' raw materials. In the case where the British settlement had a positive impact on French bilateral trade with the British

¹A country's trade with territories politically dependent on it is more profitable than its trade with the rest of the world. In cases where trade monopolies were granted to empires, they need not, in theory at least, to have affected the colony's choice of trade partners. "But the growing internal democratization of the colonial powers [...] required a trade structure biased towards the metropolitan country as a necessary condition for the economic exploitation of colonial territories through trade [...]" (Kleiman, 1976, p.459).

colonies, this would mean that the latter were engaging in favorable trade² with France as arrows 1 and 3 of Figure 1a show.

Colonial settlements clearly mattered for economic exploitation, but through which channels did those settlements impact French trade patterns with the various groups of colonies? We argue that European settlements had (1) a direct effect on colonial relations related to the social network developed through their presence and (2) an indirect one related to the type of institutions they have introduced as represented and later explained in figure 1b. To investigate this relationship, we empirically separate the network effect of settlement from its institutional effect. We first estimate the impact of the share of European settlers in 1900 on the French sectoral imports and exports and then estimate separately the channels through which this effect might have operated as mentioned above: the networking (reflected under two indicators which are common language with the colonizer and duration of colonization), and the institutions (reflected under democracy and constraints of the executive).

Regarding the network effect, in a recent study on the causal relationship between migration and trade, Bacarreza et al., (2006) used 1990-2003 data from Bolivia, to show that the presence of foreign immigrants in Bolivia and of Bolivian emigrants abroad have positive and significant effects on Bolivian bilateral trade. A similar argument can be applied to the colonial era: Glaeser et al., (2004) argued that European settlers brought more than just institutions to the New World: they also brought their own selves. Settlers promoted their language and got acquainted with the system, habits, and traits of the colonies which reduced transaction costs and made the exploitation of resource traded easier, as arrows 1,2 and 4 in figure 1b depict.

Another channel explaining settlement is institutions. In their paper on the colonial origins of comparative development, Acemoglu, Johnson and Robinson, (2001) argued that where Europeans migrated in large numbers, they introduced European-style institutions with property rights checks and accountability for the governor and higher levels of democracy. Those institutions persisted and impacted positively the economic performance of those countries who inherited the "good" institutions. Recent studies, on their turn, show that a higher quality of institutions exerts significant positive effects on current bilateral trade flows due to the decreasing transaction cost and increasing level of trust (Briant et al. 2009; DeSousa & Lochard, 2010; De Groot et al. 2004; Linders, 2004). We hypothesize similarly that such institutions if introduced by the colonizer, could lead to favorable trade between the the latter and the colonies. That is, if for instance, British settlements introduced

²Favorable trade is defined in this context as the one that allows countries to engage in exchange wherever it is mutually profitable to both parties, unlike the "forced trade" or the extractive trade that is a form of resources exploitation.

such institutions ("good institutions"), this would result in favorable total trade and trade patterns between France and British colonies, as depicted in points 3, 5 and 7 of Figure 1b. On the other hand, if French settlements introduced policies that perpetuated inequality and exploitation, it should increase the level of imports of raw materials from French colonies and thus the level of extractive trade as points 6 and 8 in the same figure show. This relationship is embodied in the larger literature examining the longstanding impact of institutional legacy on current economic performance (Acemoglu, 2001; Alam, 1994; Bretocchi, 2001; Kown, 2011; Lange, 2006; Nunn, 2008-2009; Sylwester, 2007).

In this regard, we constructed a new data set with more than 20,000 observations containing information on the value of French imports and exports with each of its trading partners between 1880 and 1913. The data were collected from "Tableau General du commerce" which is the most complete and reliable database, as it is the official data of the French Customs. Our data are superior to previous work in the sectoral and directional dimensions as it contains information on the exports and imports of France with each of its trading partners, disaggregated into four sectors: agricultural raw materials, food, raw material necessary for industry, and manufactured goods.

Prior to our work, a number of studies investigated the impact of colonial status on both historical and current trade (Estevadeoral et al., 2003; Mitchener Weidenmier, 2008, DeSousa & Lochard, 2012) while others have examined the effect of independence on post-colonial trade (Mayer et al., 2010; Lochard & Lavallée, 2012). While some studies explore this issue in a related way by looking at the effect of colonial status on bilateral trade³, they only rely on colonial dummies and total trade instead of sectoral bilateral trade. They show that being colonized exerts a positive impact on total bilateral trade. No paper to our knowledge has focused on understanding how colonial settlements through both channels of networking and institutions impacted differently the types of products traded between France and various colonial groups. This gap is partly due to the fact that their samples lacked such detailed data on colonial and sectoral French trade.

We find that higher French settlement increased the overall French imports and exports from French colonies. The impact is stronger with respect to imports of raw materials suggesting that French settlements did facilitate the extraction of raw materials. The British or other European settlements in their respective colonies lead to a decrease in the trade of those colonies with France.

Interestingly, our results not only show the impact of European settlements on trade patterns but also point out that the mechanism through which membership in an empire exerted positive effects on bilateral trade as previously found by Mitchener and Weidenmier (2008) is through European

³Mitchener and Weidenmier, 2008; Rose 2000, 2002; DeSousa & Lochard, 2012

Settlements. Actually, once we control for European settlements in the various groups of colonies, colonial dummies exert either insignificant or negative effects on French trade. Such results go beyond those found in previous literature.

We then separately examine the impact of institutions and of networking through European settlements. We find that in French colonies, worse institutions promote French imports of raw material and French exports of manufactured goods. These results confirm our hypothesis stated earlier that France was better at exploiting its colonies in the presence of extractive institutions. On the other hand, higher institutional quality in the British colonies is associated with higher trade between those colonies and France confirming also that better institutions promote favorable trade in the absence of power imbalance between the two trading partners.

As for the networking effect, we find that stronger networking between France and its colonies increased French exports and imports in French colonies, with the highest magnitude attributed to French imports of raw agricultural goods. In the French colonies, the positive impact of networking is complementary to the negative impact of institutions in the sense that extractive policies can be more easily implemented whenever the colonizer have acquired greater power through networking. This in turn, would boost extraction through trade. We also found that the stronger network relation developed between British settlers and their respective colonies, is the less trade will be conducted those colonies and France. These results still hold after controlling for endogeneity problems and for the different choice of instruments.

This paper is organized as follows: Section 2 presents an overview of the literature examining the link between colonial settlement and the promotion of trade. Section 3 presents the gravity model, the data used in the empirical setting, and the core results. Section 4 depicts the channels through which settlement might have affected trade. The last section provides a conclusion.

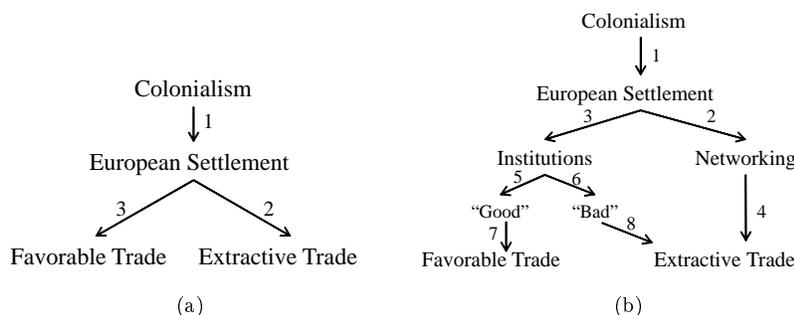


Figure 1: Motivation scheme

2 Colonization, Settlement and Trade

A careful reading of the economics and history literature suggests a variety of reasons to explain why colonization might have affected the patterns of trade during the high imperialism period. As the main goal of colonialism, trade was initiated by principles of mercantilism and of imperialism. Betts (1961) and Kown (2011) relate the expansion of imperial control to mercantile economic policies, which led to demands for formal political control. Mitchener and Weidenmier (2008) further argue that, prior to the Industrial Revolution, colonial acquisitions were continuously sought by imperial powers to complement their growing economies, which ultimately affected colonial trade. The authors find that belonging to an empire doubled trade relative to those countries that were previously not part of an empire.⁴ These findings are consistent with previous literature suggesting that colonial domination has increased colonies' trade with their metropolitan countries (Bairoch, 1981; Kleiman, 1976).

In its extreme form, colonization reflects some form of "enforced trade", which implies some monopolization of colonial trade, "forcing the colony's population to buy their imports for more and to sell their exports for less than going world prices" (Kleiman, 1976, p. 1). To a lesser extreme, colonies are not entirely subjugated to the colonizer and have some level of internal sovereignty; hence, exploitation in its literal sense becomes difficult and "a trade structure biased towards the metropolitan country is needed for the economic exploitation of colonial territories through trade" (Kleiman, 1976, p. 1). Colonization facilitates trade by using power to impose preferential trade policies, currency and custom unions (Crowder, 1968; Estevadeordal et al., 2003; Furgeson & Schularick, 2006; Lal, 2004; Mitchener & Weidenmier, 2008). Using French colonization as an example, the French benefited from low-cost imports, especially agricultural goods, and from some trade agreements that gave large advantages to French exports (Amin, 1971, 1973; Lavalée Lochard, 2012).

According to Head et al. (2010), former colonies' trade with the metropolis, three decades after acquiring its independence, would shrink by more than 60% due to the termination of some forms of formal or informal trade agreements. Hostile separations put an end to any form of influence or domination, leading to immediate reductions in trade. Similar results were put forth by Lochard and Lavallée (2012), who show that an independence event reduce the overall post-independence trade mainly within the French colonies. These results suggest that colonial trade was upheld against the

⁴Agricultural exports boomed in the Gold coast, including Senegal, Ivory Coast and other French colonies in West Africa; in return, these colonies began to import Europeans manufactured goods. In Indochina (a French colony), the land under cultivation dramatically increased, allowing it to become the third largest producer of rice in the world (Mitchener & Weidenmier, 2008)

interests of the inhabitants of the colonies and, consequently, the attainment of sovereignty would be followed by a decrease in bilateral trade.

Nevertheless independence leads to a decrease but not a total elimination of trade, suggesting that at least part of the trade was beneficial to the colony. Thus, colonization and the resulting trade agreements only partially relates to extractive trade. A colony's tendency to trade with its empire might be driven by preferential treatment or other conditions favoring such trade, even in the absence of colonial domination. One aspect distinguishing various types of dependencies is whether colonies were free to decide what and with whom to trade outside their colonial empire. This distinction can be made using our data: for example, if British colonies with better institutions traded with French empire, this indicates that regardless whether they were forced or not to trade with their own empire, they were also allowed to engage in favorable trade with external partners such as France.

As indicated in the introduction, the main premise of this research is that Europeans settlements in colonies in the 1900s might have had a direct and indirect impact on the trade relations. On the one hand, settlements led to the establishment of connections that deepened the colonizers' networks, enabling them to maintain more extractive policies and exploit resources more easily. Egger et al. (2012) argue that migrants acquire economic, cultural and institutional knowledge about both the home and the host markets enabling them mediate economic exchanges between those markets.

On the other hand, settlements led to the creation of European style institutions that lowered the level of enforced trade. Acemoglu et al. (2001) argue that, whenever Europeans found viable areas, they tended to settle, build infrastructure, and promote European-style institutions that have persisted until today; wherever they faced tropical soils and diseases, they confronted the high costs of cultivation, building and trade, which demotivated the settlers, leaving them with only extractive institutions (Acemoglu et al., 2001; Nunn & Puga, 2010).

European settlements, whether through networking or institutions, increased French trade. In order to empirically investigate how European settlements affected the French trade patterns with the various colonial groups and to assess the importance of European settlements on trade as compared to other factors that might also affect trade, we use an augmented gravity model, as explained in the next section.

3 Empirical Model and Data

3.1 Baseline model

The gravity model is the workhorse model for examining trade flows and is used extensively in the literature due in part to its good fit to the data. In its basic form, the model suggests that the bigger the mass, that is, the larger the economy, the greater the trade is, whereas the larger the distance (a force of resistance), the lesser the trade. For our empirical analysis, we use an augmented version of the gravity model to include the share of European settlers in the 1900s among every 100 inhabitants in the host country (denoted by European settlement) as a main explanatory variable, together with mass, distance and a number of economic and geographical variables (i.e., currency and custom unions, tariffs, wars, landlocked and colonial dummies).

More specifically, our baseline regression is based on the following gravity equation:

$$\ln(\text{Trade})_{its} = \beta_0 + \sum_{j \in J} \beta_j D_{ijt} + \sum_{j \in J} \gamma_j D_{ijt} ES_i + \alpha \mathbf{X}_{it} + \epsilon, \quad (1)$$

where indices i , t and s represent, respectively, the country France is trading with, the year, and the sector. Trade is divided into four sectors: food, agricultural raw materials, raw materials for industry and manufactured goods. $j \in J$ refers to the colonial group within the set of colonizers $J = (\text{France}, \text{Great Britain}, \text{other empires}, \text{former colonies})$.

D_{ij} are colonial dummies that equal one when country i is within the colonial group j and zero otherwise. The colonial status dummies are relevant as they indicate whether the colonial status per se affected trade. ES_i represents European settlements in 1900 in country i . The interaction term between European settlement and colonial dummies allow us to identify whether the impact of French settlements differs from settlements from other colonizers in their own colonies.⁵

\mathbf{X}_{it} is a vector of control variables composed of population density in 1900 (in log, capturing the size of a country), the distance between France and its trading partner (also in log), and dummies for being landlocked and a dummy capturing whether France was in a state of war, and another dummy whether the trade partner was at war. Following earlier studies, we also incorporated historical-institutional dummies: nine distinct dummies show whether the country was part of a formal or informal trade preference, currency union and custom union with one colonial group $j \in J$. These variables are relevant to control for, since such trade agreements are likely to increase trade with its agreement partner, possibly also affecting trade with other partners. Finally, we control for

⁵We assume that European settlement in British colonies was mainly carried out by the British as French people had not interest in settling in British colonies during the colonial era. The results in the following tables confirm our assumption.

climate indicators (temperature and humidity). Those variables are particularly relevant because they affect agricultural productivity and the main trade between France and its colonies is based on agricultural products.

We estimate equation (1) using pooled ordinary least squares, with year fixed effects to control for any random annual shock. Country fixed effects were not included since we already controlled for many relevant country specific effects in the equation. In regressions not reported in this paper, country fixed effects show insignificant results for most of the countries.

3.2 Data

We have constructed a large database of annual French sectoral trade from French statistical primary sources. In particular, we relied on numerous volumes of the "Tableau Général du commerce de la France" and the "Tableau décennal du commerce de la France". The data include more than 20,000 observations of French bilateral imports and exports from 1880 to 1913 for a total of 98 colonies, including 27 French colonies, 37 British colonies, 17 other colonies and 17 former colonies.⁶ Notice that, although we have data from 1880, we chose to base our analysis on data starting on 1890. The reason for this choice is to keep the time frame closer to that of our main explanatory variable, European settlement, which is available only for the year 1900.⁷ All data is deflated using the INSEE published index of prices calculated from the gross prices of 45 products (base 100 Francs 1914).

The data are disaggregated into the following sectors: agricultural raw materials; raw materials for industry; and manufactured products. The French exports reported as agricultural goods consist mainly of food products (flour, wine, oil) and not agricultural raw material, while its imports of agricultural products are basically raw materials (i.e., wheat, sugar, fruits). We note that France largest share of exports to its colonies consisted of food sector, accounting for more than 80% of French colonial exports. The raw materials for industry consist of mining products such as gold, cobalt, phosphate, iron, wood, and wool. The manufactured goods consist of all things produced by either France or the colonies.

⁶French colonies: Algeria, Benin, Burkina Fasso, Cambodia, Central African Republic, Chad, Congo, French Guiana, French Polynesia, Gabon, Guadeloupe, Guinea, Ivory Coast, Laos, Madagascar, Mali, Martinique, Mauritania, New Caledonia, Vanuatu, Niger, Reunion, St Pierre and Miquelon, Senegal, Vietnam, Morocco, and Tunisia. British colonies: Antigua and Barbuda, Australia, Bahamas, Bangladesh, Barbados, Botswana, Virgin Islands, Cyprus, Dominica, Fiji, Gambia, Ghana, Gibraltar, Grenada, Guyana, Jamaica, Kenya, Malawi, Malta, Mauritius, Myanmar, New Zealand, Nigeria, Pakistan, Saint Lucia, Sierra Leone, Solomon Islands, Somalia, South Africa, Sudan, Tanzania, Trinidad and Tobago, Uganda, Zambia, Zimbabwe, Egypt, and India. Other colonies: Angola, Aruba, Cameroon, Cuba, DR Congo, Equatorial Guinea, Guinea Bissau, Indonesia, Mozambique, Namibia, Philippines, Puerto Rico, Sao Tome and Principe, Suriname, Togo, Virgin Islands (US), and Western Sahara. Former colonies: Argentina, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, Haiti, Honduras, Mexico, Peru, USA, Uruguay, and Venezuela

⁷Extrapolating European settlement in 1900 20 years backwards (i.e. back to 1880) is a stronger assumption and harder to justify. Nevertheless, we used the full sample for robustness check and our main results were unchanged.

Notice that our database significantly improves upon historical trade data used in previous works, for it includes data on exports and imports separately, as well as disaggregated trade data into sectors, as described in the previous paragraph. The data are annual and cover all French trading partners. This detailed and comprehensive data allows comparing French trade with its own colonies, to French trade with other colonies (including German, Belgian, Spanish and Portuguese) as well as former colonies.

The trade data were originally collected at the aggregate level by colonial groups and geographical regions and were subject to continuous changes throughout the years of the sample. Taking into account, on a yearly basis, the political and historical events (i.e. colonization, independence, creation of a nation, new groups entering the sample), we were able to assign the appropriate countries to each colonial group, using population density collected from Mitchell (2007) and Madison (2005) as a weight to assign trade values for each country.⁸ The disaggregation of the countries from the group level to the individual level, as described above, is presented in table A.2 in the appendix.⁹

Figure 2 shows the world map containing all the countries included in our sample and how they were divided among the colonial powers. Table 1 below shows the relative shares of French trade values with each group of colonies. Notice that French exports of raw materials for industry and their imports of manufactured goods were very small compared to trade in other sectors (not more than 1% of total trade). We then choose not to include exports of raw materials for industry and imports of manufactured goods in our regression, since they are not economically significant as the values of trade given that these two sectors are very low, as reported in Table 1.

⁸We conducted an alternative weight measure using arable land area and added the results as robustness checks

⁹The groups are well defined in terms of geographical location and identity of the colonizer so we were able to accurately conduct the segregation process with minor losses of information. For details on the data construction, refer to our previous paper not yet published available from the authors.

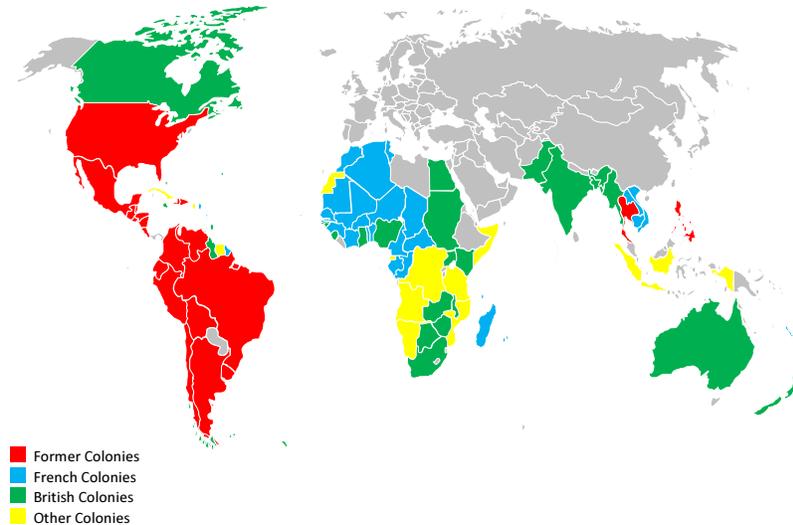


Figure 2: The trading partners of France per colonial groups

European settlement in the 1900s is the percentage of the population that was European or of European descent in the year 1900 in the countries included in our sample. We argue that European settlements is mainly due to the colonial settlements and hence relate each European colonizer to its colony. The data on European settlements is from Acemoglu et al. (2001), and the missing values for some French colonies were completed using data from Huillery (2011). Huillery’s data were collected at the district level for the countries of West Africa; thus, we aggregated the data to the national level and transformed the share from per mil into percentages to match the initial data from Acemoglu et al. (2001), as shown in Table A.1 in the Appendix.

We would have liked to include GDP to measure mass in our gravity model; however, reliable annual estimates for the period of study are not available. We therefore use population per square kilometer from Nunn (2011). In the pre-industrial, Malthusian era, population density can be used as an appropriate measure for a society’s economic performance since, at the time, any technological improvement led to population increases rather than per capita income increases (Engerman & Sokoloff, 1997). Michael Kremer (1993), Galor (2005) and Ashraf and Galor (2011) provide theoretical and empirical analysis of the relationship among population size, population density and long-term growth in Malthusian times (Madison, 2006; Mitchell, 2007). Missing data were adjusted and interpolated from available data based on population dynamics.

The distance between France and its trade partners is from CEPII, constructed by Mayer and Zignago (2011). The basic idea is to calculate the distance between two countries based on distance between the biggest cities of those two countries, with the distances being weighted by the share of

the city in the country's overall population. Landlocked data were collected from the Geo CEPII data (Mayer & Zignago, 2011) and from Nunn (2008).

Following previous studies (Mitchener & Weidenmeir, 2008; Rose, 2004), who found a significant impact of trade preferences (preferential trade agreements, custom unions, currency unions) on trade, we included various dummies for trade preference, custom and currency unions to indicate whether the country was in any form of agreement with France, Britain or a third colonial power. These variables are from Mitchener and Weidenmier (2008).¹⁰ The data on whether country i was at war or France was at war in a particular year were constructed based on the data from the Correlates of War website. The climate variables, average temperature and average humidity, are from Acemoglu et al. (2001), using those from Parker (1997) for the missing countries. We took the average temperature in Centigrade and the average humidity in percentages.

The colonial status dummies were constructed based also on the Geo CEPII data constructed by Mayer and Zignago (2011). For the dates of colonization, we collected information from various sources. We defined the year of colonization as the year the colonizer established the colony, not the year it acquired the land. In addition, we considered only the year of independence from the colonizer, not from other conflicts. As the sample spans a long period, political states often changed, as did countries' placement and colonial status within the sample. If many colonizers established colonies in the same area, we considered only the most recent one (if established before 1880); otherwise, the country's colonial status alternated among the various colonial dummies.

4 The impact of settlements on trade

4.1 POLS results

Table 2 reports the pooled ordinary least-squares (POLS) regressions of equation (1). The estimated coefficient for European settlements in 1900 is significant for most sectors and interaction terms. Column (1) presents the results for the impact of the explanatory variables on the total trade with France. As indicated by the coefficients of the interaction term between European Settlement with the colony dummies, we find that a higher share of settlers in French colonies increased trade with France, while a higher share of settlers in other colonies decreased trade with France. This result suggests that settlers in other colonies were mainly their colonizers; once they settled, they constrained the colonial trade with France.

¹⁰We thank Marc Weidenmier and Chris Mitchener for generously sharing their data

An interesting result is that, after controlling for European settlement variable, the French colonial dummy D_{iFr} did not seem to have a positive impact on trade with France. Empirical evidence from Mitchener and Weidenmier (2008) indicates that membership in an empire increased bilateral trade. Our results go one step further by showing the means through which this membership impacted trade, namely, through settlements. Interestingly, once we control for this European settlements in the colonies, colonial dummy has an insignificant or, in some instances, even negative impact on trade with France.

Columns (2) and (3) of Table 2 show the impact of European settlement on French exports of food and of manufactured goods, respectively. A higher share of French settlers increase French exports of food and of manufactured products. This result supports our hypothesis: colonization, as previously argued, provided a way for the French to establish control through settlements and strengthen their trade ties in order to use the colonial market as the main consumer of its products. Marseilles (1984) observed that France, isolated within its empire and imposing the prices of products in the colonial markets through custom unions and trade preferences, exported its manufactured products to ensure the existence of solvable markets for the empire during times of crisis. With respect to the British and other colonies, more British and other European settlements has a negative impact on French exports of food and manufactured products.

As for the imports of raw agricultural goods, they are negatively correlated with European settlements in French colonies, as shown in column (4) of the table. This negative sign might be related to reverse causality between settlements and trade, which are not corrected for in the POLS regressions. More specifically, one potential explanation is that the French might have been exploiting the natural resources even before formal colonization took place, so that they did not need to, nor were they encouraged to settle in order to extract. Why would that be the case? Actually, the colonial vocation was generally not popular in France. The health conditions were deplorable; tropical diseases took a heavy toll in the colonial corps between 1887 and 1912 (16% died in the colonies) (Victor Marguerite, De La Justice, *Annals Colonials* XIII June 1, 1912). Consequently, administrators could not bring their families with them, and few men were willing to accept a lifetime career away from their families.¹¹ This being stated, as long as they were able to engage in trade, settlements overseas were limited to some traders and officers (Cohen, 1971). This effect should render the OLS coefficient smaller, and controlling for it we would be able to capture the

¹¹Cohen relates in his book “Rulers of Empire” that overseas French possessions were modest and scarcely populated; they consisted of plantation owners, slaves and small trade forts on the coastline of West Africa and India which were occupied by a small number of French traders and officers. Relation with the indigenous population were limited to trade and the establishment of some form of diplomatic relations with the local states (Cohen, 1971)

higher impact of settlements on French imports of raw agricultural goods from its own colonies. This is actually the case, as we will see in the next subsection when comparing the POLS coefficient to the IV coefficients.

Also in column (4) of Table 2, we see that British settlements increase French imports of raw agricultural products from British colonies. This positive effect of British settlements on French imports from British colonies can be attributed to two possible explanations. On the one hand, reverse causality might have increased the POLS estimator. The idea is that it is not the British settlements that drove British colonies to trade with France. It may have been the case that France was already importing agricultural raw products from British colonies even before colonization, and Great Britain non-randomly sought those territories expecting economic profits. On the other hand, after Britain established colonization, it set up certain trade policies with its colonies to encourage trade with other empires.¹² This second explanation can be confirmed by the positive estimator of trade agreements with British colonies, indicating that British colonies that signed trade agreements with Britain increased their exports of raw materials to France.¹³

The standard gravity variables were controlled for, although not reported in the table. Most variables enter with the correct expected sign and are, for most sectors and for overall trade, statistically significant. In terms of geographical influences on trade, all else being constant, being landlocked or far away from the trading partner reduces trade flows. Most specifications also show that larger countries (as measured here by population) trade more. Furthermore, the interstate and French war variables significantly reduce trade. No specific-year fixed effects were noted.

Although we tried to control for most factors affecting trade, OLS results cannot be interpreted as either causative or accurate for a number of reasons. In particular colonization may be endogenous to trade. The fact that trade might have preceded colonial expansions or even lead to it, is a plausible possibility. In order to correct for this endogeneity problem we will employ a two-stage least square (2SLS) estimation method which will be described in detail in the next subsection.

4.2 Instrumental variables

One drawback of OLS results on the impact of colonization or colonial settlements on trade is that it does not take into account the possibility of reverse causality: pre-colonial trade is likely to have impacted settlement and colonization decisions. We use instrumental variables to try and control

¹²Britain established open door policies: An open door trade policy refers to a tariff regime where there is no distinction made between the products of the mother country and non-empire trading partners.

¹³De Sousa and Locharde's (2012) "Trade and Colonial Status" provides further discussion of reverse causality between colonization and trade.

for possible reverse causality in the OLS results. We first describe the instrumental variables used, and then present the the results from the two-stage least square regressions.

4.2.1 Identification of Instrumental Variables

We propose three instruments for European settlements in 1900 for our identification strategy. The first one is pre-colonial population density (in the 1500s). Engerman & Sokoloff (1997) argue that Europeans were more likely to settle in previously poor and less populated regions because indigenous population density raises costs for Europeans to obtain and secure land for new settlers. Acemoglu et al. (2002) also argue that Europeans settlements in 1900's are negatively correlated with pre-colonial population because the density of pre-colonial indigenous population affects the returns from setting up extractive institutions. Following the same line of arguments, Huillery's (2011) recent empirical results show that pre-colonial high population density would increase the risk of indigenous hostility and hence discourage new settlements. Based on this discussion, population density in 1500 might have had a significant impact on decisions related to European settlement in 1900. We have no reason to believe that population density in 1500 is correlated to trade in 1900.

The second instrument for European Settlements is latitude, measured as the distance from equator. This variable has been used in previous works (AJR, 2001, 2002, 2005) as instrument for European settlement in colonies, given its relation to land and climate conditions. Favorable conditions undoubtedly encouraged settlers to settle whereas unfavorable climate would have discouraged settlement, leading to the creation of extractive policies and mercantile colonial rules. However, latitude is also correlated to climate and geographical conditions that affect agricultural performance, hence countries' comparative advantages. Latitude would then have a direct impact on trade, independently of the impact exerted through its correlation with European settlement. Therefore, this variable does not qualify as a valid instrument.

The third instrument is settler mortality from Acemoglu et al. (2001, 2002), who argue that historical mortality rates were influential in shaping the pattern of European settlement in former colonies. The main problem of using settler mortality data as an instrument of European settlement, aside from doubts about its various sources (Albouy, 2005), is the fact that it can be correlated to low agricultural productivity and a high burden of diseases. Thus, this instrument would not be valid since it would also have a direct impact on trade.

All in all, population density in 1500 seems to be the most appropriate instrument since unlike the other two, it should have no direct relation with trade in 1900 unless through European settlements.

Our identification can be expressed as follows:

$$\text{European Settlement} = \alpha_0 + \alpha_1 \text{popden1500} + \boldsymbol{\alpha} \mathbf{X}_{it} + \vartheta \quad (2)$$

where \mathbf{X} is the vector of our explanatory variables as described previously in equation 1.

The results reported in Table 3, show that the coefficient of our preferred instrument, the population density, has the highest magnitude with an R-square of 58%. The coefficients of latitude and settler mortality taken alone, have high magnitudes and strong explanatory power with R-square respectively 50% and 70%, when taken with population density, this magnitude decreases dramatically confirming the superiority of population density in 1500 as an instrument. Note, nevertheless that these other two instruments will be used for robustness purposes.

4.2.2 2SLS Results

Column 3 of Table 3 reports the first stage results of our instrumental variable regression using population density in 1500 as an instrument for European Settlement, whereas Table 4 reports the second stage results of the same regression. Columns 1 to 3 report the instrumental variable results for respectively total trade, exports of food and exports of manufactured products. Those results are very similar to the baseline regressions for most of the sectors and most of the variables in the regressions and are robust and significant: Higher settlements in French colonies increase both total trade and French exports of food and manufactured goods to those colonies whereas, higher settlements in British and other colonies decrease total trade with France and French exports to those colonies.

It is interesting to note that the coefficients for imports of raw agricultural material are opposite to the ones in the POLS as shown in column 4 of Table 4. The 2SLS results indicate that a one percentage point increase in French settlements increased the French imports of agricultural goods from French colonies by nearly 8%, whereas a one percentage point increase in the share of British settlements decreased French imports of agricultural goods by nearly 6%. Once we control for reverse causality, our results indicate that French settlements would facilitate extraction, causing imports of raw agricultural material from their colonies to increase. This result is in line with what Marseilles (1984, p. 75) wrote: "The colonial empire was reserve tank of agricultural commodities" (translation by the author).

Column 5 shows positive and significant effect of British settlements on French imports of industrial raw materials from the British colonies. A possible explanation for this result would be

that British colonies might had a comparative advantage in raw material for industry, which they were able to exploit due to the "open door" policy of Great Britain (refer to footnote12). In other words, British colonies under open door trade policy did not have a preferential tariff with their metropolis, so that they trade with other partners such as France. Even though results indicated that British settlements negatively affected overall French trade with the British colonies, this effect varies depending on the sector in question. We hope to shed further light on this result once we disentangle its effects between network and institutions in section 4.

To provide some additional insights to the effects of European settlements on sectoral French trade, it is interesting to look at the export boom in French West Africa—namely, in Senegal and the Ivory Coast—between 1897 and 1913. Timber exports from the Ivory Coast increased by a factor of six in twenty years (Frieden, 2006), as colonial imports of European manufacturers grew. In Indochina (which was under French colonial regime), the area of cultivated land dramatically increased, allowing it to become the third largest producer of rice in the world (Mitchener & Weidenmier, 2008). French settlements strengthened their ties between the empire and its colonial markets, achieving the ultimate goal of French colonization, as stated by Jules Ferry in his 1911 essay “La politique coloniale était fille de la politique industrielle.” France used the colonial markets as both a buffer in times of crisis and a profitable alternative in times of expansion to dispense its products (Marseilles, 1984).

4.3 Robustness Checks

To check whether our results are sensitive to the specification of the econometric model, we conducted a series of robustness checks. The first column in Table 5 is the same as column 1 in Table 2 used for here as a reference for comparison. The first test we conduct is by including the full sample of trade from 1880 to 1913 instead of 1890-1913. The inclusion of 10 additional years (i.e., 1880–1890) does not change our results. As shown in column (2) of Table 5 French settlements still had a statistically significant effect on overall trade. The results are similar to the base sample POLS in column 1 for the remainder of the control variables (not reported here). Column 3 present results of the same regression, but disaggregation trade data from the original region to the country level using arable land area instead of population. The data were assembled using a variety of sources, including Mitchell (2007), Madisson (2006) and Nunn (2009). Although the individual values of trade associated to each country differ under this specification, the estimated coefficients of our main explanatory variables and the remaining control variables are similar results to the ones in the

base regression in column 1.

Columns (4) to (7) in Table 5 use alternative instrumental variables, as previously discussed. We first check whether the use of settler mortality and latitude as instrumental variables, compared to our initial instrumental variable, changed our results; we then included all three instrumental variables together. Our results seem to be robust to all specifications: French settlements did increase overall French trade in the French colonies whereas other European settlements reduced it. The other variables in the gravity model generally have the predicted signs and are statistically significant at conventional levels.¹⁴

5 The Settlement Effect: Networking vs. Institutions

Our empirical results suggest that European settlements in the late-nineteenth and early-twentieth centuries positively and significantly affected trade within the French colonies and negatively affected trade for some sectors of British and other colonies. These results convey that settlements can contain different underlying channels through which they affected trade. They can operate through networking or, indirectly, through institutions. In this section, we explore these channels through which settlements might have affected trade flows. On the one hand, we argue settlers used their presence in the colonies and their connections with the metropolis to facilitate trade. On the other hand, European settlers might have also brought their European-style institutions and invested in infrastructure which, in time, promoted innovation and industrialization. With better institutions, colonies would be less captive of the metropolis, and hence freer to choose with whom and what to trade. . In the next subsection, we discuss the two channels in turn: networking and institutions.

5.1 Networking

A first channel through which European settlement might have boosted French colonial trade is through networking. Recent studies have highlighted the importance of networks in monitoring trade in unorganized exchange markets as they facilitate matching the seller/buyer and fostering deals where laws of contract are weak (Rauch, 1999). Some evidence in the trade literature suggests that weak contracting institutions can be substituted by long-term relationships as well as kin- and ethnic-based networks to ensure efficient engagements (Nunn & Trefler, 2013). Moreover, Sandberg et al. (2012) argue that former trade networks have a significant effect on current trade volumes attributed

¹⁴To ensure robustness, we also conducted the same analysis for each sector separately, (not reported here). Most variables and interaction terms showed similar results as previously reported (not reported here).

to regionalism (via the enactment of regional trade agreements) and history (via the modern effects of former imperial relationships). Similarly and even more importantly in the colonies, where societies were less developed and legal apparatus was absent, and in a time when communication was harder, social networking had a greater role in creating some sort of informal contract enforcement that, even under extractive policies, would enhance trade between two countries.

Networking is also linked to European settlement. Easterly and Levine (2012) as well as Glaesser, La Porta, Lopez-de-Silanes, and Shleifer (2004) argue that, when they settled, Europeans not only brought institutions, but they also brought themselves. Lasting physical settlements helped settlers enforce higher production controls over the labor, leading to potentially higher productivity; Settlers also promoted common language, thereby making communication with merchants easier. "Even in cases where the dominant language of the population differed from that of the imperial power, a lingua franca often developed around commercial centers" (Mitchener & Weidenmeir, 2008, p. 1821). Alam et al. (1994) also argues that colonizers had previously encouraged emigration into their dependencies to give a form of permanence to their occupation of these territories and strengthen their ties.

Networking established by immigration reduces costs associated with international transaction. Similar analogy can be attributed to the colonial period where immigration is deemed to represent the colonial settlements and the networks are enhanced by the duration of colonization. Following this logic, we argue that, the longer the colonization, the more likely the immigrants created an inclusive social network with the indigenous population, thereby helping to alleviate uncertainty, asymmetric information and opportunism associated with international trade. Parsons (2005) show a positive relationship between immigration and bilateral trade flows. Egger et al. (2012) also argue that migrants acquire economic, cultural and institutional knowledge about both the home and the host markets; they are able to mediate economic exchanges between those markets, thereby increasing trade above what it would be in the absence of such migration. Colonizers needed to actually settle in order to optimize the extraction of financial and natural resources by reducing information asymmetries that were even more severe during the age of high imperialism. Merchants also, had a financial incentive to learn the culture, habits and mostly the language of colonial masters in order to sell more goods and protect themselves. In such situations, the mutual benefit extracted from trade is less likely.

A simple example makes the point about the role of networks in exchanges. During the period of colonial reign, colonizers were attracted by the cheap and abundant factor endowment in the colonies. In order to extract the full rent from this "wealth", colonizers had to impose some form

of subjugation only possible through establishing strong networks within the colony on the field. Actually, societies with soil, crops and coffee faced the strong presence of settlers implementing slavery and other policies that perpetuate inequality.

In order to capture the network effect, we used two proxies that we believe are likely to best represent the impact of networking as argued thus far. The first variable is the duration of colonization measured as the length of time from the year of colonization until the year in our sample. We argue that the longer the Europeans stayed, the more familiar they became with local customs and culture, the development of distribution and marketing channels, or the formation of social networks of the colony. This should decrease transaction costs associated with trade and hence increase international trade. The second variable is common language with France, which is mainly a scale from 0 to 1 showing the share of population speaking French. The variable was constructed based on the CEPII data set. The CEPII data reports the first four languages spoken by 20% of the population and above and the first two languages spoken by 9% to 20% of the population. The data also contains information on whether two countries share a common ethnological language, including the creoles of the French language and a lingua franca. Based on these data and the historical background, we constructed our index for language, ranging from 0 to 1 and taking the values of 0.1, 0.2, 0.25, 0.5, 0.75 and 1. If more than 20% of the population spoke French (French Creole) only, this means that the only foreign language in the country is French, hence we would assume that 75% of that population would speak it. If more than 20% of the population spoke French, and one or more languages, the population is divided between more than one foreign language; hence the share of French speaking population would range between 0.25 and 0.5 depending on the number of the other languages spoken. If French was spoken by 9% to 20% of the population, we would assume that the share would vary between 0.1 and 0.2. If French does not figure in the list of spoken languages, the variable would take a value of zero. The value of 1 is attributed to those countries whose second language is French. This information is gathered from various historical backgrounds. Institutions

The second channel linking European settlement and trade is institutions. Nunn and Trefler (2013) find that institutions seem to exert a significantly and economically important impact on the comparative advantage of advanced manufacturing goods, even after controlling for factor endowments. This effect occurs namely through factor accumulation, technological innovation and commercial enterprise. In other studies of the impact of institutions on historical and current trade flows, Mitchener and Weidenmeir (2008) and Estevadeordal et al. (2002) show that the main channels through which colonization has boosted trade occur through historical-institutional trade policies. DeGroot (2004) find that institutional homogeneity increases overall current trade flows by 13%

and that institutional quality increases it by 40% through securing and enforcing property rights in international transactions.

Yet what shapes institutional legacy during the colonial reign? Different types of colonization policies create different sets of institutions—an interpretation consistent with Acemoglu et al. (2001) and Crosby (1986), who argue that the colonization strategy was subjective to the viability of settlements. When European settlers faced favorable climate and soil conditions (resulting in low mortality rates and advantageous disease environment), they felt encouraged to stay and introduced good (productivity-enhancing) institutions which promote private property and checks against government power. This led to the creation of what Alfred Crosby called "Neo-Europe". Meanwhile, when a settlement was not viable due to unfavorable bio-geographic conditions (resulting in high mortality rates), they established extractive institutions. Engerman and Sokoloff (1997) assert that, when Europeans faced natural resources with profitable international markets but did not find the lands, climate, and disease environment suitable for large-scale settlement, they had no or little incentive to invest in institutions or infrastructure in the colonies and instead created authoritarian political institutions to extract and exploit natural resources.

Let us consider a few examples. The Belgian colonizers in the Democratic Republic of Congo did not introduce any rule of law against government expropriation; extractivists only transferred many of the colony's resources to their homeland. Between 1905 and 1914, 50% of French Dahomey GDP was extracted by the French (Manning, 1982), and taxation rates in Tunisia were four times as high as those in metropolitan France (Young, 1994). Another example is the case of the Spanish and the Portuguese colonists during the seventeenth and eighteenth centuries, who set up complex mercantile systems of monopolies and trade regulations in order to obtain gold and other valuables. Finally, a last example is the British introduction of sound economic and political institutions who transferred common-law systems to their colonies, property rights, and developed financial markets (La Porta et al., 1998, 1999; Landes, 1998; North et al., 1998).

In order to capture institutions, we used two main variables widely used in the economic history literature. Our first variable is constraint on executive for the year 1900, which is a seven-point scale ranging from 1 to 7, with a higher score indicating more constraints. A score of 1 indicates unlimited authority for the governor, 3 indicates slight to moderate limitations by other institutional corps, 5 indicates substantial limitations, and 7 indicates executive parity or subordination. Scores of 2, 4, and 6 indicate intermediate values. A higher score refers to a better quality of institutions. Data are also from Acemoglu et al. (2001), and the missing values were completed from the polity III data set. During French colonization and at least some of the French colonies, the constraint on administrators

was very low, leading governors to be brutal towards the indigenous population. Cohen (1971, p. 62) stated that French colonial administration was, in actual practice, a decentralized system giving nearly full authority to the men in the colonies: "The administrators tended to ignore their superiors and ruled their circles according to their whims, they would levy severe fines on the natives without serious causes and without the governors' permission."

Our second variable is democracy in 1900, measured as an index ranging from 0 to 10 (also from Acemoglu et al. (2001)).¹⁵ A higher score indicated more democracy points from three dimensions: competitiveness of political participation (from 1 to 3 points); competitiveness of executive recruitment (from 1 to 2 points, with a bonus of 1 point if there is an election); and constraints on chief executive (from 1 to 4 points). The measurement was equal to 1 if the country was not independent on the date in question. In his recent work, Nunn (2013) showed that a tradition of local democracy is also associated with attitudes that favor democracy, better quality institutions, and a higher level of economic development. His findings not only indicated persistence in democratic institutions over time, but are also consistent with national institutions affected by local institutions.

5.2 Empirical setup

In order to assess the effects of networking and institutions on French trade, we first disentangle the European settlements effect into two parts: one part associated with the networking effect and the second part associated with the institutions effect, as in:

$$ES_i = \alpha + \iota_1 ExConstr_i + \iota_2 Dem_i + \eta_1 Lang_i + \eta_2 Dur_2 + \mu \quad (3)$$

where ES represents European Settlements in 1900, $ExConstr_i$ refers to constraint on executive in 1900 and Dem_i to democracy in 1900. $Lang_i$ and Dur_2 refer respectively to common language and duration of colonization. μ is the error terms, capturing the part of European settlement not correlated with the four variables capturing networking and institutions.

Table 6a reports the ordinary least squared regressions of equation 3. Column (1) of Table 6a shows the regression of European settlement on the institutional indicators, constraint on executive and democracy variables, whereas column (2) shows the same regression on the networking indicators, the common language with France and the duration of colonization. The correlation coefficient are shown in Table 6b. Results of column (1) indicate that both institutional indicators are strongly and positively correlated with European settlement with a significant R-squared of 33%. Column

¹⁵Completed from Polity III data for missing values.

(2) alternatively presents results for the networking indicators, common French language and years spent in the empire. The colony takes a value between 0 and 1 if French language is among its speaking languages. According to the results, common french language is negatively correlated with European settlements and duration in in the colony is positively correlated with European settlement. The negative result of column (2) is due to the fact that expect the French (where settlement is scarce already) no other colonies speak French. Column (3) indicates the results of both networking and institutions impact on European settlements. We find that networks and institutions are highly correlated with European settlement and seem to capture a significant amount of the variation in settlements across colonies.

We use the parameter values $\widehat{\iota}_1$, $\widehat{\iota}_2$, $\widehat{\eta}_1$ and $\widehat{\eta}_2$ estimated from equation (3) to compute the fitted values of the part of European settlements associated to networking and the one associated with institutions, as represented in the equations:

$$\begin{cases} \widehat{ES}_{Ii} &= \widehat{\iota}_1 ExConstr_i + \widehat{\iota}_2 Dem_i, \text{ and} \\ \widehat{ES}_{Ni} &= \widehat{\eta}_1 Lang_i + \widehat{\eta}_2 Dur_{2i}. \end{cases} \quad (4)$$

We follow this procedure twice: once estimating the parameters through POLS, and once using 2SLS using population density in 1500 as instrumental variable for European settlement in 1900.

We now consider the extent to which these variables mattered in affecting trade between France and the colonial groups. We replace the European settlement variable used in earlier empirical models with the two fitted values in equation (4), corresponding to the institutional and the networking impacts of European settlement. We then interact those new variables with the colonial dummy as we did previously in equation (1). We also add the part of settlement uncorrelated with networking and institutional variables, μ in equation (3), in order to account for other unexplained channels through which European settlement may impact trade. The new gravity equation looks like:

$$LTrade_{ist} = \lambda_0 + \sum_{j \in J} \lambda_{1j} D_{ij} \widehat{ES}_{Ii} + \sum_{j \in J} \lambda_{2j} D_{ij} \widehat{ES}_{Ni} + \sum_{j \in J} \lambda_{3j} D_{ij} \mu + \lambda \mathbf{X}_{it} + \varepsilon \quad (5)$$

where \mathbf{X}_{it} is a vector of explanatory variables detailed previously in equation (1).

Notice that equation 5 was regressed twice: first using the estimated values and from POLS regressions, reported in table 7; and second using estimated from IV regression, reported in table 8. Like in the previous regressions, all standard gravity variables (not reported here) behave well

in terms of sign and significance. France traded less with countries that are more distant, trade decreased with war, and humid and cold climate reduced trade. Trade preference with France boosted trade with its colonies; however, countries that had trade agreements with their respective empires tended to trade less with France. Colonial status exerted a negative impact on trade once we controlled for settlement and other institutional factors.

The results of both pooled OLS regressions in Table 7 and the IV regressions in Table 8 are similar for the overall trade as well as for trade in the different sectors. For this reason we will focus on the discussion of the instrumental variables results only.¹⁶ First, the coefficients of the institutional impact of settlements in Table 8 indicate that worse institutions brought about by French settlements in their colonies were associated with a higher level of trade with France, and this is true for overall trade, in column (1), as well as for exports and imports in each of the sectors in columns (2) through (5). On the one hand, an institutional system lacking democracy and giving full authority to the governor would allow France to secure favorable markets for its products within its colonies, exporting food and manufactured goods its colonies. On the other hand, more authoritarian institutions (less constraints and less democracy) in French colonies allowed the exploitation of raw agricultural goods and raw material for industry. Actually, those results confirm why the French had a low incentive to establish institutions. In their settlements limited mainly to traders and military troops, their main role was to impose control in order to facilitate extractive policies. So in sum, among French colonies, those with better institutions traded less with France. Louis Faidherbe¹⁷ wrote: "In Algeria and Senegal the aim is the same, to dominate the country at as low cost as possible and through this get the highest advantages commerce." The function of the French officials was to maintain tranquility so that the natives could work and produce and so that they could recognize the advantages of our domination. The governors were entrusted with the safety and tranquility of the circles and instructed to make sure that the inhabitants of their territory demonstrated the fidelity and obedience that they owed France (Cohen, 1971). Our results also explain why post-independence trade between France and now its former colonies sharply shrank after independence (Head et al., 2010). This decrease can be attributed to the notion of "forced trade" developed through the system of authoritarian institutions that neither promoted the welfare of the colony nor exploited its comparative advantage.

Similarly, among British colonies, those with better institutions traded more with France. actually : those with better insitutions tended to trade more with France, as indicated in the results

¹⁶Some of the instrumental variable results are higher in magnitude than the POLS results. Please, refer to section 3 for a discussion on this difference.

¹⁷French general and colonial administrator who created the Senegalese Tirailleurs when he was governor of Senegal.

presented in Table 8. Whenever British settlements introduced "good institutions", trade between British colonies and France increased, boosting both French exports to British colonies and British colonies' exports of agricultural and industrial raw material to France. There are two possible, and maybe complementary, explanations. First, British colonies with better institutions were less captive of Britain trade and, therefore, freer to trade more with France. Second, the British favored free trade policies, and colonies with better institutions can take more advantage of it since higher institutional quality can reduce trade costs (Anderson & Marcoullier, 2002; Levchenko, 2007; Rauch, 1999). Overall, when the British induced representative institutions in their colonies, they promoted what the settlers wanted, and what they wanted was freedom and the ability to get rich by engaging in trade (Denoon, 1983).¹⁸ The British were credited with allowing the native to have a hand in government and to have a "hand-off" policy. (Betts, 1961). Chailley-Bert greatly admired the flexibility of the British colonial system, whose colonies were not rigidly categorized, were more timorous than the French ones, and were not insisting that their legal codes are applicable anywhere." (chailley-Bert, 1894).

With respect to the network effect of settlements, Table 8 also suggests that French colonies benefited most from French settlements through social networks (common language and number of years spent in the colony). The results in column 1 indicate that even among extractive policies, networking would boost overall trade. In particular, networking would increase extraction of agricultural raw material (column 4) and french exports of manufactured goods (column 3). Greater control induced by networking allowed the French to extract their colonies' raw materials and sell their manufactured products and food to those colonies. Marseilles (1984, p. 121) noted: "L'empire colonial, champs privilégié de l'exportation des capitaux français [...] un élément compensateur et un débouché stable, [...] un débouché essentiel de matières premières."

The network impact of European settlement, as expected, was only positively effective whenever France traded with its own colonies. This is so because a greater number of years spent by British and other European in their colonies tended to promote Great Britain, Portugal, Spain and Germany's trade with those colonies, but was less likely to promote France's trade with them. In addition, whenever a colony is not transacting in a common language with France, this would make exchange harder and would increase the transaction costs associated to the trade between France on one side and British and other colonies on the other. Actually looking again at table 6a, we would infer that

¹⁸The particular case of Australia and New Zealand is an intriguing example: settlers were namely ex-convicts who fought for the establishment of European-like institutions in order to protect their rights against the arbitrary power of landowners, who themselves, were the ex-jailors. They demanded jury trials, freedom from arbitrary arrest, and electoral representation (Acemoglu et al., 2001).

the negative sign between French common language and European Settlement in column 2 is namely driven by the correlation between British settlements and French common language (the more British settled in their colonies, the less networking those colonies developed with France). Our results support the aforementioned assertion that the networking impact of British and other settlements reduced overall trade with France.

It might be impossible to test empirically all of the ways in which European settlements affected trade patterns. However, we note that the residual impact of settlements in French colonies μ (and British and other colonies which is not reported here) is very low in magnitude for the overall trade and have no impact on some sectors. The channels we identified account for a significant amount of the dual impact of European settlement on French trade and help shed additional light on the settlement effect reported in this article.

6 Conclusion

How did the French, British, and other European settlements drive the French colonial trade patterns? Did the French use their political control and networks to transfer resources from the colony to themselves as well as secure favorable markets for their products? Did the British or other settlers introduce institutions in their colonies that favor mutually beneficial trade, enabling them to trade with France outside the circle of the empire? Which of France's products mainly attracted the extractive policies? Did British colonies export their comparative advantage? We provided some perspective on these questions by constructing a new database of more than 20,000 observations, relying on various primary historical sources containing information on the value of French sectoral imports and exports with each of its trading partners from 1880 to 1913. We found strong evidence that French exports and imports were quantitatively higher to colonies with more French settlements, with the highest magnitude for French exports of manufactured goods and imports of raw materials, emphasizing that the French sought territories to both extract resources and procure markets for their products. British and other settlements, on average, led to a reduction of French overall trade with their respective colonies. However, this effect is ambiguous for sectoral trade. The settlement effect appears to be robust to a variety of econometric specifications, including instrumental variable regressions and alternative instruments and year fixed-effects.

We suggest two channels through which European settlements might have affected French trade patterns: institutions and networking. Our empirical findings suggest that the low constraints on the French governors and the low democracy rates in the French colonies drove the colonizers to

perpetuate extractive policies, increasing the levels of extraction through trade. This study also demonstrates that British colonies developed better institutions than other European colonies and promoted better trade relations with France. Moreover, the different effects of social networks on different colonies help explain why the effects of European settlers on trade differ. French language and customs were especially prevalent within the French colonies, thereby reducing the transaction costs of trade and creating an extractive environment accounting for more than 100% of trade boosts. These special social network effects were no longer applicable when British or other Europeans settled; hence, we see that networking effect lessened French trade outside French colonies.

An interesting avenue for future research would be to empirically analyze how the initial endowments of colonies affected their institutional quality and economic performance. This is seen in the literature in terms of the curse of natural resources, which documents a negative relationship between specialization in natural resource production and institutional development (Ross, 1999). An earlier contributor to the literature, Barro (1999), showed that oil extraction hinders democracy. This historical evidence suggests that the institutional development depends on whether the elite or the merchants benefited from this trade (Acemoglu et al., 2005).

Understanding the relationship between colonization and trade as well as its long-term legacies is a complicated process as colonial strategy was hard to capture. As Mitchener and Weidenmeir (year) clearly stated, some colonies' exports were produced in very controlled plantation systems whereby colonists owned and controlled the land and capital that coffee, sugar, rubber or other crops were grown on and employed low-wage, local labor in the production of these commodities. Other tradable sectors of the same colony might have been left untouched. To assess the long-term impact of colonial trade, one should look at the institutional variation within and across colonies.

Table 1: French trade with colonies

<i>Colonies</i>	<i>Exports</i>			<i>Imports</i>			<i>Total</i>
	Manufactured Goods	Food	Raw material for industry	Manufactured Goods	Raw agricultural goods	Raw material for industry	
<i>French</i>	11%	10%	1%	1%	69%	8%	14,993,317.56
<i>British</i>	23%	8%	2%	0%	25%	42%	109,222.81
<i>Other</i>	76%	4%	1%	1%	8%	9%	494,316.28
<i>Former</i>	21%	9%	1%	1%	19%	48%	594,974.33
<i>Total</i>	14%	9%	1%	1%	65%	10%	16,191,830.97

Table 2: POLS: The Effect of Settlement on Trade

	(1)	(2)	(3)	(4)	(5)
	Exports			Imports	
	Total Trade	Food	Manufactured Goods	Raw agricultural goods	Raw material for industry
ES	0.09*	0.03***	0.04***	-0.04**	0.01
	(0.048)	(0.007)	(0.007)	(0.017)	(0.009)
ES in British Colonies	0.01	-0.03***	-0.04***	0.06***	0.01
	(0.053)	(0.008)	(0.009)	(0.019)	(0.010)
ES in other Colonies	-0.17***	-0.05***	-0.06***	0.03	-0.01
	(0.052)	(0.008)	(0.008)	(0.018)	(0.009)
ES in Former Colonies	0.05	-0.00	-0.02***	0.04**	0.03***
	(0.052)	(0.008)	(0.008)	(0.018)	(0.010)
French colonies	-8.48***	-0.46**	-1.64***	-4.49***	-0.45*
	(1.387)	(0.214)	(0.241)	(0.369)	(0.251)
British colonies	-1.12***	-1.75***	-2.62***	-3.54***	-1.27***
	(0.330)	(0.215)	(0.251)	(0.346)	(0.240)
Other Colonies	-2.56***	-3.38***	-4.42***	-5.13***	-2.49***
	(0.477)	(0.297)	(0.339)	(0.481)	(0.285)
Trade preference w/ Britain	-0.12	-0.52***	-0.99***	1.30***	0.06
	(0.944)	(0.150)	(0.174)	(0.214)	(0.145)
Gravity Standard	YES	YES	YES	YES	YES
Constant	81.14***	14.70***	17.28***	16.49***	8.16***
	(5.366)	(0.868)	(0.941)	(1.511)	(1.014)
YEAR FE	YES	YES	YES	YES	YES
Observations	1,981	2,130	2,124	2,086	2,124
R-squared	0.627	0.595	0.598	0.450	0.571

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: ES refer to European Settlement in 1900. The first variable is the reference variable not interacted with any colonial dummy but actually representing ES in the French colonies. Our standard gravity variables were not reported here. The results show that they are significant and report the correct sign. The larger the economy, the higher is the trade in all sectors and the further away is the country from France, the lower will its trade with France. Being landlocked and in times of war would reduce trade. Being part of a trade agreement, custom union or currency union with France would increase trade, but being part of trade agreement with British or other empire would reduce it. Favorable climate would also increase trade.

Table 3: Instrumental Variables

	Dependent Variable: European Settlement				
	(1)	(2)	(3)	(4)	(5)
Latitude	0.46***			0.68***	0.40***
	(0.044)			(0.040)	(0.052)
LSettler Mortality		-3.48***		-0.73*	
		(0.441)		(0.406)	
lpopden1500			-6.70***	-6.87***	-6.31***
			(0.322)	(0.281)	(0.331)
Constant	-16.43*	-28.61***	94.16***	-12.44	
	(8.862)	(9.175)	(8.275)	(8.596)	(12.902)
Observations	2,134	1,474	2,046	1,474	2,046
R-squared	0.501	0.702	0.585	0.827	0.604

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4: The Effect of Settlement on Trade: Instrumental Variable

	(1)	(2)	(3)	(4)	(5)
		Exports		Imports	
	Total Trade	Food	Manufactured Goods	Raw agricultural goods	Raw material for industry
ES	0.12* (0.066)	0.06*** (0.011)	0.05*** (0.013)	0.08*** (0.017)	-0.01 (0.012)
ES in British Colonies	-0.17*** (0.064)	-0.04*** (0.011)	-0.04*** (0.013)	-0.06*** (0.018)	0.03** (0.011)
ES in other Colonies	-0.73*** (0.082)	-0.14*** (0.014)	-0.15*** (0.016)	-0.17*** (0.022)	-0.01 (0.013)
ES in Former Colonies	-0.10 (0.067)	-0.03*** (0.011)	-0.05*** (0.013)	-0.07*** (0.018)	0.04*** (0.012)
French colonies	-16.56*** (1.649)	-1.75*** (0.248)	-3.19*** (0.300)	-6.55*** (0.402)	-1.32*** (0.305)
Gravity Standard	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES
Constant	96.84*** (6.195)	18.35*** (1.003)	21.95*** (1.249)	18.62*** (1.400)	7.94*** (1.122)
Observations	1,899	2,063	2,056	2,014	2,058
R-squared	0.655	0.620	0.616	0.503	0.558

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: The instrument used for the above regressions is population density in 1500. ES refer to European Settlement in 1900. The first variable is the reference variable not interacted with any colonial dummy but actually representing ES in the French colonies. Our standard gravity variables were not reported here.

Table 5: Robustness Checks of Effect of Settlement on Trade

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	<i>POLS</i>	<i>POLS full</i> <i>sample</i>	<i>POLS Land</i> <i>area</i>	<i>IV latitude</i>	<i>IV Settler</i> <i>mortality</i>	<i>IV Population</i> <i>density 1500</i>	<i>IV all</i> <i>instruments</i>
ES	0.09* (0.048)	0.07* (0.045)	0.006* (0.003)	0.90*** (0.068)	1.17*** (0.131)	0.12* (0.066)	0.42*** (0.052)
ES in British Colonies	0.01 (0.053)	0.05 (0.049)	-0.006 (0.27)	0.16** (0.069)	0.03 (0.076)	-0.17*** (0.064)	-0.21*** (0.054)
ES in Other colonies	-0.17*** (0.052)	-0.15*** (0.048)	-0.04*** (0.006)	-0.13 (0.097)	0.30* (0.164)	-0.73*** (0.082)	0.56*** (0.183)
ES in Former Colonies	0.05 (0.052)	0.06 (0.047)	0.03*** (0.004)	0.12** (0.060)	0.08 (0.081)	-0.10 (0.067)	-0.10* (0.056)
Constant	72.66*** (5.065)	82.21*** (4.790)	12.83*** (0.391)	58.62*** (4.480)	108.31*** (6.919)	80.28*** (5.709)	94.58*** (6.952)
All Controls	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES
Observations	1,981	2,815	2544	1,986	1,362	1,899	1,362
R-squared	0.627	0.60	0.425	0.667	0.71	0.655	0.694

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: ES refer to European Settlement in 1900. The first variable is the reference variable not interacted with any colonial dummy but actually representing the French colonies. The first column is the base regression for POLS. Column 2 and 3 report results with different data specifications. The Column 2 includes the full sample from year 1880-1913. Column 3 reports results for different weights values of trade. Trade data was disaggregated from the region level to the country level using arable land area as a weight instead of our base one which is the population. Column 5 6 and 7 use different instrumental variables. The results for the standard gravity variable are also significant and exert the correct sign for the various specifications. The bigger the size, the higher is the trade for all sectors and the further is the country from France, the less likely they will trade with France. Being landlocked and in times of war would reduce trade. Being part of a trade agreement, custom union or currency union with France would increase trade, but being part of trade agreement with British or other empire would reduce it. Favorable climate would also increase trade. Colonial dummies seem to exert a negative impact on trade. Those results indicate that that colonial status per se does not necessarily present a positive impact on French trade if settlement and trade policies are not accounted for.

Table 6: The channels of European Settlement

(a) The channels of Settlement

	European Settlement		
	(1)	(2)	(3)
Constraint on Executive	0.92** (0.438)		-2.12*** (0.532)
Democracy	4.42*** (0.359)		5.76*** (0.398)
Common Language		-5.22*** (0.920)	3.70*** (0.724)
Duration of colonization		0.06*** (0.003)	0.05*** (0.004)
Observations	2,068	2,134	2,068
R-squared	0.333	0.145	0.411

(b) Correlation Matrix

	Constraint on Executive	Democracy	Common Language	Duration of Colonization
<i>Constraint on Executive</i>	1			
<i>Democracy</i>	0.5801	1		
<i>Common language</i>	-0.1525	-0.2074	1	
<i>Duration of colonization</i>	0.3551	0.2026	-0.2262	1

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 7: POLS: The effects of channels of settlement on trade

	(1)	(2)	(3)	(4)	(5)
	Exports			Imports	
	Total Trade	Food	Manufactured goods	Raw agricultural goods	Raw material for industry
Institutional effect	-0.46*** (0.084)	-0.07*** (0.015)	-0.09*** (0.014)	-0.10*** (0.029)	-0.08*** (0.015)
Institutions effect in British colonies	0.66*** (0.089)	0.08*** (0.016)	0.12*** (0.015)	0.09*** (0.030)	0.12*** (0.016)
Institutions effect in Previous colonies	0.41*** (0.088)	0.06*** (0.016)	0.07*** (0.015)	0.07** (0.030)	0.09*** (0.016)
Institutions effect in Other colonies	-1.36*** (0.299)	-0.21*** (0.045)	-0.32*** (0.065)	-0.37*** (0.056)	0.08 (0.052)
Network effect	1.27*** (0.119)	0.24*** (0.018)	0.23*** (0.019)	0.34*** (0.032)	0.10*** (0.025)
Network effect in British colonies	-0.72*** (0.154)	-0.23*** (0.024)	-0.31*** (0.027)	0.03 (0.042)	0.02 (0.028)
Network effect in Previous colonies	-0.88*** (0.191)	-0.25*** (0.029)	-0.21*** (0.035)	-0.32*** (0.053)	-0.01 (0.040)
Network effect in Other colonies	-0.30** (0.129)	-0.12*** (0.021)	-0.11*** (0.021)	-0.12*** (0.037)	0.02 (0.025)
Residuals in French Colonies	-0.19*** (0.045)	-0.02** (0.007)	-0.00 (0.007)	-0.13*** (0.016)	-0.01 (0.009)
French colonies	-16.75*** (2.804)	-3.08*** (0.415)	-3.58*** (0.548)	-7.81*** (0.771)	-0.96 (0.609)
Control Variables	YES	YES	YES	YES	YES
Constant	115.41*** (5.537)	21.50*** (0.881)	21.88*** (1.007)	28.82*** (1.543)	11.07*** (1.195)
Year Fixed Effects	YES	YES	YES	YES	YES
Observations	1,916	2,064	2,058	2,020	2,058
R-Squared	0.745	0.707	0.701	0.615	0.631

Robust standard errors in parentheses

*** p < 0.01, ** p < 0.05, * p < 0.1

Note: The institutions effects and network effects represent the fitted values of the European settlements explained by either as shown in equation 5. The first variable of each represent the reference variable not interacted with any colonial dummy but actually representing the French colonies. The residual is the unexplained part of the settlements. The standard gravity variables not reported in this table show that they are significant and exert the correct sign.

Table 8: IV: The Effects of channels of settlement on Trade

	(1)	(2)	(3)	(4)	(5)
	Exports			Imports	
	Total Trade	Food	Manufactured goods	Raw agricultural goods	Raw material for industry
Institutions effect	-0.68*** (0.109)	-0.10*** (0.020)	-0.13*** (0.017)	-0.17*** (0.039)	-0.11*** (0.020)
Institutions effect in British colonies	0.96*** (0.117)	0.12*** (0.021)	0.17*** (0.020)	0.16*** (0.040)	0.16*** (0.021)
Institutions effect in Previous colonies	0.62*** (0.116)	0.08*** (0.021)	0.10*** (0.019)	0.12*** (0.041)	0.13*** (0.022)
Institutions effect in Other colonies	-2.62*** (0.513)	-0.42*** (0.075)	-0.62*** (0.112)	-0.65*** (0.093)	0.09 (0.088)
Network effect	1.35*** (0.109)	0.26*** (0.017)	0.25*** (0.018)	0.32*** (0.029)	0.13*** (0.023)
Network effect in British colonies	-0.62*** (0.157)	-0.22*** (0.025)	-0.31*** (0.028)	0.11*** (0.042)	0.02 (0.028)
Network effect in Previous colonies	-0.79*** (0.215)	-0.27*** (0.033)	-0.22*** (0.042)	-0.27*** (0.059)	-0.00 (0.047)
Network effect in Other colonies	-0.23* (0.126)	-0.12*** (0.020)	-0.11*** (0.021)	-0.07* (0.036)	0.01 (0.025)
Residuals in French Colonies	-0.17*** (0.044)	-0.01* (0.007)	0.00 (0.007)	-0.13*** (0.016)	-0.01 (0.009)
French Colonies	-16.50*** (3.246)	-3.44*** (0.493)	-3.81*** (0.663)	-7.46*** (0.884)	-0.71 (0.717)
All Controls					
Constant	114.69*** (5.672)	21.69*** (0.893)	21.94*** (1.053)	28.77*** (1.570)	10.61*** (1.234)
Year FE	yes	yes	yes	yes	yes
Observations	1,916	2,064	2,058	2,020	2,058
R-squared	0.749	0.713	0.704	0.616	0.634

Robust standard errors in parentheses

*** p < 0.01, ** p < 0.05, * p < 0.1

Note: The institutions effects and network effects represent the fitted values of the European settlements explained by either as shown in equation 5. The first variable of each represent the reference variable not interacted with any colonial dummy but actually representing the French colonies. The residual is the unexplained part of the settlements. The standard gravity variables not reported in this table show that they are significant and exert the correct sign.

References

- (1880-1920). Tableau décennal du commerce de la france.
- (1880-1922). Tableau général du commerce de la france.
- Acemoglu, D., Gallego, F. A., and Robinson, J. A. (2014). Institutions, human capital and development. NBER Working Papers 19933, National Bureau of Economic Research, Inc.
- Acemoglu, D., Johnson, S., and Robinson, J. (2005). The rise of europe: Atlantic trade, institutional change, and economic growth. *American Economic Review*, 95(3):546–579.
- Acemoglu, D., Johnson, S., and Robinson, J. A. (2001). The colonial origins of comparative development: An empirical investigation. *American Economic Review*, 91(5):1369–1401.
- Acemoglu, D., Johnson, S., and Robinson, J. A. (2002). Reversal of fortune: Geography and institutions in the making of the modern world income distribution. *The Quarterly Journal of Economics*, 117(4):1231–1294.
- Acemoglu, D., Johnson, S., and Robinson, J. A. (2011). Hither thou shalt come, but no further: Reply to “the colonial origins of comparative development: An empirical investigation: Comment”. NBER Working Papers 16966, National Bureau of Economic Research, Inc.
- Acemoglu, D., Johnson, S., and Robinson, J. A. (2012). The colonial origins of comparative development: An empirical investigation: Reply. *American Economic Review*, 102(6):3077–3110.
- Alam, M. S. (1994). Colonialism, decolonisation and growth rates: Theory and empirical evidence. *Cambridge Journal of Economics*, 18(3):235–57.
- Albouy, D. (2006). The colonial origins of comparative development: An investigation of the settler mortality data. Center for International and Development Economics Research, Working Paper Series qt8kt576x8, Center for International and Development Economics Research, Institute for Business and Economic Research, UC Berkeley.
- Alesina, A. (2002). The size of countries: Does it matter? Harvard Institute of Economic Research Working Papers 1975, Harvard - Institute of Economic Research.
- Bairoch, P. (1999). *Mythes et paradoxes de l’histoire économique*. Paris: edition de la decouverte.
- Barret, D. (1981). *World Christian Encyclopedia*. Oxford U. Press.

- Bertocchi, G. and Canova, F. (2002). Did colonization matter for growth?: An empirical exploration into the historical causes of africa's underdevelopment. *European Economic Review*, 46(10):1851–1871.
- Betts, R. F. (1961). *Assimilation and association in French colonial theory, 1890-1914*. Number 604 in Columbia studies in the social sciences, New York, Columbia University Press.
- Briant, A., Combes, P.-P., and Lafourcade, M. (2009). Product complexity, quality of institutions and the pro-trade effect of immigrants. PSE Working Papers halshs-00566772, HAL.
- Cain, P. J. and Hopkins, A. G. (1993). *British imperialism: Innovation and expansion 1688-1914*. New York: Longman.
- Canavire Bacarreza, G. J. and Ehrlich, L. (2006). The impact of migration on foreign trade: A developing country approach. MPRA Paper 1090, University Library of Munich, Germany.
- Chailley-Bert, J. (1894). *The colonisation of Indo-China*. London, A. Constable & Co.
- Cohen, W. B. (1971). *Rulers of empire: the French colonial service in Africa*. Hoover Institution Press.
- Coquery-Vidrovitch, C. (1991). Colonial history and decolonization: The french imperial case. *The European Journal of Development Research*, 3(2):28–43.
- Crosby, A. (1986). *Ecological imperialism: The biological expansion of Europe 900-1900*. New York: Cambridge University Press,.
- Crowder, M. (1968). *West Africa under colonial rule*. Chicago: Northwestern University Press.
- Denoon, D. (1983). *Settler Capitalism: The dynamics of dependent development in the southern hemisphere*. Oxford: Clarendon Press.
- Easterly, W. and Levine, R. (2012). The european origins of economic development. NBER Working Papers 18162, National Bureau of Economic Research, Inc.
- Egger, P., Ehrlich, M. V., and Nelson, D. R. (2011). Migration and trade. CESifo Working Paper Series 3467, CESifo Group Munich.
- Engerman, S. L. and Sokoloff, K. L. (1997). Factor endowments: Institutions, and differential paths of growth among new world economies: A view from economic historians of the united states. NBER Historical Working Papers 0066, National Bureau of Economic Research, Inc.

- Estevadeordal, A., Frantz, B., and Taylor, A. M. (2002). The rise and fall of world trade, 1870-1939. NBER Working Papers 9318, National Bureau of Economic Research, Inc.
- Ferguson, N. and Schularick, M. (2006). The empire effect: The determinants of country risk in the first age of globalization, 1880 1913. *The Journal of Economic History*, 66(02):283–312.
- Frankel, J. A. and Romer, D. (1999). Does trade cause growth? *American Economic Review*, 89(3):379–399.
- Frieden, J. A. (2006). *Global Capitalism: Its Fall and Rise in the Twentieth Century*. New York: W.W. Norton & Company.
- Giuliano, P. and Nunn, N. (2013). The transmission of democracy: From the village to the nation-state. *American Economic Review*, 103(3):86–92.
- Glaeser, E. L., Porta, R. L., de Silanes, F. L., and Shleifer, A. (2004). Do institutions cause growth? *Journal of Economic Growth*, 9(3):271–303.
- Groot, H. D., Linders, G.-J., Rietveld, P., and Subramanian, U. (2004). The institutional determinants of bilateral trade patterns. *Kyklos*, 57(1):103–123.
- Head, K., Mayer, T., and Ries, J. (2010). The erosion of colonial trade linkages after independence. *Journal of International Economics*, 81(1):1–14.
- Hughes, R. (1987). *The fatal shore*. London: Collins Harvill.
- Huillery, E. (2011). The impact of european settlement within french west africa: Did pre-colonial prosperous areas fall behind? *Journal of African Economies*, 20(2):263–311.
- Jones, P. (2013). History matters: New evidence on the long run impact of colonial rule on institutions. *Journal of Comparative Economics*, 41(1):181–200.
- Kleiman, E. (1976). Trade and the decline of colonialism. *The Economic Journal*, 86(343):459–480.
- Kwon, R. (2011). How the legacy of french colonization has shaped divergent levels of economic development in east asia: A time-series cross-national analysis. *The Sociological Quarterly*, 52:56–82.
- La Porta, R., Lopez-de Silanes, F., Shleifer, A., and Vishny, R. (1999). The Quality of Government. *Journal of Law, Economics and Organization*, 15(1):222–79.

- Lal, D. (2004). *Praise of Empires: Globalization and Order*. New York: Palgrave Macmillan.
- Landes, D. S. (1998). *The wealth and poverty of nations: Why some are so rich and some so poor*. New York: W.W. Norton & Co.
- Lange, M., Mahoney, J., and Vom Hau, M. (2006). Colonialism and development: A comparative analysis of spanish and british colonies. *American Journal of Sociology*, 111(5):1412–1462.
- Lavallée, E. and Lochard, J. (2012). Independence and trade: the specic effects of french colonialism. Open Access publications from Université Paris-Dauphine urn:hdl:123456789/9564, Université Paris-Dauphine.
- Linders, G.-J. (2004). The effect of domestic institutions on international trade flows: A sectoral analysis. ERSA conference papers ersa04p357, European Regional Science Association.
- Maddison, A. (2006). *The World Economy*. Paris: Development Center of the organization for Economic Cooperation and Development.
- Manning, P. (1982). *Slavery, colonialism, and economic growth in Dahomey, 1640-1980*. New York: Cambridge University Press.
- Marseille, J. (1984). *Empire Colonial et Capitalisme Francais. Histoire D'un divorce*. Paris: Albin Michel.
- Martin, P., Mayer, T., and Thoenig, M. (2008). Make trade not war? *Review of Economic Studies*, 75(3):865–900.
- Mitchell, B. (2007a). *International Historical Statistics: Africa, Asia and Oceania, 1750-2005*. Palgrave Macmillan.
- Mitchell, B. (2007b). *International Historical Statistics: The Americas, 1750-2005*. Palgrave Macmillan.
- Mitchener, K. J. and Weidenmier, M. (2008). Trade and empire. *The Economic Journal*, 118:1805–1834.
- Montesquieu, C. d. S. ([1748] 1989). *The spirit of the laws*. New York: Cambridge University Press.
- North, D., Summerhill, W., and Weingast, B. (1998). *Order Disorder and Economic change Latin America vs. North America*. Hoover Institution Publications, Stanford University.

- Nunn, N. (2008). The long-term effects of africa's slave trades. *The Quarterly Journal of Economics*, 123(1):139–176.
- Nunn, N. and Puga, D. (2007). Ruggedness: The blessing of bad geography in africa. Working Papers 2007-09, Instituto Madrileño de Estudios Avanzados (IMDEA) Ciencias Sociales.
- Nunn, N. and Qian, N. (2011). The potato's contribution to population and urbanization: Evidence from a historical experiment. *The Quarterly Journal of Economics*, 126(2):593–650.
- Nunn, N. and Trefler, D. (2013). Domestic institutions as a source of comparative advantage. NBER Working Papers 18851, National Bureau of Economic Research, Inc.
- Nunn, N. and Wantchekon, L. (2011). The slave trade and the origins of mistrust in africa. *American Economic Review*, 101(7):3221–52.
- Proudman, J. and Redding, S. (2000). Evolving patterns of international trade. *Review of International Economics*, 8(3):373–96.
- Rauch, J. E. (1999). Networks versus markets in international trade. *Journal of International Economics*, 48(1):7–35.
- Rose, A. (1999). One money, one market: Estimating the effect of common currencies on trade. Seminar Papers 678, Stockholm University, Institute for International Economic Studies.
- Ross, M. (1999). The political economy of the resource curse. *World Politics*, 51(2):297–322.
- Sandberg, H. M. and Seale, James L., J. (2012). The Impact of Historical and Regional Networks on Trade Volumes within the Western Hemisphere: A Gravity Analysis across Sectors. 2012 Annual Meeting, February 4-7, 2012, Birmingham, Alabama 120071, Southern Agricultural Economics Association.
- Sousa, J. D. and Lochard, J. (2012). Trade and colonial status. *Journal of African Economies*, 21(3):409–439.
- Terra, C. M. (2012). A política comercial brasileira. Working paper.
- Walmsley, T., Ahmed, S. A., and Parsons, C. (2005). The impact of liberalizing labor mobility in the pacific region. GTAP Working Papers 1874, Center for Global Trade Analysis, Department of Agricultural Economics, Purdue University.

Young, C. (1994). *The African colonial state in comparative perspective*. New Haven, CT: Yale University Press.

Appendix

Table A.1: The European Settlement as constructed from Huillery

District	Precolonial Empire	Current Country Name	European Settlement	District	Precolonial Empire	Current Country Name	European Settlement
Porto-Novo	Adjatche	benin	39.8	Nara	Kaarta	mali	22.5
Borgou	Borgu	benin	39.8	Nioro	Kaarta	mali	22.5
Abomey	Dahomey	benin	39.8	Sikasso	Kenedugu	mali	22.5
Allada	Dahomey	benin	39.8	Bandiagara	Macina	mali	22.5
Ouidah	Dahomey	benin	39.8	Gourma	Macina	mali	22.5
Tenkodogo	Tenkodogo	burkina faso	10.1	Mopti	Macina	mali	22.5
Ouagadougou	Wagadugu	burkina faso	10.1	Macina	Segu	mali	22.5
Ouahigouya	Yatenga	burkina faso	10.1	Segou	Segu	mali	22.5
Koudougou	Wagadugu	burkina faso	10.1	Adrar	Emirate of Adrar	mauritania	9.4
Bobodioulasso	Gwiriko	burkina faso	10.1	Brakna	Emirate of Brakna	mauritania	9.4
Kaya	Wagadugu	burkina faso	10.1	Trarza	Emirate of Trarza	mauritania	9.4
Dori	Liptako	burkina faso	10.1	Tagant	Emirate of Tagant	mauritania	9.4
Fada	Liptako	burkina faso	10.1	Goure	Kanem-Bornu	niger	7.4
Kindia	Fuuta Jaalo	guinea	70	NGuigmi	Kanem-Bornu	niger	7.4
Koumbia	Fuuta Jaalo	guinea	70	Dosso	Sokoto	niger	7.4
Labe	Fuuta Jaalo	guinea	70	Konny	Sokoto	niger	7.4
Mamou	Fuuta Jaalo	guinea	70	Tessaoua	Sokoto	niger	7.4
Pita	Fuuta Jaalo	guinea	70	Zinder	Sokoto	niger	7.4
Matam	Fuuta Toro	guinea	70	Haute-gambie	Bundu	senegal	179
Podor	Fuuta Toro	guinea	70	Baol	Bawol	senegal	179
Kankan	Samori	guinea	70	Thies	Bawol	senegal	179
Kissidougou	Samori	guinea	70	Louga	Jolof	senegal	179
Kouroussa	Samori	guinea	70	Tivaouane	Kajoor	senegal	179
Bondoukou	Abron	ivory coast	11.7	Sinesaloum	Siin Salum	senegal	179
Assinie	Sanwi	ivory coast	11.7	Dagana	Waalo	senegal	179

Table A.2: The country disaggregation data

Regions as defined in the Tableau du Commerce general de la France		Countries Segregated	Colonizer	Year of Colonization	Year of independence	
Europe	Possessions anglaises de la mediterranee	Gibraltar	GBR	1700	2012	
		Cyprus	GBR	1878	1960	
		Malta	GBR	1802	1964	
	Egypte	Egypt	GBR	1882	1922	
Afrique	Etats Barbaresques	Regence De Tripoli	Libya	ITA	1910	1947
		Tunisie	Tunisia	FRA	1881	1956
		Maroc	Morocco	FRA	1912	1956
			Western Sahara	ESP	1884	1965
			Mauritania	FRA	1895	1960
			Guinea Bissau	PRT	1800	1973
			Guinea	FRA	1890	1960
			Liberia	USA		1847
			Ivory Coast	FRA	1889	1960
			Togo	FRA	1918	1960
		Cote occidentale (Du maroc au cap de bonne esperance)	Benin	FRA	1892	1960
			Cameroon	FRA	1918	1960
			Equatorial Guinea	ESP	1844	1968
			Gabon	FRA	1885	1960
			Congo	FRA	1903	1960
			Dr Of Congo	BEL	1885	1960
			Namibia	DEU	1884	1949
	Angola		PRT	1500	1975	
	Sao Tome And Principe		PRT	1500	1975	
	Botswana		GBR	1885	1966	
Afrique	Partie Occidentale (Y Compris Le Gap De Bonne Esperance)	Sierra Leone	GBR	1808	1961	
		Gambia	GBR	1888	1965	
		Ghana	GBR	1874	1957	
		South Africa	GBR	1806	1910	
		Nigeria	GBR	1800	1914	
	Possessions Anglaises		Malawi	GBR	1891	1964
			Tanzania	GBR	1918	1961
			Kenya	GBR	1888	1963
		Partie Orientale (Y Compris L'ile Maurice)	Uganda	GBR	1894	1962
			Somalia	GBR	1884	1960

				Sudan	GBR	1899	1960	
				Mauritius	GBR	1835	1968	
				Zimbabwe	GBR	1888	1965	
				Zambia	GBR	1899	1964	
Afrique	Autres Pays (Y Compris L'ile De Madagascar)			Mali	FRA	1892	1960	
				Niger	FRA	1922	1960	
				Chad	FRA	1900	1960	
				Burkina Fasso	FRA	1897	1960	
				Ethiopia				
				Mozambique	PRT	1500	1975	
				Madagascar	FRA	1883	1960	
				Central African Republic	FRA	1889	1960	
Asie et Oceanie	Indes Comptoirs	Anglais		India	GBR	1857	1947	
				Myanmar	GBR	1857	1948	
				Pakistan	GBR	1857	1947	
				Bangladesh	GBR	1857	1971	
			Hollandais (Java Et Sumatra)		Indonesia	PRT	1600	1945
Asie et Oceanie	Philippines Chine Royaume De Siam Japon Australie		Philippines	ESP	1521	1898		
			China					
			Thailand					
			Japan					
			Australia	GBR	1750	1901		
	Autres Iles De L'oceanie		Fiji	GBR	1700	1970		
			Solomon Islands	GBR	1893	1978		
			New Zealand	GBR	1840	1907		
Amerique	Septentrionale	Etats Unis	Ocean Atlantique Ocean Pacifique	United States	GBR	1600	1776	
				Mexique	Mexico	ESP	1650	1810
Amerique	Centrale	Guatemala- CostaRica-Honduras		Guatemala	ESP	1519	1821	
				Costa Rica	ESP	1522	1821	
				Honduras	ESP	1520	1821	
			Nouvelle Grenade	Colombia	ESP	1525	1808	
Amerique	Meridionale	Cote est	Venezuela Brezil Uruguay (MonteVideo) Republique Argentine	Venezuela	ESP	1490	1821	
				Brazil	PRT	1500	1822	
				Uruguay	ESP	1500	1821	
				Argentina	ESP	1500	1816	

		Equateur	Ecuador	ESP	1500	1822
		Perou	Peru	ESP	1500	1821
	cote ouest	Bolivie	Bolivia	ESP	1500	1825
		Chili	Chile	ESP	1500	1810
	colonies anglaises	Canada	Canada	GBR	1763	1867
			Barbados	GBR	1650	1966
			Bahamas	GBR	1650	1973
			Jamaica	GBR	1650	1962
			Guyana	GBR	1700	1966
	Autres Y Compris		British Virgin	GBR	1672	1967
	Les Antilles		Islands			
			Dominica	GBR	1805	1978
Amerique	Antilles et possessions Europeennes		Grenada	GBR	1763	1974
			Saint Lucia	GBR	1750	1979
			Trinidad And	GBR	1750	1962
			Tobago			
			Antigua Et	GBR	1632	1981
			Barbuda			
	Haiti Et Republique		Haiti	FRA	1697	1804
	Dominicaine		Dominican	ESP	1500	1865
			Republic			
	Colonies espagnoles	Cuba-Porto Ricco	Cuba	ESP	1492	1898
			Puerto Rico	ESP	1493	1898
		Saint Thomas	Virgin Islands	DNK	1600	1917
			(Us)			
	Colonies		Aruba	PRT	1600	1986
	Hollandaises		Suriname	PRT	1683	1975
	Algerie		Algeria	FRA	1830	1962
	Tunisie		Tunisia	FRA	1881	1956
	Maroc		Morocco	FRA	1912	1956
	Congo		Congo	FRA	1903	1960
	Senegal		Senegal	FRA	1850	1960
	Etablissement		Guinea	FRA	1890	1960
	Francais De La Cote					
	Occidental D'afrique					
			Central African	FRA	1889	1960
			Republic			
			Gabon	FRA	1885	1960
			Ivory Coast	FRA	1889	1960
	Colonies Francaises		Benin	FRA	1892	1960

		Mali	FRA	1892	1960	
		Mauritania	FRA	1895	1960	
		Burkina Fasso	FRA	1897	1960	
		Chad	FRA	1900	1960	
		Togo	FRA	1918	1960	
		Cameroon	FRA	1918	1960	
		Madagascar Et Dependences	Madagascar	FRA	1883	1960
		Mayotte	Madagascar	FRA	1883	1960
		Noisy-Be	Madagascar	FRA	1883	1960
		Ile De La Reunion	Reunion	FRA	1642	2012
		Cote Des Somalis	Djibouti	FRA	1896	1977
		Etablissement Francaise De L'inde	Laos	FRA	1880	1949
			Cambodia	FRA	1863	1953
		Indo-chine Francaise	Vietnam	FRA	1859	1945
	Etablissements Francais de l' oceanie	Nouvelle Caledonie	New Caledonia	FRA	1853	2012
		Autres Etablissements	French Polynesia	FRA	1842	2012
			New Hebrides (Vanuatu)	FRA	1880	1980
		Guyane Francaise	French Guiana	FRA	1814	2012
		Martinique	Martinique	FRA	1685	2012
		Guadeloupe	Guadeloupe	FRA	1635	2012
		Saint Pierre Et Miquelon Et Grande Peche	Saint Pierre Et Miquelon	FRA	1814	2012