

Decolonization: the Role of Changing World Factor Endowments

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Abstract

European colonialism had two key economic aspects: the extraction of colonial wealth by colonizers, and the relevance of trade for colonial economies. I build a simple model of decolonization which puts these two elements at centre stage. By controlling policy in the colony, the mother country can appropriate part of her wealth; the colony, however, can stage a successful revolution at a stochastic cost. I incorporate this mechanism in a three-country, Heckscher-Ohlin trade model where countries (the mother country, the colony and a third independent country) can decide whether to trade with each other, and the mother country can threaten to stop trading with the colony if she rebels. Thus, the attractiveness of revolution and the sustainability of colonial power come to depend on the capacity of the colony to access international markets against the will of the mother country which, in turn, depends on the distribution of world factor endowments. I present historical evidence in support of my theory. My results have important implications for the debate on the economic legacy of colonialism.

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1 Introduction

One of the striking political and economic changes of the twentieth century was the almost complete elimination of colonial power. This has naturally precipitated a large debate about the legacy of colonialism for contemporary development experiences. This has been invigorated recently among economists by the empirical study by Acemoglu, Johnson and Robinson (2001) linking settler mortality to current prosperity.

To understand the legacy of colonialism, it is important to understand the forces that led to its rise and decline. This paper studies one central aspect of this - the influence of trade. The paper begins from the observation that trade between colonial states and colonizers was at the centre of colonial relationships and a source of benefit to the colonial power. But this must be seen in the context of a global equilibrium that shapes alternative sources of trading opportunities open to the colony, which, in turn, shape the incentive to rebel and hence the sustainability of colonial power. The paper sets up a model to make these ideas precise and then relates it to the experience of decolonization in some parts of the world. It argues that the economic forces (mainly factor endowments) that shaped the pattern of trade are key to understanding the historical experience.

One characteristic that, with varying intensity, was common to all European empires, was the importance of trade for the colonial economies. Soon after conquest, colonies were encouraged (or forced) to re-orientate their economy toward the production of tradable goods that could be consumed in the mother country, or sold on international markets.¹

¹In some cases (e.g the Peruvian and Mexican gold and silver), these goods has been produced before colonization. In others (e.g. the Azores' sugar) production was implanted by colonizers.

Over time, this trade became a source of prosperity for important colonial groups (both of European and of indigenous descent), who owned some of the export-generating assets and consumed manufactured goods produced in Europe. At the same time, it was a key source of gain for the mother country, who appropriated part of the value of colonial produce through a series of taxes and restrictions.² This redistribution of the gains from trade was often at the heart of the colonies' discontent with colonial power.

Trade did not only determine the wealth of colonies, however, but also the cost for them of a conflictual separation from their empire. For their size and economic importance, colonial empires were key export and import markets for individual colonies. Since it could be expected that a conflictual separation would compromise access to these markets (because of sanctions, or the deterioration of colonial trade links), revolution had a cost in terms of the worse terms of trade that a colony could hope to obtain after becoming independent. This terms-of-trade cost of revolution affected the balance of power between the colony and the mother country, and thus the sustainability of colonial power. In this paper, I study how the terms-of-trade cost of revolution depended on contemporary trade patterns, and on the economic fundamentals that determined them. In particular, I investigate the impact of changes in a key source of comparative advantage in the history of European colonialism: the distribution of world factor endowments.

I construct a model that relates the distribution of world factor endowments to the balance of power between a colony and her mother country. This is a simple 3-country,

²In many colonies, residents of the mother country also owned a sizable portion of the export-generating colonial assets.

2-good, 2-factor Heckscher-Ohlin model, where the colony sells a land-intensive good to the mother country in exchange for a capital-intensive good, and there is a third country who may be a net exporter of either goods depending on the distribution of factor endowments. Under colonialism, the mother country controls policy in the colony. This allows her to extract some of the colony's gains from trade, being only constrained in this by the capacity of the colony to stage a successful revolution at a stochastic cost. A deterministic component of this cost is given by a deterioration in the colony's terms of trade as she exits the empire and the mother country enacts sanctions against her. Crucially, this terms-of-trade cost of revolution depends on the trade policy adopted by the third country after sanctions have been imposed. I solve for the trade equilibrium after sanctions, and show how the role of the third country, the balance of power between the colony and the mother country, and the sustainability of colonialism, all depend on the distribution of world factor endowments. The model relates the coming of decolonization to a key source of variation in the economic fundamentals that shaped colonial trade patterns. However, the mechanism so highlighted is much more general than the specific factor endowment-based example, in that it holds for any possible source of comparative advantage.

I present a series of case studies to establish whether decolonization and the distribution of world factor endowments were linked as predicted by the model. I begin by re-considering the causal link between the Seven Years War (1756-1763) and the American Revolution of 1776. I then study the decadence of the colonial power of Spain in 1590-1750, its temporary revival in 1750-1810, and its final collapse after 1810. Finally, I study the process which led Britain to concede self-government to her settler colonies of Canada and Australia in

mid 19th century. In all cases, I find substantial evidence in favour of my argument.

My paper differs from previous work on decolonization in that it addresses unanswered questions using an original, formal framework. A vast, non-formalized literature in history, political science and economics can be distilled into three main views. Some authors emphasize the role of colonial nationalist movements, who gained strength because of the harsh treatment received from colonial powers (Lynch, 1973; McMinn, 1979; Grimal, 1978). Other authors point to factors that made colonialism unattractive to key interest groups within the colonial powers (Schuyler, 1945; Holland, 1985; Galbraith, 1994). Finally, some authors emphasize the role of international factors, such as the supportive activity of external countries³ or the rise of the Cold War (Eccles, 1972; Kaufmann, 1951; McIntyre, 1977). This literature does not normally study economic incentives explicitly, or does not describe them in a formal way. Two papers in economics (Grossman and Iygun, 1995 and 1997) have attempted to fill this gap.⁴ Neither of these papers considers the role of trade in shaping the incentives to decolonization. By providing the first formal theory of this, I address two key, and yet largely unanswered questions: was there a systematic relation between the strength of a colony's nationalist sentiment and her position in the world economy? And what economic factors underpinned the international support for decolonization?

The paper is also related to several strands of literature in economics, which can be

³Often-cited is the role of France in facilitating the American Revolution, or that of Britain and the US in facilitating the collapse of Spanish and Portuguese colonialism. See Section 5 for further details.

⁴Grossman and Iygun (1995) study colonial investment as a function of the technology of production and rebellion, deriving a set of conditions under which it is optimal for a colonizer to abandon the colony. Grossman and Iygun (1997) argue that population growth in Africa and Southeastern Asia increased the private returns to rebellion in these colonies, thus leading to 20th century decolonization.

grouped based on whether they deal with colonialism explicitly or not. In the latter group, the paper is very related to the literature providing microfoundations for the WTO based on terms-of-trade arguments (Johnson, 1954; Bagwell and Staiger, 1999 and 2004). As in this literature, I focus on the terms-of-trade motivation for trade policy as a key factor shaping international relations. Next, the paper is related to the empirical literature on the relation between trade and war, and in particular to Martin *et Al.* (2007). This paper finds that bilateral trade decreases the probability of war between pairs of countries, while multilateral trade increases it. While my predictions are in line with these results, the two papers differ in two key respects. First, trade disruption happens mechanically in the model of Martin *et Al.* (2007), while it is the result of strategic interaction on trade policy in my model. Second, Martin *et Al.* (2007) look at war between independent countries, while I look at independence in the specific context of colonialism. As a result, the historical focus of the two papers is quite different. Finally, the paper is related to the literature on the endogenous size of nations (Alesina and Spolaore, 1997 and 2003). A key mechanism in these papers - that globalization reduces local economic dependence, increasing the equilibrium number of countries - is also rather close to my results. My paper innovates on this literature, however, in that it explicitly models the independence process in the context of a general equilibrium trade model.

Among the recent work on colonialism, the paper is loosely related to the empirical literature on the legacy of colonialism for post-colonial trade patterns. A key paper in this literature is Head *et Al.* (2010), who look at the impact of 20th century decolonization on the trade pattern of colonies. Because of scarcity of data on *pre-decolonization* trade,

the authors mostly look at the evolution of *post*-decolonization trade. This makes this paper only marginally related to my theory, that does not have explicit predictions for the impact of peaceful decolonization on subsequent trade patterns.⁵ Finally, because of the implications of the theory - which I examine in the conclusion - the paper is very related to the recent literature on the economic legacy of colonialism, and in particular to the few papers that have looked at trade explicitly: Acemoglu *et Al.* (2005) and Nunn (2008).

The paper is structured as follows. The two building blocks of the model are separately described in Sections 2 (trade model) and 3 (political model). Section 4 puts the two building blocks together, and solves for the equilibrium. Section 5 presents the historical evidence. Section 6 draws some implications of the analysis, and concludes.

2 Trade model

The trade model is a simple 3-country, 2-good, 2-factor Heckscher-Ohlin model. There are three countries, H , M and M . Country H is a colony, country M is her mother country or “metropole”, and country M is a foreign country external to the colonial relation.⁶

Two goods (x and y) are produced using land and capital (L and K), and are then traded and consumed. For simplicity, I assume that production technologies are linear,

⁵The relation between my predictions and the results in Head *et Al.* (2010) is further explored below.

⁶ M should be thought of as the mother country *and the rest of her empire*. As for M , I will equivalently refer to this as to a third country or to *the rest of the world*.

and equal across countries:⁷

$$x = L \tag{1}$$

$$y = K \tag{2}$$

National factor endowments are:

$$L^H = 1 \quad K^H = \bar{K}$$

$$L^F = 1 \quad K^F = \bar{K} (1 + \delta)$$

$$L^M = 1 \quad K^M = \bar{K} (1 + \kappa)$$

where $\kappa, \delta > 0$ and $\delta < 2\kappa$. In words, I am assuming that M and F are more capital intensive than H , and that F is not too much capital intensive relative to M . As will become clear below, the latter assumption rules out that the colony and the mother country are in competition for selling the same land-intensive good to the rest of the world, a case that does not seem to be historically important.⁸

Each country is inhabited by a continuum of agents with unit mass. All citizens own exactly one unit of land, and citizens in each country own an equal share of capital.

⁷The assumption of linear technologies brings two strictly-related simplifications to the analysis. First, it dispenses with considering factor re-allocation, since each country's PPF is a single point. Second, it ensures that factor price equalization obtains, and we can then solve for the integrated trade equilibrium. None of these simplifications is strictly needed: all that matters is the qualitative impact of the terms of trade on national welfare, and this is the same with any standard neoclassical technology.

⁸I comment below on how my results change when $\delta \geq 2\kappa$.

Preferences are equal across countries, and are described by the utility function:

$$u^{iJ} = u(x^{iJ}, y^{iJ}) = (x^{iJ})^{\frac{1}{2}} (y^{iJ})^{\frac{1}{2}} \quad (3)$$

where iJ denotes citizen i in country J . Given that citizens in each country have homogeneous preferences and endowments, they all have the same demand schedule: we can thus drop the superscript i from now on. By working out national uncompensated demands and plugging back into (3), it is straightforward to find national indirect utility:

$$v^J(p^J) = \frac{p^J + K^J}{2(p^J)^{\frac{1}{2}}} \quad (4)$$

where I have used y as the numeraire and called p the price of good x . To simplify the notation, I write indirect utility as a function of p only (from now on, “the price”).

Goods x and y can be thought of as final goods. For example, the colonial US exported foodstuff and tobacco to the British Empire and to the rest of the world, obtaining manufactured goods in return. Similarly, the Spanish American colonies exchanged agricultural commodities for European manufactures. Alternatively, x and y could be thought of as intermediate goods. In this case, equation (3) would describe the production of a final good, whose consumption increases utility linearly. This would be the case of colonial exports such as indigo (US South), wool (Australia), or timber (British Canada), which were used in the production of final goods together with European capital-intensive intermediates.

2.1 Autarchy equilibrium

Since the marginal rate of (technical) substitution of (3) is simply $\frac{y}{x}$ and production technologies are linear, factor market clearing requires that, in autarchy, the $MR(T)S$ equals relative factor endowments. Because agents set their $MR(T)S$ equal to the price ratio when they behave optimally, the equilibrium autarchy price must then be:

$$p_A^J = K^J \quad (5)$$

where K^J is the relative factor endowment of country J , since $L^J = 1 \forall J$. Using equation 4, it is easy to check that national indirect utility in country J reaches a global minimum at $p = p_A^J$, and is monotonically increasing (decreasing) in p for $p > p_A^J$ ($p < p_A^J$). This is consistent with standard theory of the gains from trade: countries always benefit from opening up to trade; furthermore, a net exporter of good x (that is, a country for which $p > p_A^J$) benefits from an increase in p , while a net importer (a country for which $p < p_A^J$) benefits from a decrease.

2.2 Trade equilibrium

In what follows, I assume that trade policy is a stark decision as to whether a country should be “open” or “closed” to each of the other countries. Besides a case where all countries remain in autarchy, there are then four possible cases: three in which two countries trade and the third country remains in autarchy, and one in which all countries trade. I use the notation $\{H, M, \cdot\}$, $\{H, \cdot, F\}$, $\{\cdot, M, F\}$ and $\{H, M, F\}$ to denote the four cases.

The assumption of linear technologies enables us to find the equilibrium price within a given free trade block by solving for the integrated equilibrium, i.e. by finding the autarchy equilibrium price of a single country whose endowments are equal to the sum of the endowments of the countries who belong to the block. Take for example the case $\{H, M, \cdot\}$. Following a similar logic as in finding the autarchy price of J , we obtain:

$$\begin{aligned} p_{\{H, M, \cdot\}}^H &= \bar{K} \left(1 + \frac{\kappa}{2}\right) \\ p_{\{H, M, \cdot\}}^M &= \bar{K} \left(1 + \frac{\kappa}{2}\right) \\ p_{\{H, M, \cdot\}}^F &= p_A^F \end{aligned} \tag{6}$$

where $p_{\{H, M, \cdot\}}^J$ denotes the price faced by country J when only H and M trade, and $\bar{K} \left(1 + \frac{\kappa}{2}\right)$ is the relative factor endowments of a free trade block composed of H and M . Equilibrium prices in the other three cases can be found similarly:

$$\begin{aligned} p_{\{\cdot, M, F\}}^H &= p_A^H & p_{\{H, \cdot, F\}}^H &= \bar{K} \left(1 + \frac{\delta}{2}\right) & p_{\{H, M, F\}}^H &= \bar{K} \left(1 + \frac{\kappa+\delta}{3}\right) \\ p_{\{\cdot, M, F\}}^M &= \bar{K} \left(1 + \frac{\kappa+\delta}{2}\right) & p_{\{H, \cdot, F\}}^M &= p_A^M & p_{\{H, M, F\}}^M &= \bar{K} \left(1 + \frac{\kappa+\delta}{3}\right) \\ p_{\{\cdot, M, F\}}^F &= \bar{K} \left(1 + \frac{\kappa+\delta}{2}\right) & p_{\{H, \cdot, F\}}^F &= \bar{K} \left(1 + \frac{\delta}{2}\right) & p_{\{H, M, F\}}^F &= \bar{K} \left(1 + \frac{\kappa+\delta}{3}\right) \end{aligned} \tag{7}$$

The preferences of each country over alternative trade outcomes depend on the country's position in the world economy, and on the distribution of world factor endowments (captured by κ and δ). Table 1 reports the trade outcomes that maximize national welfare in each country, fixing κ at any positive value and allowing for all possible values of δ .⁹

⁹For values of δ such that a country is indifferent between two trade outcomes (e.g., this is the case for

Table 1: National Welfare-Maximizing Trade Outcomes

$\delta \in$	H 's optimum	M 's optimum	F 's optimum
$[0, \delta^*)$	$\{H, M, .\}$	$\{H, M, F\}$	$\{., M, F\}$
$[\delta^*, \frac{\kappa}{2})$	$\{H, M, .\}$	$\{H, M, F\}$	$\{H, ., F\}$
$[\frac{\kappa}{2}, \kappa)$	$\{H, M, F\}$	$\{H, M, .\}$	$\{H, ., F\}$
$[\kappa, 2\kappa)$	$\{H, M, F\}$	$\{H, M, .\}$	$\{H, ., F\}$

The preferences described in the table have an intuitive justification.¹⁰ When δ is low, the third country (F) is a competitor of the colony (H) in selling the land-intensive good to the mother country (M). Thus, while H and F prefer to trade with M exclusively, M 's national welfare is maximum when trading with both. When δ is high, F is a competitor of M in selling the capital-intensive good to H . Thus, both would like to trade with the colony exclusively, while H strictly prefers to trade with both. The logic underlying these preferences is similar to that underlying the standard optimal tariff argument: while global free trade is the joint optimum, trade restrictions may be welfare maximizing for individual countries, as they may improve their terms of trade.

3 Political Model

Colonialism is modelled in a very simple way: while M and F set their own policy freely, policy in H is set by M .¹¹ In other words, to use the terminology introduced by Acemoglu

all countries when $\delta = \frac{\kappa}{2}$), I report the trade outcome that maximizes the country's welfare to the right of that value (that is for $\delta = \frac{\kappa}{2} + \epsilon$).

¹⁰The threshold δ^* is defined as $\delta^* = \arg[v^F(p_{\{H, ., F\}}^F) = v^F(p_{\{., M, F\}}^F)]$. It can be shown that $\delta^* \in (0, \frac{\kappa}{2})$ with these functional forms. None of the results hinges on this fact, however, while they do hinge on the (general) fact that $\delta^* \in (0, \kappa)$.

¹¹Throughout the paper, I will mostly talk about H , M and F as if they were individual agents. This is equivalent to assuming that countries are governed by a citizen selected at random within the population.

and Robinson (2006), M has *de jure* political power in H . The initial political state of the model (S) is colonialism.

3.1 Policy

There are two policy instruments: *trade policy*, which is set in all countries, and a *transfer from H to M* , which captures colonial extraction and is therefore specific to H .

Trade policy is a set of 0-1 decisions which specify whether a country is closed or open to each of the other two countries. It is described by a 3x3 matrix τ , whose element τ_J^I is equal to 1 if I is willing to trade with J , zero otherwise (of course, $\tau_J^J = 1 \forall J$). Trade between country I and country J takes place if and only if $\tau_J^I = \tau_I^J = 1$. Mapping from τ to the trade equilibrium, we can express equilibrium prices as functions of τ , κ and δ only.

The gains from trade for country J can then be written as:

$$\Pi^J(\tau|\kappa, \delta) = v^J [p^J(\tau|\kappa, \delta)] - v_A^J$$

where $v_A^J \equiv v^J(p_A^J)$ is autarchy utility.

The letter T will denote the transfer from H to M . For simplicity, I assume that this transfer is non distortionary. Because H and M have the same indirect utility function, and because this is linear in income, we can thus think of T as a transfer of indirect utility from H to M , and can add it linearly to the payoff functions. To capture the fact that it is not optimal for M to reduce H into starvation, I assume that there is a minimum level of utility that H must be left with. I denote this by u , and assume for simplicity that

$$u < v_A^H.$$

Before moving on, it is useful to reflect on whether this is a satisfactory model of colonialism. Two issues seem to be particularly important. First, my assumption that voluntary trade was an important source of gains for colonial citizens seems to be in contrast with a conception of colonialism as “plundering”. This contrast is more apparent than real, however. While plundering was important in the early years of many colonies - as some of the colonial assets that could generate tradable goods were appropriated to groups of European invaders - the system that was subsequently set up saw many groups of *colonial* residents becoming the legal owners of trade-oriented colonial assets. Even if of European origins, these groups often came to see themselves as colonial citizens,¹² and had substantial interest in realizing the full value of their assets by engaging in trade with Europe. Crucially, these groups had a key role in the decolonization process.¹³

Second, it may not be entirely evident how a simple transfer from H to M can capture the essence of colonial extraction. While in the so-called “pure” settler colonies (or in non-settler colonies where the original political structure was left in place), the perceived burden of colonialism was, in fact, associated with some sort of imperial taxation,¹⁴ colonies where

¹²There were exceptions to this. For example, the European settlers in Algeria, Kenya and the West Indies maintained strong connections with the mother country, and often went back to Europe for their retirement.

¹³Examples of colonial groups involved in international trade included the majority of the colonial population in the so-called British “pure” settler colonies (the US North, Canada, Australia), and the elite of European origins that controlled the economy of colonial Latin America, the West Indies, and various other British and French settler colonies in Africa. In colonies where productive assets were left in the hands of the locals (such as India, or some British and French African colonies) these groups were, instead, mostly indigenous.

¹⁴The tools used to extract wealth from colonies can be grouped into three broad categories: transfers from the colonial treasury to the imperial treasury, the allocation of colonial public revenues to specific public goods, and monopolies or other restrictions on investment, production and trade. See Section 5 for more details.

the mother country implanted a new elitist system of government experienced extraction at two distinct levels. On one hand, the new colonial elite imposed land appropriation, taxes, or institutions of forced labor on the colonial masses (often composed of imported slaves). On the other hand, all colonial citizens (but the local elite in particular) were subject to taxes imposed by their mother country. What T captures is really the tax payed by colonial citizens to the mother country. Thus, by assuming that the first type of extraction does not change upon decolonization, I am introducing an important simplification for the second group of colonies. This seems reasonable, however, in light of the fact that the domestic political economy of many of these colonies changed very little upon decolonization (think for example of Spanish America, or the US South).

3.2 Independence, Revolution and Sanctions

Before choosing policy, M decides whether to stick to colonialism or to concede *independence*. If it concedes independence, control of policy is transferred to H at no cost for either country. If it sticks to colonialism, H can stage a *revolution*. This also transfers control of policy from M to H , but generates two costs to H . The first is a stochastic cost μ , distributed over $[0, \infty)$. This cost is meant to capture the vast set of factors (uncorrelated with current trade conditions) that determine the colony's military power relative to the mother country.¹⁵ The second is a possible terms-of-trade cost, since I assume that when a

¹⁵Examples include the existence of a successful leader or ideology that helps the colonists overcome their collective action problem; or the occurrence of external events that weaken the capacity of the mother country to react to a revolution. This is similar to what Acemoglu and Robinson (2006) call the *de facto* political power of the citizens.

revolution is staged the mother country refuses to trade with the colony any longer (thus, $\tau_M^H = 0$).¹⁶ To keep the model simple, I assume this to be an automatic punishment rule, which generates a threat that is perfectly credible ex-ante. In reduced form, this captures the optimal behavior of a mother country which, owning multiple colonies, is happy to incur the cost of punishing a colony in order to preserve a reputation as a hardliner with the others.¹⁷ This large-empire case fits well the case of the most important European colonizers (Britain, France, Portugal and Spain). Furthermore, the case of the few colonies that staged individual revolutions (see Figure 2 for the US) confirms that sanctions were indeed enacted after conflictual separations, at least for some time.¹⁸

For H , the advantages of breaking free from colonialism (whether through independence or through revolution) are two. First, it obtains control of policy. Second, it obtains an exogenous benefit B , which I assume to be strictly positive and non contractible. This is equivalent to assuming that colonialism is welfare decreasing, and that the two parties cannot contract their way out of it. One natural interpretation of this is that there are efficiency losses associated with the centralization of policy in the hands of the imperial government, or of its frequently turned-over colonial administrators.¹⁹ Alternatively, decol-

¹⁶With a continuous trade policy, the punishment could consist in the erection of a discriminatory tariff (or in the elimination of an existing preferential tariff). This would not affect qualitatively the way in which the terms-of-trade cost of revolution depends on the distribution of world factor endowments.

¹⁷An interesting implication of this is that the credibility of sanctions may decrease as the size of the empire decreases, as the value of reputation decreases. This could help explaining why decolonization happened in “waves” (see Section 5).

¹⁸Alternative explanations for the trade disruption following to revolution are a protracted military conflict, or the possibility that business networks and institutions enhancing trade within colonial empires erode fast in the case of a conflictual separation. All three interpretations are consistent with the result on 20th century decolonization by Head *et Al.* (2010), according to which trade between colonies and the mother country declined much more rapidly after a conflictual separation.

¹⁹Even in colonies where representative institutions were in place, most of the important decisions were in the hands of the governor or of the colonial office (see Section 5.3 for the British case).

onization could be associated with psychological benefits from achieving freedom.²⁰ As for the no-bargaining assumption, a natural interpretation is that colonies could not commit to making payments after colonialism was dismantled, and could not therefore compensate the mother country for the loss of future gains from colonialism.²¹ Notice that the asymmetry in the commitment capacity of H and M - H cannot commit to paying for its independence, while M can commit to enacting sanctions - is fully grounded in the different importance of reputation for these two countries.

3.3 Timing

I denote the three possible political states (colonialism, independence and revolution) by the notation $S = C, I, R$. The timing of the game is then:

1. Nature chooses μ ;
2. M chooses whether to stick to colonialism or to grant independence;
3. τ and T are simultaneously set: under colonialism M sets τ^M , τ^H and T ; under independence, instead, τ^H and T are set by H ;
4. If M has granted independence, nothing happens at this stage. If the political state is still colonialism, H decides whether to stage a revolution or not;

²⁰Notice that what is normally identified as a key benefit of colonialism for colonies - the military protection obtained by the mother country (e.g. Thomas, 1965, p. 633) - does not need to make colonialism welfare increasing if it can still be enjoyed by colonies after decolonization. Indeed, many former colonies were able to retain the military protection of their former mother country, perhaps in exchange for a dependent foreign policy stance.

²¹This interpretation further requires to assume that budget or credit constraints prevented colonies from paying the present discounted value of the mother country's future gains.

5. If H has staged a revolution, policy is reset with τ_M^H automatically set at 0; otherwise, nothing happens at this stage;
6. Production, trade and consumption take place; all payoffs are realized.

4 Equilibrium

Let us proceed to find the equilibrium of the model by solving backward:

Date 6. Final payoffs depend on the policy choices made in dates 3 and 5, and on world factor endowments. Call $V^J(\tau, T|\kappa, \delta)$ the final payoff of citizens in country J :

$$V^H(\tau, T|\kappa, \delta) = v_A^H + \Pi^H(\tau|\kappa, \delta) - A + \phi B + \theta(B - \mu) \quad (8)$$

$$V^M(\tau, T|\kappa, \delta) = v_A^M + \Pi^M(\tau|\kappa, \delta) + A \quad (9)$$

$$V^F(\tau, T|\kappa, \delta) = v_A^F + \Pi^F(\tau|\kappa, \delta) \quad (10)$$

Where $\phi(\theta)$ is an indicator variable that takes value 1 if the political state is independence (revolution), 0 otherwise.

Date 5. If H has staged a revolution, policy is reset under the constraint that $\tau_M^H = 0$. The equilibrium concept I use is that of *coalition-proof Nash equilibrium*: thus, equilibrium is a set of trade policies such that neither single countries, nor coalitions of countries have an incentive to deviate. My first result is:²²

²²I use the tie-breaking assumption that if a country can select between two trade outcomes over which it is indifferent, it selects the one that maximizes its welfare to the right of that value of δ .

Proposition 1 *After the colony stages a revolution, the trade equilibrium depends on the distribution of factor endowments in the following way:*

- *If $\delta \in [0, \delta^*(\kappa))$, the trade equilibrium is $\{\cdot, M, F\}$ (the colony falls into autarchy);*
- *if $\delta \in [\delta^*(\kappa), 2\kappa)$, the trade equilibrium is $\{H, \cdot, F\}$ (the mother country falls into autarchy).*

Proof. Because autarchy gives minimum utility, and trade between H and M cannot take place, H and M must always open up to F if this opens up to them. Thus, F can choose between trading with only one of the two (and the outcome is $\{H, \cdot, F\}$ or $\{\cdot, M, F\}$) or with both (and the outcome is $\{H, M, F\}$). The result then follows from the preferences of F .²³ Notice that the equilibrium is coalition-proof, because neither F can be part of a deviating coalition (it is always at its first best) nor H and M can form a deviating coalition between themselves (because trade between them cannot take place, any deviation would lead at least one of the two to fall into autarchy). ■

Proposition 1 has an intuitive explanation. When δ is low, the third country is a competitor of the colony in selling the land-intensive good, and its terms of trade are best when it trades with the mother country alone. Thus, the third country reacts to sanctions by closing down to trade with the colony. When δ is high, on the contrary, the third country is a competitor of the mother country in selling the capital-intensive good, and its terms of trade are best when it trades with the colony alone. In this case, the third

²³In the case where $\delta \geq 2\kappa$, $\{H, M, F\}$ is always F 's first best, and the only trade equilibrium of the game.

country reacts to sanctions by offering open trade to the colony. Notice that revolution always makes the third country better off, in that it improves its terms of trade.

Denote by $T(S)$ extraction under political state S . It is then straightforward that:

Proposition 2 *Extraction is set to zero after the colony stages a revolution: $T(R) = 0$.*

Proposition 1 and 2 above (together with 3 and 4 below) create a complete mapping between political states and policy. It is then possible to express equilibrium prices, gains from trade and payoffs as functions of political states and factor endowments only. Thus, I use the notation $p^J(S, \kappa, \delta)$, $\Pi^J(S, \kappa, \delta)$ and $V^J(S, \kappa, \delta)$ from now on.

Date 4. If M has granted independence at date 2, nothing happens at this stage. If, instead, we are still under colonialism, H stages a revolution if and only if:

$$\Pi^H(R, \kappa, \delta) + B - \mu > \Pi^H(C, \kappa, \delta) - T(C) \quad (11)$$

The LHS of condition (11) is the final payoff to H under revolution, while the RHS is its final payoff under colonialism.²⁴ Given that H cannot be left with less than u , the maximum that can be extracted under colonialism is $A = \Pi^H(C, \kappa, \delta) + v_A^H - u$; plugging this back in (11), we find M 's *revolutionary constraint*:

$$\mu < B + v_A^H + \Pi(R, \kappa, \delta) - u \equiv \bar{\mu} \quad (12)$$

²⁴Autarchy utility drops from the inequality, as it appears on both sides.

If the stochastic cost of revolution is higher than the threshold $\bar{\mu}$, revolution never takes place - not even if M , the mother country, pushes extraction to its maximum. If, instead, μ is lower than $\bar{\mu}$, M is constrained to keep extraction below its maximum if it wants to stave off a revolution. Intuitively, the threshold $\bar{\mu}$ represents the benefit from revolution when extraction is maximum. Notice that this depends on expected trade conditions after the revolution, $\Pi(R, \kappa, \delta)$.

Date 3. In date 3 there are two possibilities: either we are still under colonialism, in which case M sets policy for H , or we are under independence, and H sets policy autonomously. Clearly, extraction will be set at a minimum under independence. Under colonialism, instead, there are two possibilities. If there is no revolutionary constraint ($\mu > \bar{\mu}$), M will set extraction at a maximum. If there is a revolutionary constraint ($\mu < \bar{\mu}$) M seeks to maximize extraction subject to not triggering a revolution. This is done by choosing T in such a way that 11 holds as an equality.²⁵ All this can be summarized in the following:

Proposition 3 *Under independence, extraction is set to zero: $T(I) = 0$. Under colonialism, instead, extraction is set to maximum ($T(C) = \Pi^H(C, \kappa, \delta) + v_A^H - u$) if $\mu > \bar{\mu}$; to less than maximum ($T(C) = \mu - B + \Pi^H(C, \kappa, \delta) - \Pi^H(R, \kappa, \delta)$) if $\mu < \bar{\mu}$.*

Next, we investigate equilibrium trade policy under colonialism and independence:

²⁵I am using the tie-breaking assumption that revolution does not take place when it yields just the same payoff as colonialism.

Proposition 4 *Both under colonialism and under independence, the trade equilibrium is $\{H, M, F\}$ for any $\kappa > 0$ and $\delta \in [0, 2\kappa]$.*

Proof. If $S = I$, $\{H, M, F\}$ is a CPNE. To see this, notice that $\{H, M, F\}$ realizes if $\tau_J^I = 1 \forall I, J$. In this case, 1-country deviations are ruled out because they would drive a country into autarchy, while 3-country deviations are ruled out because either H or M are at their first best at $\{H, M, F\}$ (Table 1). To see that no 2-country deviation is feasible, it is then sufficient to realize that deviating to $\{H, ., F\}$ ($\{., M, F\}$) is not optimal for H (F) when $\delta \in [0, \frac{\kappa}{2}]$ ($\delta \in [\frac{\kappa}{2}, 2\kappa]$) as $p_A^H \leq p_{\{H, ., F\}}^H < p_{\{H, M, F\}}^H$ ($p_{\{H, M, F\}}^F \leq p_{\{., M, F\}}^F < p_A^F$). To see that $\{H, M, F\}$ is the unique CPNE, notice that $\{H, M, .\}$, $\{H, ., F\}$ or $\{., M, F\}$ cannot be equilibria, as either H or M are always better off by extending trade to the excluded country. If $S = C$, M moves for H as well, maximizing $p^M(\tau|\kappa, \delta) + T(C)$. From Proposition 3, this is equal to $\Psi \equiv v^M[p^M(\tau|\kappa, \delta)] + v^H[p^H(\tau|\kappa, \delta)]$. To see that no trade outcome other than $\{H, M, F\}$ can be a CPNE, notice that M always gains from deviating from $\{H, ., F\}$ ($\{., M, F\}$) to the first best of H (M), and from $\{H, M, .\}$ to $\{H, M, F\}$. To see the latter point, use (4) to re-write Ψ at $\{H, M, .\}$ as $\Psi(p) = p^{\frac{1}{2}} + \bar{K}(1 + \frac{\kappa}{2})p^{-\frac{1}{2}}$. Taking the first and second derivatives shows that $\Psi(p)$ reaches a global minimum at $p = \bar{K}(1 + \frac{\kappa}{2})$, proving the point. To see that $\{H, M, F\}$ is always a CPNE, notice that M is at its first best:²⁶ this is because either $\{H, M, F\}$ or $\{H, M, .\}$ always dominate any other outcome, and $\{H, M, F\}$ always dominates $\{H, M, .\}$. ■

²⁶If $\delta \geq 2\kappa$, it may be the case that M 's first best is $\{H, ., F\}$ (and this is also the trade equilibrium). This is because M and H are competing for selling the land-intensive good in this case, and restricting supply may improve their terms of trade vis-à-vis the third country. One implication is that colonialism may be welfare improving in this case.

Proposition 4 says that in the absence of sanctions, the simple world described in this model is always fully integrated in trade. By comparing Proposition 4 to Proposition 1, it is clear that revolution always puts the colony on a different trade equilibrium, where its terms of trade are worse than before.²⁷ The model allows us to relate this terms-of-trade cost of revolution - a determinant of the mother country's economic power vis-à-vis the colony - to the distribution of world factor endowments.

The result that the colony is allowed to trade with the rest of the world may seem at odds with the many trade restrictions that famously characterized colonialism. The Spanish Monopoly is a good example of this. From the late 16th century to 1797, all Spanish American exports had to be sent to Spain independently on their final destination; similarly, all Spanish American imports had to come through Spain independently on their origin.²⁸ How is this compatible with the results of Proposition 4? The key point is to realize that trade restrictions were not as much meant to restrict colonial trade, as to appropriate part of the value of this for the mother country. In fact, much of the American trade that was routed through Spain was directed to/originating from other European countries: since its national monopoly allowed it to capture a share of the value of colonial trade, it was in Spain's best interest to ensure that colonial exports reached the markets where they were most valuable. Because T is the only tool of extraction in the model, all this is captured in a very stylized way: the mother country always allows colonies to trade with foreign countries (Proposition 4), but this is complemented with restrictions

²⁷For $\delta \in [\frac{\kappa}{2}, 2\kappa]$ this is evident from the fact that $\{H, M, F\}$ is H 's first best. For $\delta \in [0, \frac{\kappa}{2})$ this follows from the fact that $\{H, M, F\}$ is dominated by $\{H, M, F\}$ in the preferences of H (since F is a competitor of H in selling the land-intensive good).

²⁸The British Navigation Laws (in force between 1651 to 1822) are another famous national monopoly.

that appropriate to the mother country part of the value so created (Proposition 3).²⁹

Date 1 and 2. In date 1, Nature chooses the cost of revolution μ . Clearly, M has no reason to stick to colonialism when the maximum it can extract is negative. From Proposition 3, this is the case iff:

$$\mu < B - [\Pi^H(C, \kappa, \delta) - \Pi^H(R, \kappa, \delta)] \equiv \underline{\mu} \quad (13)$$

Thus, the mother country concedes independence whenever the stochastic cost of revolution is lower than the threshold $\underline{\mu}$. This is equivalent to the exogenous benefit from becoming independent (B) discounted by the terms-of-trade cost of revolution ($\Pi^H(C, \kappa, \delta) - \Pi^H(R, \kappa, \delta)$). Since the latter is always positive, it is always $\underline{\mu} < \bar{\mu}$.

Proposition 5 summarizes the characteristics of the equilibrium:³⁰

Proposition 5 *The political state of the model depends on the stochastic cost of revolution, μ , in the following way:*

- *If $\bar{\mu} \leq \mu$ there is no departure from colonialism and M , the mother country, imposes maximum extraction;*
- *If $\underline{\mu} \leq \mu < \bar{\mu}$, there is no departure from colonialism but M imposes only partial extraction;*

²⁹Any deadweight loss associated with distortionary extraction is captured by B in the model. For simplicity, I do not consider how B could depend on T , or on the pattern of trade. In fact, to endogenize B in this way would only strengthen my mechanism, by increasing any welfare loss of colonialism when colonies trade more with the rest of the world.

³⁰I am using the tie

- If $0 \leq \mu < \underline{\mu}$, M concedes independence.

In what follows, I will make a distinction between colonialism when $\bar{\mu} \leq \mu$ (I call this “unconstrained colonialism”) and when $\underline{\mu} \leq \mu < \bar{\mu}$ (“constrained colonialism”). The key point is now to understand how $\underline{\mu}$ and $\bar{\mu}$ depend on the distribution of world factor endowments.

4.1 Main result

To make the exposition simpler, I define $\gamma \equiv \kappa + \delta$, and study how $\underline{\mu}$ and $\bar{\mu}$ depend on $\frac{\delta}{\gamma}$, *keeping* γ *constant*. The measure $\frac{\delta}{\gamma} \in [0, \frac{2}{3})$ captures the attractiveness of rest of the world’s factor endowments (as opposed to the mother country’s) for the colony’s trade. In particular, $\frac{\delta}{\gamma}$ close to 0 means that the colony’s trade is more attracted by the mother country’s endowments than by the rest of the world’s, while $\frac{\delta}{\gamma}$ close to $\frac{2}{3}$ means just the opposite. Notice that, by fixing γ , I am now fixing the total value of the colony’s trade.

Figure 1 gives a qualitative representation of $\underline{\mu}$ and $\bar{\mu}$ as functions of $\frac{\delta}{\gamma}$. The figure plots $\frac{\delta}{\gamma}$ on the horizontal axis and μ on the vertical axis. The threshold $\delta(\gamma)$ is defined so that $\frac{\delta}{\gamma} \gtrless \delta(\gamma)$ if and only if $\delta \gtrless \delta^*(\kappa)$, where $\delta^*(\kappa)$ was defined in Section 2.2. The upper line represents $\bar{\mu}$, while the lower line represents $\underline{\mu}$. According to Proposition 5, the equilibrium political state is unconstrained colonialism at points above the upper line, constrained colonialism at points between the two lines, and independence at points below the lower line.

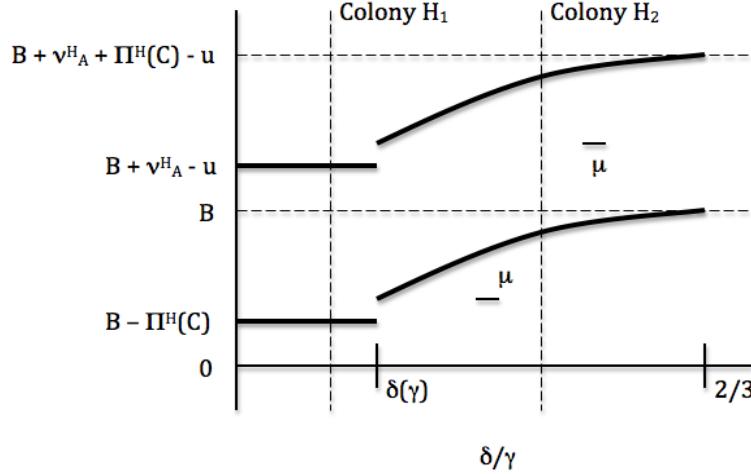


Figure 1: $\underline{\mu}$ and $\bar{\mu}$ as functions of $\frac{\delta}{\gamma}$

When $\frac{\delta}{\gamma} < \delta(\gamma)$, $\underline{\mu}$ and $\bar{\mu}$ are constant and valued at $B - \Pi^H(C, \delta, \kappa)$ and $B + v_A^H - u$ respectively. This is the case in which the third country, being a competitor of the colony in selling the land-intensive good, reacts to sanctions by closing down to trade with the colony. In this case, the terms-of-trade cost of revolution is maximum (the colony falls into autarchy), and so is the economic power of the mother country vis-à-vis the colony. When $\frac{\delta}{\gamma} \geq \delta(\gamma)$, $\underline{\mu}$ and $\bar{\mu}$ are a step higher, and increasing monotonically to reach B and $B + v_A^H + \Pi^H(C, \delta, \kappa) - u$. This is the case in which the third country, being a competitor of the mother country in selling the capital-intensive good, reacts to sanctions by offering open trade to the colony. Since the colony's gains from trade are best when it trades with both other countries, the terms-of-trade cost of revolution is still positive; however it is smaller than for $\frac{\delta}{\gamma} < \delta(\gamma)$, and converges to zero as $\frac{\delta}{\gamma}$ converges to $\frac{2}{3}$. Thus, for $\frac{\delta}{\gamma}$ in this range the mother country's economic power vis-à-vis the colony is also decreasing in $\frac{\delta}{\gamma}$.

The central result of the paper is presented in Proposition 6:

Proposition 6 *Ceteris paribus, the likelihood of decolonization is constant or increasing in $\frac{\delta}{\gamma}$, that is in the attractiveness of rest of the world's factor endowments (as opposed to the mother country's) for the colony's trade. At the same time, the likelihood of colonialism with maximum extraction (as opposed to colonialism with partial extraction, and decolonization) is constant or decreasing in $\frac{\delta}{\gamma}$. Furthermore, the expected share of colonial wealth that the colony can retain for herself under colonialism is constant or increasing in $\frac{\delta}{\gamma}$.*

Proposition 6 can be illustrated by comparing the case of colonies H_1 and H_2 in Figure

1. The two colonies have the same volume of trade and are equal in all respects except that H_1 's trade is more attracted by the mother country than H_2 's. It is easy to see that the likelihood of decolonization (the probability that $\mu < \underline{\mu}$) is lower for H_1 than for H_2 , and that the likelihood of unconstrained colonialism (the probability that $\mu > \bar{\mu}$) is higher for H_1 than for H_2 . As for the expected share of wealth that cannot be extracted, this is higher for H_2 than for H_1 at all values of μ .³¹

Thus, my central prediction is that, *ceteris paribus*, the amount of wealth that the mother country is able to extract from the colony is decreasing in the attractiveness of rest of the world's factor endowments (as opposed to the mother country's) for the colony's trade, and so is the sustainability of colonial power. In the next section, I go through several historical examples that provide supporting evidence for this theory.³² Before proceeding,

³¹We cannot make any prediction for the *ceteris paribus* effect of $\frac{\delta}{\gamma}$ on the likelihood of constrained colonialism, as that depends on the distribution of μ .

³²For 20th century decolonization, Head *et Al.* (2010) find that the “extra” trade between colonies and mother countries (relative to a standard gravity prediction) decreased only gradually after decolonization (between 25% and 50% of it disappeared within the first 20 years after decolonization). This decrease was part of a general decline in the external trade of former colonies (possibly due to import substitution

it is worth noticing that the model can be easily generalized beyond the factor endowment-based example developed in sections 2-4. In fact, I could have ranked countries based on their relative autarchy price rather than on any specific source of comparative advantage (assuming $p_A^H < p_A^M, p_A^F$, and p_A^F not too large relative to p_A^M to stick to the historically relevant case), and I would have obtained qualitatively similar results.³³

5 Historical Evidence

Apart from the isolated cases of the United States (1776) and Haiti (1804), decolonization happened in three waves. First, the Latin American colonies of Spain and Portugal unilaterally declared their independence in 1810-1830; later in the same century, a few British settler colonies peacefully obtained the right to self-government within the British Empire;³⁴ finally, most remaining Middle Eastern, Asian and African colonies obtained their independence in a 40-year period beginning around 1930. After considering the case of the American Revolution (Section 5.1), I discuss the decolonization of Spanish America (Section 5.2) and of Canada and Australia (Section 5.3).

policy), that penalized trade with the rest of the world less than trade with the former mother country (in fact, there is some evidence of a positive effect of decolonization on the extensive margin of trade with the rest of the world). The lack of *pre-decolonization* data makes it hard to relate these findings to my main prediction: namely, that trade with the mother country should become relatively less important for colonies *in the decades before independence*, thus reducing the terms-of-trade loss in the eventuality of a *conflictual* separation. In my model, decolonization is necessarily associated with a rapid change in colonial trade pattern only if separation is conflictual, or if colonial extraction came in the form of trade restrictions.

³³In particular, the third country can only be expected to provide commercial support to the colony when its autarchy price is close enough (or above) that of the mother country. Furthermore, the higher is its autarchy price, the larger the value of its support. This makes the likelihood of decolonization increasing in the attractiveness of the rest of the world (as opposed to the mother country) for the colony's trade.

³⁴Canada, Australia, New Zealand and South Africa; slightly later came South Rhodesia and Malta.

5.1 The American Revolution and the Seven Years War: the Link Reconsidered

It has often been claimed by historians that the American Revolution (1776) and the Seven Years War (1757-1763) - a major conflict between France and Britain which led to the annexation of French North America (Canada and the Mid-West) to the British Empire - were causally linked. Various channels have been proposed to explain this link.³⁵ My model suggests a new possible channel: by transferring a large chunk of factor endowments (mainly land and sea) from France to Britain, the war made the French Empire a better trading partner for the Middle and New England colonies. These joined Virginia and Maryland (whose trade had long been attracted by the world outside the British Empire) in asking for a better treatment, forming a coalition that was large enough to challenge imperial rule. Failure by Britain to appreciate the new conditions led to dissatisfaction with imperial taxation, escalation, and eventually revolution.

The commerce of pre-revolutionary America was subject to the many restrictions that regulated trade within the British Empire. Key export commodities were indigo and rice in the Lower South (Georgia and the Carolinas) and tobacco in the Upper South (Virginia and Maryland). These were all “enumerated goods”, which imperial regulations required to be shipped to Britain independently on their final destination. In the North,

³⁵To focus on economic channels, three main arguments have been made. First, the elimination of a French military threat from North America reduced the value of British protection (Schlesinger, 1919). Second, the need to recover from large war expenditures induced the British to overtax the American colonies after the war (Gipson, 1950). Finally, the incorporation of the Mid-West into the British Empire increased the potential prize from a successful revolution (Baak, 2004).

the Middle Colonies (Delaware, New Jersey, New York, Pennsylvania) and New England (Connecticut, Massachusetts, New Hampshire, Rhode Island) exported mainly wheat, salt meat (Middle Colonies), and fish, whale oil, ships and shipping services (New England). For these non-enumerated commodities, the British and foreign West Indies were a key export market (McCusker, 1970, p. 246; Ostrander, 1956, p. 77). From the West Indies, the colonies obtained specie, bills of exchange, and various intermediate products,³⁶ the most important of which were the molasses used in the New England rum industry.³⁷ Overall, the thirteen colonies had exports worth £3.17 M in 1770³⁸, which they exchanged mostly with European manufactures. This made them largely dependent on overseas markets for their growth and prosperity (Jensen, 1969, p. 108).

But how dependent were the colonies on *imperial* markets? In the South, the war did little to alter a pattern that had existed for decades, and that put the two groups of colonies in a very different position. On one hand, indigo was mostly consumed in Britain, where it even benefited from a preferential subsidy. At the same time, while rice sent to Britain³⁹ was largely re-exported, there was a clear upward trend in retained imports in the 1760s and 1770s (Nash, 1992, p. 691). This made the trade of the Lower South significantly dependent on the British market. On the contrary, tobacco was largely re-exported from Britain (on average more than 80% of the total in 1770-1774; see Schumpeter, 1960, Table

³⁶Differently from manufactures, intermediates were not required to be imported from Britain.

³⁷This was a key New England industry at that time. See McCusker (1970) and Ostrander (1956).

³⁸Of these, 50% went to Britain and Ireland, 30% to the West Indies, and 17% to South Europe and the Wine Islands. About 76% of the exports to Britain were "enumerated" goods, 85.4% of which were re-exported to continental Europe.

³⁹Despite its enumerated good status, rice could be exported directly to Southern Europe since 1730. Thus, only 78% of all colonial export went to Britain in 1772-1774, (Nash, 1992, p. 688), 75% of which was re-exported.

18). This reflected the large popularity of tobacco in 18th century Europe, and the fact that Virginia and Maryland had come to dominate this industry since the mid 17th century (Davis, 1954, p. 152). Thus, the Upper South was only very marginally dependent on the British market for its main export industry.

In the north, the pattern of dependence on imperial markets was significantly affected by the war. Even before 1756, the Middle and New England colonies had traded a lot with the French West Indies, which were the most important sugar-producing islands in the Caribbean and the heart of a rapidly growing commercial empire (Eccles, 1972, p. 172). This trade, however, had been discouraged not only by Britain (whose tax on foreign molasses diverted much trade with the foreign West Indies into smuggling, see Bjork, 1964, and Ostrander, 1956) but also by France, who owned large chunks of land and sea in Canada and was developing her own food and fish productions in this colony (Gould, 1939, p. 489). With the loss of Canada after the Seven Years War, the project of creating a self-sufficient French Empire in America was gone (*Ibid.*, p. 490), and the French were left with the problem of obtaining much-needed provisions for their West Indies islands. This arguably increased the importance of the French West Indies as an export market for the Middle Colonies and New England, therefore decreasing their dependence on imperial markets. While the importance of smuggling makes it very hard to track this evolution in the data, much anecdotal evidence hints at a sharp increase in the volume of smuggling in the 1760s (see for example Greene, 1980, p. 89).

Thus, the model constructed in Sections 2-4 suggests the following interpretation of the impact of the Seven Years War. Before the war, the Lower South, the Middle Colonies and

New England could all expect a large terms-of-trade cost of revolution. Had Britain reacted to revolution with sanctions, the Lower South would have lost (preferential) access to its key market for indigo, a commodity on which little external support could be expected (since other European Empires had their own internal supplies). Similarly, the Middle Colonies and New England would have lost access to the British West Indies, at a time when the main other West Indies power (France) would have not provided much commercial support in the interest of her own food-producing colonies of North America. In terms of the model, $\frac{\delta}{\gamma}$ was low for these colonies, and the economic power of Britain was high. This stood in contrast with the case of Virginia and Maryland, whose commercial interests were aligned with those of the other European Empires (as these were large net importers of tobacco). By giving French North America to the British, the war made the French Empire less land intensive, thus removing some of the internal forces that threatened to block the provision of commercial support to the Middle and New England colonies. This decreased the terms-of-trade cost of revolution for these colonies, tilting the balance of power between them and Britain in their favour (it increased $\frac{\delta}{\gamma}$). As a consequence, the Middle and New England colonies joined Virginia and Maryland to form a coalition that was both willing to fight against British taxation, and large enough to impose its views on the rest of the colonies.

This description of the economic incentives to revolution squares well with the pattern of political radicalism in reaction to increased British taxation in the late 1760s and early 1770s. For example, the standard historical interpretation of the politics of 1774-1776 is that New England radical representatives, seconded by a group of Southern representa-

tives led by representatives from Virginia, first pushed a reluctant Congress into active resistance, then forced an open declaration of independence (Jillson and Wilson, 1994, p. 177).⁴⁰ This compares with the prudent attitude of the Lower South and, to a lesser extent, the Middle colonies.⁴¹ Also, that an increased and more secure trade with the foreign West Indies was one factor driving the radicalization of New England in the 1760s is consistent with the pattern of radicalism observed within the community of Boston merchants. As first pointed out by Schlesinger (1919), this group was a key promoter of American independence. Using data on insurance contracts to identify the smugglers, Tayler (1986) shows that these were relatively more likely to be patriot than loyalist, and that their influence raised to a very high level in the 1760s. This suggests that the arguments of those involved in the foreign trade became more convincing in this period, possibly because of more favorable economic conditions in the French West Indies.

That future trade relations were paramount in the minds of the revolutionaries is clear from the intense diplomatic exchange they had with foreign nations (and France in particular) before and after the revolution (see Eccles, 1972). In fact, there was a concrete fear that revolution would deteriorate economic relations with Britain substantially, as evident for example in the diary of John Adams.⁴²

But what actually happened to American trade after 1776? As a result of war and sanctions,⁴³ American exports to Britain dropped to virtually zero in 1776-1780, and did

⁴⁰In fact, Virginia declared her own independence months before the joint declaration of July 4th, 1776.

⁴¹While Georgia was last in sending her representatives to Congress, South Carolina and Pennsylvania were the only two who initially voted against the declaration of independence; in this same vote, Delaware and New York abstained.

⁴²See Hutson (1980), p. 30.

⁴³Trade between any part of the British Empire and the thirteen colonies was totally prohibited in

not recover to 65% of their pre-war value until 1791-1795 (Figure 2).⁴⁴ As for the trade with the British West Indies, this was at two thirds of the pre-war level in 1785-1787, and even lower in 1793. Among individual colonies, the Carolinas and Georgia were hit the hardest.⁴⁵ As Bjork (1964) points out, “*Undoubtedly there was some expansion of trade with the other European countries in rice, indigo, naval stores, and tobacco; but the amount was certainly far from large enough to make up for the decline in exports to Britain. The difficulties faced by the plantation economy of the Lower South were nowhere better seen than in the population statistics of South Carolina, where there was an absolute decline in the slave population between 1775 and 1790*” (p. 556). This is in sharp contrast with the experience of Maryland and Virginia, where tobacco exports *increased* after the war. Thanks also to an increase in price (due to the breaking of the British monopoly), the years up to 1790 were a time of real prosperity for the tobacco planters of the Upper South.⁴⁶

As for the Middle and New England colonies, these were severely hit by trade restrictions in the British West Indies.⁴⁷ Still, trade to the West Indies in general was buoyed by

1776-1783. After that, a number of restrictions remained in place, among which the prohibition to export salt meat and fish to the British West Indies, the prohibition for any American vessels to trade with the islands, the loss of the subsidy on indigo and the preferential tariff on rice and wheat on the British market.

⁴⁴These figures are particularly significant if one considers that the American population was growing fast in that period. I do not consider the figure for 1796-1800 (which stands at £1.7m) as this was largely influenced by new international conditions (the French revolution and the outbreak of war between England and France).

⁴⁵British imports from the Carolinas fell from a combined £579,000 in 1775 to £75,000 in 1783 and £282,000 in 1788. For Georgia, these figures were £103,477 in 1775 and £25,057 in 1788 (Bjork, 1964, p. 557).

⁴⁶Virginia's tobacco exports increased from 55,000 hogsheads prior to the war to an average 57,125 in 1783-1789 (*Ibid.*, p. 540). Total tobacco exports increased from 102,000 hogsheads to 110,000 in 1790-1792 (*Ibid.*, p. 540), confirming that Maryland's exports must have also done well. From the British accounts (Schumpeter, 1960, Table 18) we see that the imports of tobacco from the US fell from an annual average of 55.2 M lb in 1771-1775 to 35.1 M lb in 1783-1789. On the breaking of the British tobacco monopoly see also Bjork (1964), p. 554-555.

⁴⁷For example, exports of fish to the British West Indies fell from \$226,000 in 1771-1773 to almost zero in the 1780s and early 1790s (*Ibid.*, p. 552). Still, *total* fish exports to the West Indies stood at \$684,000

increased trade with the French West Indies. This trade was facilitated by the crucial Treaty of Amity and Commerce signed with France in 1778 (see Eccles, 1972).



Figure 2: US exports, 1771-1795. The three figures for exports to the British West Indies are for 1771-1773, 1785-1787 and 1793. Source: Schumpeter (1960) and Bjork (1964).

These facts are consistent with the idea that the American revolutionaries worried about the terms-of-trade cost of revolution, and acted when the Seven Years War improved conditions in this sense. This provides a new interpretation of the link between the war and the American Revolution. While this is not incompatible with earlier interpretations, it may add considerable explanatory power in light of the importance of trade for the American colonies. In this interpretation, the French support of the American Revolution was motivated, among other things, by the expected improvement in terms of trade that the French Empire would obtain from this. Also, this interpretation points to an interesting dissociation between political success and economic power. Although the Seven Years War

in 1790. Of these, \$610,000 were exports to the French West Indies (Pitkin, 1835, Table VII). While smuggling makes it impossible to compare this trade to pre-war levels, it seems safe to conclude that the French trade gave substantial relief to the American fish industry. Also, estimating the total value of exports to the West Indies in 1790, Jefferson came up with a figure of \$2.2m going to the British West Indies, and \$3.2m going to the French West Indies (Bjork, 1964, p. 553).

was a triumph that matriculated Britain as the world's leading colonial power, it also decreased its economic power vis-à-vis some of her old colonies: within a few years, this led to one of the most serious setbacks in British colonial history.

5.2 The Spanish Empire: Decadence, Revival and Fall

Spanish control over Latin America was established in the early 16th century as a joint venture of the Spanish government and a number of private *conquistadores*. After a period of plundering, the Spaniards set out to organize the extraction of the mineral and agricultural wealth of the colonies. The social structure that they created had at its bottom the natives (later, also imported negroes), that were forced to work for little or no compensation in the mines and plantations. In the middle stood the *creoles* - the locally-born descendants of Spanish settlers - who were the legal owners of the colonial assets. On top were the peninsular Spaniards, who administered the colonies as temporary residents. The colonial economy was centred on a few regions exporting silver and agricultural commodities.⁴⁸ Most of the needs of the creoles besides food and basic manufactures were satisfied with imports from Europe. Every year, the creoles were required to share part of the colonial wealth with the Spanish Crown, which imposed a series of taxes and trade restrictions. Among the latter, the most important was the Spanish national monopoly over American trade: from late 16th century to 1797, all colonial exports and imports had to pass through

⁴⁸The production of gold was also important in 16th century, but later quickly disappeared. Peru and Mexico were the two key silver-producing regions, while Chile and a large area around and including Venezuela became important agricultural producers in the 18th century.

Andalusia, independently on their final destination or origin.⁴⁹

While in 16th century a significant share of colonial imports was of imperial origin, this share declined sharply during the 17th century. This was the result of the contemporary decline in relative manufacturing capacity of the Spanish Empire, which is often blamed on the misgovernment of the last Hapsburg kings.⁵⁰ By the end of the century, just about 5% of the goods leaving Andalusia were of Spanish origins, and the Andalusian merchants ”... *had been turned into nothing more than the agents of foreign manufacturers and businessmen.*” (Walker, 1979, p. 11 and 13). At the same time, smuggling from the Dutch, English and French trading posts in the Caribbean and Africa became increasingly important. As the imperial capacity to serve colonial imports declined, so did the capacity of the Spanish Crown to extract wealth from the colonies. This is evident in the drastic fall in the share of colonial treasuries remitted to Spain⁵¹, in the increasing share of top colonial officials that were of creole origins,⁵² and in a series of trade reforms that increased the bargaining power of colonial versus peninsular merchants.⁵³

⁴⁹Trade was carried by large military-escorted fleets, which sailed yearly to Veracruz (Mexico) and Cartegena/Portobello (Colombia/Panama). As discussed above, the redistributive effects of the Spanish monopoly are captured by T in the model, while the fact that colonial trade was (indirectly) open to European markets is broadly in line with the results of Proposition 4.

⁵⁰For example, in the textile sector Milan and the Flanders (then parts of the Spanish Empire) dramatically lost their leadership to England, Holland and, slightly later, France (Wilson, 1960, p. 219). For an account of the decline of the Spanish economy in the 17th century, see Hamilton (1937, pp. 170-171).

⁵¹The share of Mexican public revenues remitted to Spain or to other parts of the empire (most notably the Philippines) decreased from 57% in the 1610s to 23% in the 1690s (TePaske and Klein, 1981). Similarly, only 10% of Peruvian public revenues was remitted in the 1660s, as opposed to 64% in the 1590s (TePaske, 1983). Importantly, remittances did not decline because of a fall in silver production (TePaske and Klein, 1981) but rather because of the capacity of the creoles to retain more of their own production for consumption and investment (Lynch, 1965-1969, p. 195).

⁵²While in 1600-1678 the share of creole judges in the colonial high courts was insignificant, this rose to 44% in 1678-1750 (Lynch, 1992, p. 77)

⁵³For example, in 1714 the Spanish merchants were forbidden direct access to the inland markets of the Americas; in 1749 the American merchants were granted the right to ship money to Spain and purchase directly goods in Cadiz (Walker, 1979 p. 213 and 218).

In the first decades of the 18th century, this pattern was slowly reversed. The new Bourbon dynasty installed on the Spanish Crown in 1702 started an ambitious programme of economic reforms.⁵⁴ As a result, the Spanish economy was seriously catching up with the rest of Europe's by the 1750s, and the last quarter of the century was a period of unprecedented prosperity and growth for the country (Fisher 1998, p. 460). As the Spanish economy recovered, the importance of Spain as a trading partner for the American colonies increased substantially. For example, the Spanish share of colonial imports rose to 15% in 1748-1765, to 38% in 1778, and to 52% in 1782-1796 (Garcia-Baquero Gonzales, 1976; Fisher, 1981, p. 27).⁵⁵ Besides promoting economic reforms in Europe, the Bourbons launched a “second conquest of America” (Lynch, 1973, p. 7), whereby the pattern of concessions made over the previous century was reversed. Taxation was increased, tax administration made more efficient, and a higher share of revenues remitted to Spain (*Ibid.*, p. 11). Instruments of creole power such as the order of the Jesuits were dismantled, and colonial administration brought back under the influence of peninsular Spaniards.⁵⁶ Finally, the enfranchisement of colonial merchants vis-à-vis their peninsular counterparts reached an impasse after 1750 (Walker, 1979, p. 14).

This rapid account of the decadence and revival of the Spanish Empire is broadly consistent with the results of Proposition 6. As the factor endowments that were complementary to the American endowments moved outside the Spanish Empire in the 17th century, ex-

⁵⁴These included the promotion of the inflow of skilled textile artisans from France and England (La Force, 1964) and the opening of Royal Factories endowed with cutting-edge manufacturing technology.

⁵⁵This latter increase was boosted by discriminatory tariffs introduced in 1778.

⁵⁶For example, the share of creole judges in the colonial high courts dropped to 23% in 1751-1808 (Lynch, 1992).

traction decreased. As the Spanish economy recovered and colonial trade was increasingly attracted to imperial markets in the 18th century, this pattern was successfully reversed. In this interpretation, the evolution of Spain's capacity to keep her colonies under control was the result of changes in the economic fundamentals that determined her economic power vis-à-vis the colonies.

The new Spanish imperialism was bound to be short-lived, however. As the 18th century drew to a close, the high level of colonial extraction was creating an alarming level of frustration in the colonies. In the early years of the 19th century, as Spain refused to meet colonial dissatisfaction with significant concessions, political conditions deteriorated further (Lynch, 1973). Then, in 1810-1827, a series of revolutionary wars led to the almost complete elimination of Spanish colonial power from the American continent, and the creation of several independent states.⁵⁷ These wars were organized and fought by the creole elite, which retained in the new states the same privileged position that had enjoyed under Spanish rule. The traditional historical interpretation of these wars is that the creoles took advantage of the invasion of Spain by Napoleon (1810) to get rid of the burden of Spanish control. Other authors have pointed to the role of the diplomatic activity of Britain in facilitating the collapse of the Spanish and Portuguese Empires (e.g. Kaufmann, 1951).

But was there an economic origin of Latin American independence? Interestingly, the Latin American revolutionary wars were contemporaneous of dramatic economic change in Europe. Exhausted the best period of economic growth in Spain, the early decades of the 19th century marked the outburst of the industrial revolution in Britain (and later

⁵⁷The only country to remain under Spanish rule was Cuba, which revolted in 1898.

France). As British manufacturing capacity boomed, the British merchants began to look at “new” markets for their expansion. In particular, Latin America came to be seen as a market potentially as rich as those of India or the United States (Kaufmann, 1951). At the same time, the industrial development of Northwestern Europe led to increasingly peripheral countries such as Spain and Portugal specializing in the supply of foodstuff and raw materials (Hanson, 1973; Prados de la Escosura, 1984).

The extent of this change is evident from contemporary trade patterns. The share of former colonial America in Spanish exports fell from 48.6% to 0.1% between 1792 and 1827, and remained steadily low throughout the century. Conversely, the share of Spanish exports to Britain and France increased from 25.5% to 55.2% over the same period, and remained steadily high. This coincided with a sharp decline in the Spanish net export of manufactures, and a sharp increase in her net export of raw materials (Prados de la Escosura, 1984).⁵⁸ As for trade between Latin America and Britain, this was soon curtailed by three decades of political and economic instability following to independence (1830-1860);⁵⁹ but in the 1810s and 1820s, trade boomed, supported by genuine expectations of strong future growth and by a series of commercial treaties with Britain (see Platt, 1972, for some data; and Bulmer-Thomas, 1998, p. 3).

In light of these facts, the model developed in Sections 2-4 allows us to complement

⁵⁸In 1792, manufactures were 31.6% of total exports, while raw materials accounted for 25.6%; by 1827, these share were, respectively, 13% and 42.5%. Over the same period, the share of manufactures in Spanish imports increased from 45.2% to 59.3% (*Ibid.*).

⁵⁹Shortly after independence, many of the new independent countries succumbed to a series of civil wars between alternative groups of creoles. This, together with a series of supply bottlenecks (such as the incapacity to raise capital on international markets, after a disastrous first round of borrowing in the early 1820s), hindered the countries’ export capacity, thus reducing their involvement in world trade until the 1860s (Bulmer-Thomas, 1998, p. 3; Platt, 1972).

the traditional interpretation of the American revolutionary wars by proposing an explicit link with the contemporary advent of the industrial revolution. As this concentrated the European manufacturing capacity in Britain, the terms-of-trade cost of a Latin American revolution against Spain decreased for two reasons. First, it could be expected that, in the interest of her own terms of trade, Britain would have helped the colonies with commercial support (as $\frac{\delta}{\gamma} > \delta(\gamma)$). Second, Spain became less and less important as a trade partner for the colonies, even beginning to appear as a commercial *competitor* ($\frac{\delta}{\gamma}$ close to $\frac{2}{3}$). This decreased the cost of any trade disruption with this country. Failure by Spain to realize the new conditions led to open rebellion at the first useful occasion. In this interpretation, the invasion of Spain was an exogenous shock that decreased the cost of revolution, at a time in which the balance of power between Spain and her colonies was tilting in favour of the latter. As for the diplomatic support provided to the revolutionaries by Britain, this can be best understood in terms of the improvement in terms-of-trade that this country could expect to receive from a Latin American emancipation.

5.3 Self-Governing Colonies: the case of Canada and Australia

By mid 19th century, a few British colonies⁶⁰ had been granted “representative” institutions. Typically, these consisted of councils of colonial citizens that assisted the imperial governor in the administration of the colony. Because the governor retained the power to appoint all members of the councils, however, the *de jure* political power remained

⁶⁰These tended to be colonies with a significant population of British settlers. Their case stood in contrast with that of the so-called Crown Colonies, where all legislative, executive and judiciary power was in the power of the British government.

firmly in the hands of the imperial government. With the concession of self-government to Canada in 1849, a new type of colonies was born. In a self-governing colony, all members of the councils - effectively, the colonial government - were appointed and dismissed by local election. This posed substantial limitations to the power of the governor, and represented therefore a very substantial step towards formal independence.⁶¹ Between 1849 and 1923, five more British colonies obtained self-government: Australia (1856), New Zealand (1856), South Africa (1872-1907), South Rhodesia (1923) and Malta (1921). In this section, I look at the decision to concede self-government to Canada and Australia.

5.3.1 Canada

The two main colonies of Canada (Quebec and Ontario) were formally annexed to the British Empire in 1763.⁶² While Quebec was a French settler colony, Ontario was part of a scarcely populated region of the American Midwest that had long been disputed between Britain and France. Here, large European settlement only began with the inflow of US Loyalists after 1783.⁶³ Historically, the Canadian economy had been split between subsistence agriculture and the fur import-export industry. Fur was imported from a vast area around the Great Lakes and the American Midwest, and exported to Europe through

⁶¹With self-government, the imperial government essentially lost control of local legislative and executive power: while the Crown retained a formal veto power on local legislation, this was used very rarely. The imperial government retained, instead, control of foreign policy, and a limited control of trade policy (for example, the colonial governments were allowed to set tariffs to the purpose of raising revenues).

⁶²Until 1870, Canada was made up of several independent colonies; of these, Quebec and Ontario were by far the most important in terms of population. In what follows, I focus on these two colonies.

⁶³In both provinces, population grew fast after 1783, reaching 550 thousands in Quebec and 230 thousands in Ontario by 1831. Most immigrants were English speaking in this period, resulting in the French share of Quebec population decreasing to about a third by 1850 (the indigenous population was very small in both provinces).

the commercial cities of the St Lawrence River (Montreal and Quebec City). This dual structure had contributed to creating a society divided between merchants and farmers, whose interests were often in conflict with each other.

In the first decades of the 19th century, the fur trade rapidly fed into irrelevance, and the import-export industry converted into carrying US foodstuff directed to Europe. At the same time, a new trade - the export of timber - rapidly took off. This was created by the choice of Britain - the world's largest timber consumer at that time - to promote the import of this strategic commodity from imperial sources, rather than from traditional sources around the Baltic sea.⁶⁴ As a result of a preferential tariff erected in 1802, 80% of British imports came to be served by Canada by 1820 (Marr and Paterson, 1980). The timber industry was a primary source of prosperity for the colonies, since it represented a large share of colonial exports and involved a large share of the population.⁶⁵

In terms of political developments, the early decades of the 19th century were marked by the emergence of the farmers as a group in potential conflict with British imperial rule. Since the 1790s, the colonies had been granted local representation in the form of appointed councils that assisted the governors in the administration of the colonies, and an elected assembly with advisory power. Initially, these institutions had remained under the control

⁶⁴British high external demand for timber was driven by rapid urbanization, coupled with scarce domestic supply. Timber was also a strategic commodity, however, for its role as a raw material required by the Royal Navy. During the Napoleonic wars, supply break-ups had showed the desirability of an imperial supply.

⁶⁵Despite the importance of the import-export industry, timber exports made up for over 40% of total exports between 1829 and 1845, with year peaks at 70% (*Ibid.*, p. 61). The timber trade was of importance to farmers (who harvested it on the margin of their land, and supplied foodstuff to lumbering camps), lumberjacks, sawmill entrepreneurs and workers, and a large number of middlemen (*Ibid.*, p. 64-65; Pomfret, 1981, p. 25; Easterbrook and Aitken, 1956, p. 159).

of the merchants, and relations with Britain had been good. After 1820, however, the assemblies came under the control of the farmers (who were being made more numerous by immigration) and conflict with the mother country began on a number of issues. Among these were the tariff imposed by Britain on US manufactures, the allocation of large public sums to the development of new trade infrastructure (as opposed to agricultural), and the allocation of Crown land to British speculators.⁶⁶ By the 1830s, the most radical representatives of the farmers had come to see independence from Britain as a necessary step to secure control of local policy (Conrad *et Al.*, 1993, p. 412-424). In 1837, as the governor of Quebec denied the assembly's right to authorize new public revenues, and an additional 2.1 M hectares of Crown land were sold to speculators, riots erupted in Montreal and Ontario. The riots failed to stimulate a wider participation, however, and were easily put down by the British forces (*ibid.*, p. 418-419, 425; Creighton, 1966, p. 250).

Then, in the 1840s, the political mood changed dramatically. As all representatives of the farmers joined forces to request policy independence, the British made a series of significant concessions after 1842. By the second half of the decade, the opinion that control of government in Canada was not worth making more concessions was circulating within British official circles (Creighton, 1966, p. 258). In 1849, on the belief that "... *it is neither possible nor desirable to carry on the government of any of the British provinces in North America in opposition to the opinion of the inhabitants*" (the Colonial Secretary, Earl Grey, as reported by Creighton, 1966, p. 259-260), Britain conceded self-government

⁶⁶Large chunks of Canadian farmable land belonged to the British Crown, who periodically put it on sale. The private sale of Crown land to British speculators resulted in a much higher price paid by the farmers (the final purchaser of the land), than if the Crown land had been sold publicly.

to the two colonies. This implied that the councils would be responsible to the assembly only. It represented the first substantial step towards Canadian independence, which was then strengthened by Confederation (1867), and formal independence (1931).

The political changes of the 1840s were accompanied by important economic changes. On one hand, the empire-wide dismantling of trade restrictions that took place in that decade⁶⁷ implied a loss of preferential access to the British market for the Canadian colonies. In the import-export trade, this exposed the commercial cities of the St Lawrence to the aggressive competition of American ports, especially New York and Philadelphia. In the timber trade, it implied a loss of competitiveness vis-à-vis the European producers, and a gradual loss of importance of the British market for Canadian timber. On the other hand, this commercial revolution happened at a time in which the US, which as late as the 1830s had been an exporter of smuggled timber to Canada (for re-export to Europe), first became a significant importer. By 1849, 24% of Canadian timber went to the US. Driven by rapid urbanization and faced with limited domestic supply,⁶⁸ US demand for Canadian timber grew steadily in the following decades, and the US share of Canadian timber exports climbed to 50% by the end of the 1860s (see Figure 3). In fact, timber was the leading industry in determining the re-orientation of the Canadian economy towards the US in the second half of the century (Easterbrook and Aitken, 1956, p. 204): by the early 1880s, roughly half of total Canadian imports and exports came from and went to

⁶⁷For centuries, British trade policy has protected British landowners from competition from the empire and from the rest of the world, and some groups of colonial producers from competition from the rest of the world. Both types of restrictions were finally abolished in the 1840s.

⁶⁸Maine was the main US source of timber at that time, while the vast resources of the US West had not yet been explored.

the US (for the data, see Mitchell, 1998, p. 431, 434 and 455).

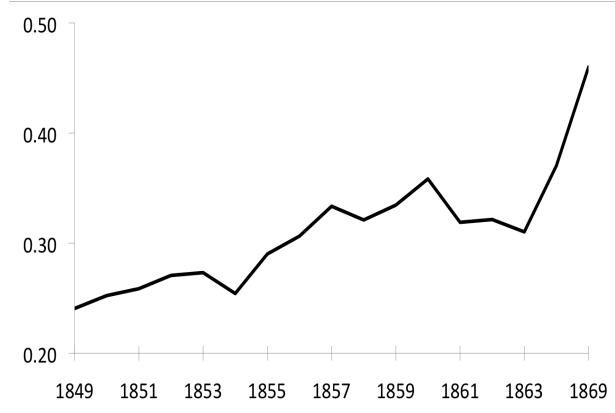


Figure 3: US share of Canadian timber exports, three-year moving average. Source: Lower *et Al.*, 1938, pp. 101, 134. Unfortunately, lack of data makes it impossible to take this series further back in time.

While historians have recognized that the political and economic events of the 1840s were related,⁶⁹ my model suggests a precise mechanism for this link. As a set of empire-wide reforms abolished the old preferential system of trade within the British Empire, the cost for the Canadians of a conflictual separation from Britain decreased, as the cost of any associated trade disruption decreased. This happened at the same time as Canada's rapidly growing neighbour - by then an important supplier of manufactures - converted into being a net importer of timber. This fact provided a guarantee of US commercial support, further reducing the cost of a dispute with Britain (in terms of the model, $\frac{\delta}{\gamma} > \delta(\gamma)$). These changes in trade pattern tilted the balance of power between Britain and Canada in favour of the latter; mindful perhaps of the experience of the American Revolution, the

⁶⁹For example, talking about the impact on Canada of the trade liberalizations of the 1840s, Creighton (1937, p. 364) argues that “*To contemporaries, who could best appreciate the interlocking mechanism of the old system, the action of Great Britain implied the most inevitable break-up of Empire*”.

British then decided to bow to colonial requests for self-government.⁷⁰

5.3.2 Australia

The British colonies of Australia⁷¹ were first settled in 1787, and within thirty years became specialized in the production of wool, to be exchanged for manufactures on the European market. The market for wool in Europe grew exponentially in 19th century, driven by two distinct waves of industrialization: that of Britain in the first half of the century; and that of continental Europe (mostly France, Germany and Belgium) in the second half. I suggest that the way in which the evolution of British-Australian relations matched the evolution of the European wool market is consistent with the mechanism proposed by the model. On one hand, during the first wave of industrialization - when continental Europe (F) was a competitor of Australia (H) in exchanging wool for manufactures (x for y) with Britain (M) - Britain retained firm control over the colonies, whose public revenues it administered partly in its own interest ($T > 0$). On the other hand, Britain surrendered control of Australian public revenues at about the same time as the second wave of industrialization made continental Europe a competitor of Britain in exchanging manufactures for wool with the colonies. This decision was shortly followed by the concession of responsible government - an important step towards full independence.

Originally designated to accommodate British convicts, the colonies of Australia were

⁷⁰Besides contributing to the understanding of the Canadian experience, this interpretation hints at an interesting relation between the use of preferential tariffs and the capacity of an empire to preserve its territorial integrity.

⁷¹I focus on the case of New South Wales and Victoria, the oldest and largest British Australian.

inhabited by a majority of free settlers by 1810. Initially, the colonies did not produce any export commodity and could only afford to import manufactures thanks to the financial help of the mother country. In the 1810s, however, it was discovered that Merino sheep could adapt very well to the Australian climate, and a small wool trade developed. In the following years, a rapid expansion in the British wool textile industry led to a boom in this trade,⁷² creating what would be the colonies' main source of prosperity for most of the 19th century.

The British wool textile industry had traditionally relied on home-grown wool, supplemented with a little import of special-quality Merino wool from Spain. In early 19th century, however, increasing demand put pressure on the government to abolish the import tariff that, for centuries, had isolated the country from abundant European supplies. As imports from all sources were liberalized in 1824,⁷³ British imports boomed. For about two decades, continental Europe (and Germany in particular) was by far the largest source, although the share of Australia was growing fast. After the 1840s, European exports of wool to Britain almost disappeared, while Australia imposed herself as the main source of British wool for the rest of the century (see Figure 4). This pattern was due to an expansion in Australian supply, but also to contemporary economic developments in continental Europe. In the first decades of the century, Britain had been by far the largest consumer of wool (Barnard, 1958). As the industrial revolution spread outside Britain, however, con-

⁷²For example, the Australian sheep population grew from 0.3 M units in 1821, to 2.8 M in 1838 and 13.2 M in 1849 (Shann, 1930).

⁷³The lack of sufficient imperial supplies at that time made it impossible to devise a preferential tariff system such as that for Canadian timber. Thus, the wool trade was never subject to the pre-1840s system of preferential tariffs.

sumption of wool in continental Europe boomed: by the 1860s, France overtook Britain as the largest consumer.⁷⁴ As a result, the world outside the British Empire retained an increasing amount of its supplies for domestic consumption, eventually becoming a net importer in the mid 1850s. This translated into an increasing share of British colonial wool being re-exported from London to France, Belgium and Germany (Figures 4 and 5).⁷⁵

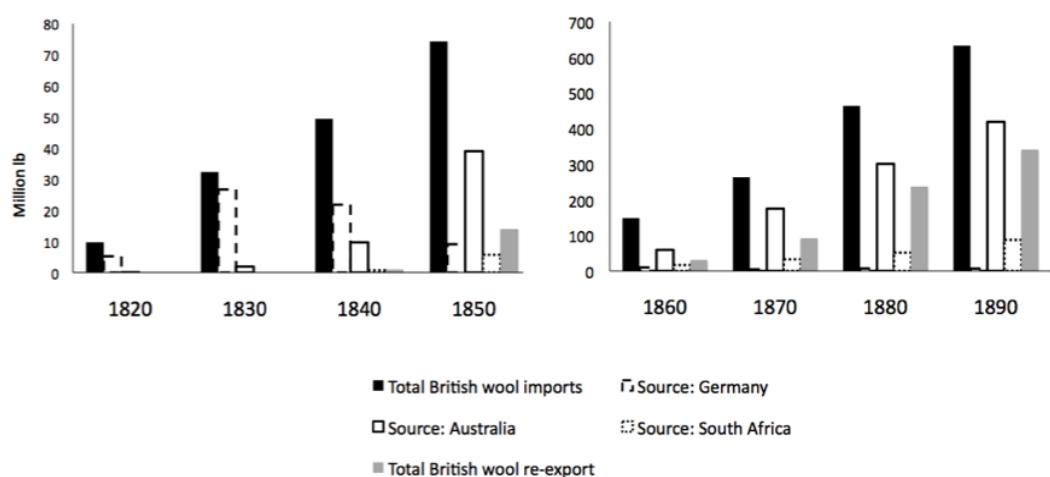


Figure 4: Total British wool imports (with main sources) and re-exports, 1820-1890. Source: Barnard (1958).

Turning to political developments, the Australian colonies had been granted representative institutions in 1798. As in the case of Canada, however, power remained essentially in British hands, as the institutions were “...intended to legitimize, rather than restrict, the governor’s actions” (McMinn, 1979, p. 21). Although Britain controlled Australian public revenues, colonial extraction was probably zero (or even negative) in the beginning,

⁷⁴Total wool consumption in France was 319 M lb in this period, compared to 251 M lb in Britain (*Ibid.*).

⁷⁵London was the main international wool exchange at that time, so the Australian wool was sent to London independently on its final destination.

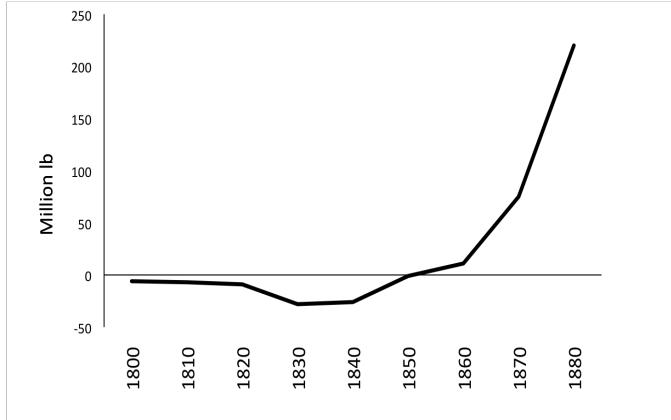


Figure 5: Net export of wool from the British Empire (including Australia) to the rest of the world, 1800-1890. Source: author's calculations using data provided by Barnard (1958). I constructed this series by subtracting total British re-exports to outside the British Empire from total British imports from outside the British Empire. This series is slightly underestimated if small amount of colonial wool were exported to continental Europe directly.

as the colonies simply produced no significant wealth that Britain could plan on extracting (in terms of the model, the constraint $V^H(C, \kappa, \delta) > u$ was binding). As a consequence, most of the local political quarreling regarded the way in which the cost of public expenditure was shared among local groups.⁷⁶ As soon as the wool trade boomed, however, the British control of public revenues became a hot issue. In particular, “land revenues” - the revenue from the sale of Crown land and grazing licenses - came to be seen as the key item of revenue, as they captured a significant part of the value of the wool trade. The colonists wanted these revenues to be not too high, and to be spent on specific public goods (such as immigration).⁷⁷ On the contrary, the British considered land revenues as “...being held in trust by the Crown for the Empire as a whole” (*Ibid.*), and used them to

⁷⁶This quarreling opposed “exclusivists” (the first colonial elite) to “emancipists” (the poorest part of the population, mainly former convicts).

⁷⁷The colonists wanted immigration as the pastoral boom had led to a labour shortage.

impose unwanted expenses upon the colonists.⁷⁸ In terms of the model, Britain imposed $T > 0$ when gains from international trade brought surplus wealth from international trade ($\Pi^H(C, \kappa, \delta)$ increased).

In the 1840s colonial protests against British control of public revenues became more vehement, and the British made a first set of partial concessions in 1842.⁷⁹ Further concessions were made in 1846 and 1848, but the control of fiscal revenues remained in British hands. Then, in 1851 the legislative council - the elective part of colonial governments - formally declared that “*The imperial Parliament should not continue to tax the people of the colony*”, that “*all Offices of trust and emolument, except for the Governorship, should be under local patronage*” and that “*plenary power of legislation should be exercised by the Colonial Legislature*”. Soon after that, ”*a revolution in colonial office thinking*” occurred as the Colonial Office seemed to “*... have felt that resistance to growing colonial pressures might ultimately produce more mischief than the abandonment of this interest could cause*” (*Ibid.*, p. 50). Shortly later, land revenues were surrendered, and self-government conceded (1855) as a corollary on the decision on land (*Ibid.*, p. 50). As in the case of Canada, this was the first key step towards independence, followed by federation (1901) and formal independence (1931).

What determined the success of the colonists in securing fiscal independence in the 1850s? The interpretation suggested by the model is that the relative commercial strength of the colonies may have played an important role in this regard. Until Britain was the

⁷⁸For example, in 1834-1842 the British Treasury transferred the full cost of jails (still hosting thousands of British convicts) on the colonial budget.

⁷⁹In particular, the British conceded that 50% of land revenues would be officially earmarked to be spent on immigration, and that the legislative council would become partially elective.

only industrial powerhouse in the world, Australia competed with the rest of the world (mainly continental Europe) to sell wool to the British Empire, as captured by the case $\delta < \frac{\delta}{\gamma}$ in the model. In this case, it would have been easy by Britain to use trade sanctions to discipline political rebellion in Australia: for example, a discriminatory tariff against Australian export could have badly hit the price of Australian wool, as other countries in Europe had no need for extra wool *and* could be expected to align their trade policy with Britain's in the interest of their own wool-producing industries. Given the dependence of Australia on imported manufactures and the crucial importance of wool as a source of foreign exchange, a significant deterioration in their gains from trade would have had strong welfare effects on the colonies. Thus, a potentially high terms of trade cost of political frictions (a high $\Pi^H(C) - \Pi^H(R)$) reduced the capacity of the colonists to bargain for less or no British control of public revenues (μ and $\bar{\mu}$ were low).

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As the industrial revolution spread to continental Europe and this converted into a net importer of wool, however, the colonies' main export became an internationally sought-after commodity. This - an increase of $\frac{\delta}{\gamma}$ above $\delta(\gamma)$ - is precisely what the model requires for the terms-of-trade cost of revolution to fall. The resulting shift in the balance of power may have then significantly contributed to making the request of self-government by the Australian colonies more difficult to reject. This interpretation of the Australian experience (as well as the interpretation provided above for Canada) suggests that what is often seen as a period of anti-imperialism in British history (1850-1880) can, at least in part, be explained with a fall in British economic power due to the spread of the industrial

revolution to North America and continental Europe.⁸⁰

6 Conclusions

I have studied how the sustainability of colonial power depends on the structure of trade between a colony, her mother country, and the rest of the world. Focusing on factor endowments as the force which shapes the pattern of trade, I have developed a model which links the colony's incentives to revolution to the distribution of world factor endowments. In particular, as the attractiveness of rest of the world's endowments for colonial trade increases, the expected terms-of-trade cost of revolution decreases. This is because optimal trade policy in the rest of the world becomes more benevolent towards the rebel colony, resulting in a stronger and more valuable external support. This fall in the cost of revolution shifts the balance of power between the colony and the mother country in favour of the former, reducing colonial extraction and increasing the likelihood of decolonization.

I have used my model to re-interpret the long-established link between the Seven Years War and the American Revolution. This link can be better understood by looking at the Seven Years War as a large re-allocation of factor endowments (mainly land and sea) from the French to the British Empire, which made the former a better trade partner of the American colonies and thus a more reliable external supporter. I have then studied whether my model can help interpret the fall of the Spanish Empire in early 19th century, and the concession of self-government to Canada and Australia in the second half of the

⁸⁰Notice that the trade liberalizations of the 1840s are unlikely to have affected the balance of power between Britain and Australia, as the wool trade was liberalized since 1824.

same century. It is traditionally argued that the fall of the Spanish Empire was brought about by the invasion of Spain by Napoleon. My model suggests that a deepest economic factor at play was the increasing concentration of manufacturing capital in Britain, due to the industrial revolution. My model also helps understand the fluctuations in the capacity of Spain to extract wealth from the colonies over the centuries (1550-1810). As for Canada and Australia, I have argued that one economic factor which induced Britain to concede self-government was, respectively, the accumulation of timber-processing capital in the United States and of wool-processing capital in continental Europe.

These findings have important implications for the debate on the economic legacy of colonialism. On one hand, my results suggest that some of the most successful European economies may have become so because of a virtuous circle between colonialism and factor accumulation. As Acemoglu, Johnson and Robinson (2005) have pointed out, the opening of Atlantic trade in 16th century affected the European countries involved in different ways: while countries such as Spain and Portugal depleted the wealth of colonial trade in public and private consumption, England used it to improve private incentives to capital accumulation. My paper suggests that, in turn, Britain's high capital intensiveness in the heyday of European colonialism (1760s-1914) allowed her to keep a vast number of land-intensive colonies under control, thus keeping colonial trade highly profitable.

On the other hand, the paper suggests one possible rationale for why colonizers may have wanted to hinder capital accumulation in colonies, as convincingly argued by dependency theorist (see for example Frank, 1971). By diverting resources from the export-oriented, land-intensive sector to the more inward-oriented industrial sector, capital ac-

cumulation threatened to decrease the colony's exposure to international trade, and thus the terms-of-trade cost of revolution faced by the colony. In turn, this would decrease the relative economic power of the mother country, thus decreasing the profitability and sustainability of colonial power. In this interpretation, factor accumulation in colonies might well have been shaped by factors other than comparative advantage, carrying potentially important long-run consequences for colonial economic development.

To the best of my knowledge, this is the first paper to spell out the link between economic fundamentals and independence from external control, in the context of a general equilibrium model of trade. Because of its simplicity, the model can be generalized and extended. For example, one may want to use a continuous trade-policy version of the model to investigate how optimal trade policy is shaped by the need to preserve central control within an empire, a large centralized country, or an area of influence. Alternatively, one could modify the political model to account for heterogeneous colonial agents and the possibility that decolonization affects post-independence politics, or for the role of international investors in inducing governments to decolonize. These, and other interesting issues, remain for future research.

References

[1] Acemoglu, D., S. Johnson and J. Robinson (2001). "Colonial Origins of Comparative Development: an Empirical Investigation", *American Economic Review*, V. 91, N. 5, pp. 1369-1401.

[2] Acemoglu, D. and J. Robinson (2006). *Economic Origins of Dictatorship and Democracy*, Cambridge U. Press.

[3] Acemoglu, D., S. Johnson and J. Robinson (2005). “The Rise of Europe: Atlantic Trade, Institutional Change and Economic Growth”, in *American Economic Review*, V. 95, N. 2, pp. 546-579.

[4] Alesina, A. and E. Spolaore (1997). “On the Number and Size of Nations” *Quarterly Journal of Economics*, V. 112, N. 4, pp. 1027-1056.

[5] Alesina, A. and E. Spolaore (2003). *The Size of Nations*, Cambridge (MA), MIT Press.

[6] Baak, B. (2004). “British Versus American Interests in Land and the War of American Independence”, *Journal of European Economic History*, V. 33, N. 3, pp. 519-555.

[7] Bagwell, K. and R. Staiger (1999). “An Economic Theory of GATT” *American Economic Review*, V. 89, N. 1, pp. 215-248.

[8] Bagwell, K. and R. Staiger (2005). *The Economics of the World Trade System*, Cambridge (MA), MIT Press.

[9] Barnard, J. (1958). *The Australian Wool Market 1840-1900*, Melbourne U. Press.

[10] Bjork, G. (1964). “The Weaning of the American Economy: Independence, Market Changes, and Economic Development”, *The Journal of Economic History*, V. 24, N. 4, pp. 541-560.

[11] Bulmer-Thomas, V. (1998). “British Trade with Latin America in the Nineteenth and Twentieth Centuries”, in *Occasional Papers*, U. of London, Institute of Latin

American Studies.

- [12] Conrad, M., A. Finkel and C. Jaenen (1993). *History of the Canadian Peoples – Beginnings to 1867*, Toronto, Copp Clark Pitman Ltd.
- [13] Creighton, D. (1937). *The Commercial Empire of the St Lawrence, 1760-1850*, Toronto, the Ryerson Press.
- [14] Creighton, D. (1966). *Dominion of the North: a History of Canada*, Toronto, the Macmillan Company of Canada Ltd.
- [15] Dixit, A. and V. Norman (1980). *Theory of International Trade*, Cambridge U. Press.
- [16] Easterbrook, W. and H. Aitken (1956). *Canadian Economic History*, Toronto, The Macmillan Company of Canada Ltd.
- [17] Eccles, W. (1972). *France in America*, New York, Harper and Row.
- [18] Fisher, J. (1981). “Imperial Free Trade and the Spanish Economy, 1778-1796”, in *Journal of Latin American Studies*, V. 13, N. 1, pp. 21-56.
- [19] Fisher, J. (1998). “Commerce and Imperial Decline: Spanish Trade with Spanish America, 1797-1820”, in *Journal of Latin American Studies*, V. 30, pp. 459-479.
- [20] Frank, A. (1971). *Capitalism and Underdevelopment in Latin America – Historical studies of Chile and Brazil*, Penguin Books.
- [21] Galbraith, J. (1994). *A Journey Through Economic Time: A Firsthand View*, Boston and New York, Houghton Mifflin Co.

[22] Garcia-Baquero Gonzales, A. (1976). *Cadiz y el Atlantico, 1717-1778*, Escuela de Estudios Hispano-Americanos, 2 vols.

[23] Gipson, L. (1950). "The American Revolution as an Aftermath of the Great War for the Empire, 1754-1763" in *Political Science Quarterly*, V. 65, N. 1, pp. 86-104.

[24] Gould, C. (1939). "Trade Between the Windward Islands and the Continental Colonies of the French Empire, 1683-1763", *The Mississippi Valley Historical Review*, V. 25, N. 4, pp. 473-490.

[25] Greene, J. (1980). "The Seven Years War and the American Revolution: the Causal Relationship Reconsidered", in *Journal of Imperial and Commonwealth History*, V. 8, N. 2, pp. 85-105.

[26] Grimal, H. (1978). *Decolonization: the British, French, Dutch and Belgian Empires*, London, Routledge.

[27] Grossman, H. and M. Iyigun (1995). "Extralegal Appropriation and the Profitability of Colonial Investment", *Economics and Politics*, V. 7, pp. 229-241.

[28] Grossman, H. and M. Iyigun (1997). "Population Increase and the End of Colonialism," *Economica*, V. 64 (3), pp. 483-493.

[29] Hamilton, E. (1937). "The Decline of Spain", in *Economic History Review*, V. 8, N. 2, pp. 168-179.

[30] Hanson, J. R. II (1973). "The Nineteenth Century Exports of the Less Developed Countries", in *Journal of Economic History*, V. 33, N. 1, pp. 305-308.

[31] Head, K., T. Mayer and J. Ries (2010). “The Erosion of Colonial Trade Linkages after Independence” forthcoming in the *Journal of International Economics*.

[32] Holland, R. (1985). *European Decolonization, 1918-1981: an Introductory Survey*, London, Macmillan.

[33] Hutson, J. (1980). *John Adams and the Diplomacy of the American Revolution*, Kentucky (US), U. of Kentucky Press.

[34] Jensen, M. (1969). “The American Revolution and American Agriculture”, in *Agricultural History*, V. 43, N. 1, pp. 107-124.

[35] Jillson, C. and R. Wilson (1994). *Congressional Dynamics: Structure, Co-ordination and Choice in the First American Congress, 1774-1789*, Stanford U. Press.

[36] Johnson, H. (1954). “Optimum Tariffs and Retaliation” in *Review of Economic Studies*, V. 21, N. 2, pp. 142-153.

[37] Kaufmann, W. (1951). *British Policy and the Independence of Latin America, 1804-1828*, New Haven, Yale U. Press.

[38] La Force, J. Clayburn (1964). “Technological Diffusion in the 18th Century: the Spanish Textile Industry” in *Technology and Culture*, V. 5, N. 3, pp. 322-343.

[39] Lower, A, W. Carrothers and S. Saunders (1938). *The North American Assault on the Canadian Forest: a History of the Lumber trade between Canada and the United States*, Toronto, the Ryerson Press.

[40] Lynch, J. (1965-1969). *Spain under the Habsburgs*, 2 Vols., Blackwell.

[41] Lynch, J. (1973). *The Spanish American Revolutions, 1808-1826*, London, Weidenfeld and Nicolson.

[42] Lynch, J. (1992). “The Institutional Framework of Colonial Spanish America”, in *Journal of Latin American Studies*, V. 24, pp. 69-81.

[43] Marr, W. and D. Paterson (1980). *Canada: an Economic History*, Gage Publishing Limited.

[44] Martin, P., T. Mayer and M. Thoenig (2007). “Make Trade Not War?” *Review of Economic Studies*, V. 75, pp. 865-900.

[45] McCusker, J. (1970). “The Rum Trade and the Balance of Payments of the Thirteen Continental Colonies, 1650-1775”, *The Journal of Economic History*, V. 30, N. 1, p. 244-247.

[46] McMinn, W. (1979). *A Constitutional History of Australia*, Melbourne, Oxford U. Press.

[47] McIntyre, D. (1977). *Commonwealth of Nations: Origins and Impact*, Minneapolis, U. of Minnesota Press.

[48] Nash, R. (1992). “South Carolina and the Atlantic Economy in the Late Seventeenth and Eighteenth Centuries”, *The Economic History Review*, V. 45, N. 4, pp. 677-702.

[49] Nunn, N. (2008). “The Long Term Effects of Africa’s Slave Trades” *Quarterly Journal of Economics*, V. 123, N. 1, pp. 139-176.

[50] Ostrander, G. (1956). “The Colonial Molasses Trade”, *Agricultural History*, V. 30, N. 2, pp. 77-84.

[51] Pitkin, T. (1835). *A Statistical View of the Commerce of the United States of America*, New Haven.

[52] Platt, D. C. (1972). *Latin America and British Trade, 1806-1914*, London, Adam and Charles Black.

[53] Prados de la Escosura, L. (1984). “La Evolución del Comercio Exterior, 1790-1929”, in *Papeles de la Economía Española*, N. 20, pp. 133-154.

[54] Schuyler, R. L. (1945). *The Fall of the Old Colonial System a Study in British Free Trade, 1770-1870*, Oxford, Oxford U. Press.

[55] Shann, E. (1930). *An Economic History of Australia*, Cambridge, Cambridge U. Press.

[56] Schlesinger, A. M. (1919). *The Colonial Merchants and the American Revolution, 1763-1776*, New York, Atheneum.

[57] Schumpeter, E. (1960). *English Overseas Trade Statistics*, Oxford, Clarendon Press.

[58] TePaske, J. J. and H. S. Klein (1981). “The Seventeenth-Century Crisis in New Spain: Myth or Reality?”, in *Past and Present*, N. 90, pp. 116-135.

[59] TePaske, J. J. (1983). “New World silver, Castile, and the Philippines, 1590-1800”, in John F. Richards, Ed., *Precious metals in the later medieval and early modern worlds*, Durham (NC), Carolina Academic Press.

[60] Thomas, R. P. (1965). "A Quantitative Approach to the Study of the Effects of British Imperial Policy Upon Colonial Welfare: Some Preliminary Findings", *The Journal of Economic History*, V. 25, N. 4, pp. 615-638.

[61] Tyler, J. W. (1986). *Smugglers and Patriots: Boston Merchants and the Advent of the American Revolution*, Northeastern U. Press.

[62] Walker, G. J. (1979). *Spanish Politics and Imperial Trade, 1700-1789*, Mac Millan Press.

[63] Wilson, C. (1960). "Cloth Production and International Competition in the Seventeenth Century", in *Economic History Review*, V. 13, N. 2, pp. 209-221.