

Colonial wars and trade restrictions: Fighting for exclusive trading rights

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Abstract. This paper develops a model of colonial wars and trade restrictions, in which two metropolises compete for control over a colony's trade policy. In equilibrium, the metropolis that gains control can improve its terms of trade by restricting its rival's access to colonial trade. However, implementing these restrictions often affects trade between the two metropolises themselves. Three equilibrium outcomes can arise: (i) peace with free trade, when both metropolises value trade with each other above colonial trade; (ii) war with exclusive colonial trade, when both prefer colonial trade to mutual trade; or (iii) war with either free or exclusive colonial trade, depending on whether the victor prioritizes trade with its rival over colonial trade. The model captures central features of the mercantilist era—rapid expansion of overseas commerce, colonial conflicts, and restrictive trade policies—and provides insights into the eventual decline of mercantilism.

Résumé. *Guerres coloniales et restrictions commerciales : lutte pour des droits commerciaux exclusifs.* Cet article élabore un modèle de guerres coloniales et de restrictions commerciales, dans lequel deux métropoles rivalisent pour le contrôle de la politique commerciale d'une colonie. À l'équilibre, la métropole qui obtient le contrôle peut améliorer ses termes de l'échange en restreignant l'accès de son rival au commerce colonial. Cependant, la mise en œuvre de ces restrictions affecte souvent le commerce entre les deux métropoles elles-mêmes. Trois résultats d'équilibre peuvent survenir : (i) la paix avec le libre-échange, lorsque les deux métropoles accordent plus d'importance au commerce entre elles qu'au commerce colonial; (ii) la guerre avec un commerce colonial exclusif, lorsque les deux préfèrent le commerce colonial au commerce mutuel; ou (iii) la guerre avec le libre-échange ou un commerce colonial exclusif, selon que le vainqueur privilégie le commerce avec son rival par rapport au commerce colonial. Le modèle saisit les caractéristiques essentielles de l'ère mercantiliste – expansion rapide du commerce outre-mer, conflits coloniaux et politiques commerciales restrictives – et offre un éclairage sur le déclin éventuel du mercantilisme.

JEL classification: D74, F13, F5

[T]he first regulations [imposed by European nations on their colonies] were always in view to secure . . . the monopoly of [colonial] commerce; to confine their market, and to enlarge [the mother country's] own at their expense. . . . The best of them all, that of England, is only somewhat less illiberal and oppressive than that of any of the rest.

–Adam Smith, *Wealth of Nations*, Book IV, Vol. 2, Chapter VII: “Of Colonies, Part Second: Causes of the Prosperity of New Colonies,” p. 103.

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1. Introduction

THREE MAIN THEORETICAL MECHANISMS LINK INTERNATIONAL trade and conflict. The first is the resource curse (Skaperdas and Syropoulos 2001), where trade increases the value of disputed resources, incentivizing military buildup. The second, factor price equalization (Syropoulos 2006; Garfinkel et al. 2015), argues that trade intensifies conflict by equalizing goods and factor prices, creating a more level playing field for arms races. Both explain why increased trade has often coincided with war. In contrast, the third mechanism highlights a pro-peace effect (Jackson and Nei 2015), where trade raises the opportunity cost of conflict, discouraging hostilities in order to protect economic gains. While these mechanisms capture key aspects of the trade-conflict relationship, they do not explain the coexistence of trade restrictions and conflict. To address this gap, we develop a model where both arise as equilibrium outcomes. The model sheds light on the link between colonial wars and the extensive trade restrictions and mercantilist policies imposed by European powers between 1500 and 1800.

The model is a two-period game in which two metropolises compete for control of a colony. The world economy follows a simple Ricardian structure with three countries (two metropolises and a colony), three tradable inputs, and a final good used for consumption or arms production. At the beginning of each period, one metropolis controls the colony. During the period, production, trade and arms decisions take place, followed by a contest over control of the colony, where the probability of winning depends on relative arms investment. The winner sets both its own trade policy and that of the colony. Specifically, the winner chooses from three trade regimes: (i) free trade, which imposes no restrictions on trade with the colony or the rival metropolis; (ii) weak mercantilism, which allows trade with the rival metropolis but forbids the colony from doing so; and (iii) strong mercantilism, which permits trade only between the winner and the colony. The losing metropolis can either accept the trade regime imposed by the winner or move to autarky. We analyze two settings: one in which the winner chooses freely among all three trade regimes and another where the choice is limited to free trade or strong mercantilism. Finally, we consider two scenarios for the production possibility frontier (PPF) between consumption and arms: one where the opportunity cost of arms is constant (i.e., a linear frontier) and another where it decreases with aggregate output.

When all three trade regimes are feasible, the winner of the colonial war in the first period invariably chooses weak mercantilism in the second period, while both metropolises arm preemptively. Each fights to exclude the other from colonial trade, because doing so improves its terms of trade. This exclusion mechanism benefits the winner but leaves both the colony and the excluded metropolis worse off than under free trade. Although inefficient, weak mercantilism maximizes the welfare of the metropolis that controls trade.

The primary inefficiency in our setting arises from both metropolises engaging in pure rent-seeking, diverting resources toward arms to secure market power by restricting the rival's access to colonial goods. In the simplest case, where the PPF between arms and consumption is linear, the metropolis initially controlling the colony also selects weak mercantilism in the first period. This occurs because the trade regime choice does not influence the opportunity cost of arms, eliminating any strategic incentive to deviate from weak mercantilism.

When the winner can choose only between free trade and strong mercantilism, the set of possible equilibria expands. If both metropolises value mutual trade more than colonial trade, they will prefer free trade. Anticipating that free trade will prevail regardless of who wins, neither has an incentive to invest in arms, leading to an efficient outcome. Conversely, if both prioritize colonial trade over mutual trade, they will favour strong mercantilism. In this

case, the winning metropolis trades freely with its colony while excluding the loser, leading to inefficiencies. Trade barriers reduce overall gains from trade, and *ex ante*, both metropolises invest in arms to secure control. A third possibility arises when one metropolis prefers free trade while the other favours strong mercantilism. Here, the trade regime depends on the war's outcome. The metropolis favouring free trade arms itself to prevent exclusion from colonial trade, while the promercantilist metropolis arms itself to secure exclusive colonial trade.

As discussed earlier, when the PPF between arms and consumption is linear, the metropolis initially controlling the colony follows its economic preference without strategic deviation. A pro-free trade metropolis always selects free trade, and a promercantilist metropolis always chooses strong mercantilism. Because the trade regime does not influence the opportunity cost of arms, neither metropolis has a military incentive to deviate from its economically preferred policy.

While our primary focus has been on how metropolises compete to impose trade restrictions on colonial trade, our model also reveals the inverse relationship: how trade restrictions influence military power and conflict. A metropolis may exclude its rival from colonial trade not only for economic gain but also to weaken its rival's economy and gain a military advantage in an impending conflict. This strategic use of trade restrictions for military advantage depends on the structure of the PPF, which determines resource allocation between consumption and military buildup. In particular, note the following strategic considerations:

- *Linear PPF*: When the PPF is linear, the opportunity cost of arms remains constant. Each unit of military investment always requires the same sacrifice in consumption. As a result, trade policy has no impact on military strength, since restricting trade does not alter the relative cost of producing arms.
- *Nonlinear PPF*: Suppose that a nonlinear PPF causes the opportunity cost of arms to decrease as total output rises. This enables a wealthier metropolis to expand its military more efficiently. Then, restricting trade weakens a rival both economically and militarily by limiting its capacity to arm effectively. As a result, the controlling metropolis may impose strong mercantilism preemptively to degrade its rival's war capacity. More generally, this strategic link alters prewar trade policy calculus. Weak mercantilism is not necessarily the prewar equilibrium trade regime, because the controlling metropolis may prefer to sacrifice short-term economic output for a higher probability of winning the war and securing sustained colonial control.

Further strategic considerations arise when the winner is restricted to choosing between free trade and strong mercantilism. Even a metropolis that economically favours free trade may impose strong mercantilist policies defensively, anticipating war. When the metropolis initially controlling the colony prefers strong mercantilism while its rival favours free trade, trade liberalization necessitates armed conflict, because the rival must first seize colonial control to dismantle trade restrictions.

1.1. Related literature

Four bodies of literature are related to this paper.

1.1.1. Formal models of conflict and international trade

Several studies have explored the relationship between trade and conflict (e.g., Skaperdas and Syropoulos 2001; Syropoulos 2006; Garfinkel et al. 2015; Jackson and Nei 2015; Lopez Cruz and Torrens 2019). This paper builds on that literature by examining how trade restrictions influence conflict dynamics.

Unlike resource-curse models, where conflict arises over resource control but, ultimately, the winner favours free trade, our model focuses on exclusive trading rights, where trade restrictions emerge as an equilibrium outcome. A metropolis that controls a colony's trade policy can restrict rival access, leveraging a monopoly-monopsony position. Unlike in resource-based conflicts, free trade is not necessarily the dominant strategy for the winner. On the contrary, trade restrictions themselves become a strategic instrument for economic and military power.

Gartzke and Rohner (2011) is the work most closely related to ours, modelling colonial competition with fixed gains from trade and exogenous mercantilist restrictions. However, our model diverges significantly by endogenizing both gains from trade, derived from economic fundamentals, and trade policy. This crucial distinction allows mercantilist restrictions to emerge as strategic equilibrium outcomes, rather than being imposed as a fixed constraint.

1.1.2. International trade agreements

Our model departs from modern trade agreement theories, notably Bagwell and Staiger (1999), which posit that agreements mitigate negative trade policy externalities through helping participants internalize the latter. Their framework, however, assumes independent trade policies, unlike in the colonial era, where metropolises dictated both their own and their colonies' trade policies. This bilateral control incentivized trade manipulation and conflict, contrasting sharply with the cooperative basis of modern agreements. Our model suggests that decolonization fundamentally altered incentives for conflict, shifting nations away from trade-driven wars toward negotiated tariff reductions.

1.1.3. History of colonialism and mercantilism

Our paper contributes to the extensive literature on colonialism and mercantilism (e.g., Findlay and O'Rourke 2007). Historians debate the significance of colonial rents in shaping European economic development. Some, such as proponents of the primitive accumulation hypothesis in Marxist historiography, argue that colonial wealth was fundamental to the early stages of European capitalism. Others contend that only European elites benefited, while colonies were a net burden on the broader economy. Without taking a position in this debate, our paper formally models a mechanism through which metropolises extract rents from their colonies and, crucially, links this process to colonial wars. Our model also provides new insights into colonial history. In particular, when metropolises can choose between only free trade and strong mercantilism, colonial subjects may have had a stake in the outcome of colonial wars, because the victor's trade policy would directly affect their economic well-being. This suggests that in some cases, colonial independence movements may have been shaped by which metropolis controlled trade policy rather than simply by opposition to colonial rule itself.

1.1.4. The trade-conflict nexus

The idea that trade fosters peace, first proposed by Montesquieu and Kant, has been formalized in economic models such as that of Garfinkel and Syropoulos (2024), who argue that gains from trade increase incentives for negotiated conflict resolution.¹ Yet, empirical evidence presents a more complex picture. Polacheck, Polacheck et al., Mansfield (1995) and Oneal and Russett (1999) find that trade reduces conflict, supporting the trade-peace

1 See also Stein (2003).

hypothesis.² Furthermore, Martin et al. (2008) show that while strong bilateral trade ties can reduce conflict, a dense network of trade partners may lower the cost of war by providing alternative markets, making states less dependent on any single trading relationship. These findings highlight the ambiguous effect of trade on conflict dynamics.³ Our model contributes to this debate by demonstrating that, particularly during the mercantilist era, bilateral trade did not necessarily reduce conflict. Instead, trade and war could coexist, as metropolises fought for exclusive control over colonial markets. Moreover, the logic of our model extends beyond the mercantilist period. Berger et al. (2013) document how, during the Cold War, the United States used political and military power to reshape global trade—not through direct territorial control but through the manipulation of trade policies in weaker nations. This approach parallels how metropolises imposed trade restrictions on colonies to consolidate their economic dominance.

The rest of the paper is organized as follows. Section 2 develops the model. Section 3 derives the economic equilibrium under each trade policy regime. Section 4 analyzes equilibrium trade policies and arms choices when metropolises can select from all trade regimes. Section 5 focuses on the case where they must choose between free trade and strong mercantilism. Finally, Section 6 concludes by discussing the model's historical implications for colonial disputes and mercantilism and explores potential extensions, including the role of domestic distributive effects in shaping trade restrictions.

2. A simple model of colonial wars and trade policy

The model comprises three countries. Each country utilizes its labour endowment to produce three tradable inputs, which are then used to manufacture a final good. This good is allocated to either military production (guns) or consumption. Two countries are independent political entities (i.e., metropolises), each capable of unilaterally establishing trade policies and organizing national defence through gun production. The third country is a colony, permanently subject to the control of one of the independent powers, and it therefore cannot set its own trade policies or maintain an independent defence force. The metropolises compete for colonial control through a contest. Their military arsenals determine the probability of victory, based on a standard contest success function. The victor gains the authority to dictate the colony's trade regime. Table 1 summarizes the functional forms and notation used throughout the paper.

There are only two periods (i.e., $t = 1, 2$), and the payoff function of country j is given by $V_t^j = \mathbf{E}_t \left(C_t^j + \delta C_{t+1}^j \right)$, where $\delta \in (0, 1)$. The timing of events within period t is as follows:

1. *Trade regime*: The metropolis that controls the colony sets its own trade policy and the trade policy of the colony, while the other metropolis observes these choices and then sets its own trade policy. Let τ_t denote the trade regime that results from these decisions.

2 The effects of conflict on trade is the focus of analysis in Blomberg and Hess (2006), Glick and Taylor (2010), Michaels and Zhi (2010), and Li et al. (2021). See Li et al. (2021) for a thorough review of the empirical literature on this subject.

3 These results remain contested. Some scholars question the empirical robustness of trade-peace claims (e.g., Barbieri 1996, 2002; Beck et al. 1998; Gartzke 2007), while others argue that existing models lack a strong theoretical foundation. For instance, most bilateral trade ties are small relative to a country's GDP or the cost of war, making their impact on conflict minimal.

TABLE 1

World economy: Functional forms

Component	Definition	Explanation
Countries	Three countries indexed by $j = 1, 2, 3$.	Countries 1 and 2 are independent political entities. Country 3 is a colony.
Labour endowments	Each country is endowed with $\bar{L}^j > 0$ units of labour.	Labour can be used in three industries. Naturally, $\sum_i L_{i,t}^j = \bar{L}^j$.
Tradable inputs	Each country can produce three tradable inputs ($i = 1, 2, 3$) with $Q_{i,t}^j = L_{i,t}^j/a_i^j$ where $a_i^j > 0$.	Each country j uses its production of input i , $Q_{i,t}^j$, to produce a final nontradable good.
Nontradable final good	Each country produces a nontradable good: $Q_t^j = (X_{1,t}^j)^{\alpha_1} (X_{2,t}^j)^{\alpha_2} (X_{3,t}^j)^{\alpha_3}$ with $0 < \alpha_i < \sum_i \alpha_i = 1$.	$X_{i,t}^j$ is the quantity of input i used by country j in period t .
PPF	The final good serves as a consumption good (C_t^j) or for military spending (G_t^j): $Q_t^j = C_t^j + p_G^j G_t^j$.	The opportunity cost of guns is $p_G^j = a_G^j (Q_t^j)^{-\gamma}$ with $\gamma \geq 0$ for $j = 1, 2$ and $p_G^3 = \infty$.
Contest success function	$q_t^j = \frac{(G_t^j)^m}{\sum_{k=1,2} (G_t^k)^m}$ if $\sum_{k=1,2} (G_t^k)^m > 0$, $q_t^j = \frac{1}{2}$ if $\sum_{k=1,2} (G_t^k)^m = 0$ for $j = 1, 2$.	q_t^j is the probability of winning, and $m \in (0, 1]$ is a measure of the effectiveness of conflict.

NOTES: PPF, production possibility frontier.

2. *Production and trade*: Countries produce and trade inputs. Then, they produce the nontradable final good.
3. *Guns choices*: Countries 1 and 2 independently and simultaneously select their levels of arming—that is, $G_t^j \in [0, Q_t^j/p_G^j]$ —for $j = 1, 2$. The nontradable final good that is not invested in guns is consumed; that is, $C_t^j = Q_t^j - p_G^j G_t^j$.
4. *War*: Nature determines which country wins the war and, hence, gains control over country 3 (and the right to select the trade policy of country 3) at the beginning of period $t + 1$. Country j wins with probability q_t^j .

Next, we explain and discuss each stage of the game.

2.1. Trade regime

We consider three possible trade regimes: free trade, weak mercantilism, and strong mercantilism, denoted by *FT*, *WM* and *SM*, respectively.⁴ Under free trade, the controlling metropolis imposes no trade restrictions on any trade flows—either with the colony or with its rival metropolis. Under weak mercantilism, the controlling metropolis allows free trade with its rival but prohibits the colony from trading with its rival. Finally, under strong mercantilism, the controlling metropolis restricts all trade only to itself and the colony, banning any trade with the rival metropolis. The noncontrolling metropolis has only two choices: accept the imposed trade regime or opt for complete autarky.

⁴ Complete autarky could be considered a possible alternative for the controlling metropolis, but it is always dominated by strong mercantilism, which allows trade with the colony while excluding the rival.

Note that we do not explicitly model how trade restrictions are implemented and enforced. Historically, trade restrictions were enforced through two primary strategies: control of trade routes and direct colonization. Prior to the formal colonial era, competition for trade monopolies largely took place over shipping lanes, ports and transit points. As monopolizing trade through transit became more difficult, European powers shifted toward direct colonial control to secure exclusive access to resources and markets.⁵ Controlling ports and key infrastructure was often essential for both monopolizing trade routes and enforcing colonial trade restrictions, rendering these strategies complementary.

It is also worth mentioning that neither weak nor strong mercantilism fully exhausts the possibilities to extract a surplus from the colony. In addition to trade restrictions, metropolises levied tariffs on colonial goods to further manipulate terms of trade, or they resorted to direct resource plunder and forced labour. To maintain tractability while capturing the essential historical role of trade restrictions, our model limits the choice set to free trade, weak mercantilism and strong mercantilism. As pointed out by Adam Smith (see opening quote), exclusive foreign trade was the first policy that all European metropolises imposed on their New World colonies.

2.2. Production and trade

We introduce the following assumption, which restricts the allocation of resources when countries trade and will help us to characterize the equilibrium of the model.

ASSUMPTION 1. Unit labour requirements in the production of tradable inputs satisfy

- (a) $a_1^3 = a_2^3 = \infty$,
- (b) $\frac{\alpha_1 a_1^1}{(\alpha_1 + \alpha_2) \alpha_2 a_1^2} < \frac{\bar{L}^1}{\bar{L}^2} < \frac{(\alpha_1 + \alpha_2) \alpha_1 a_2^1}{\alpha_2 a_2^2}$, and
- (c) $\frac{\bar{L}^j}{\bar{L}^3} < \min \left\{ \frac{\alpha_j}{1 - \alpha_1 - \alpha_2}, \frac{(\alpha_1 + \alpha_2)^{\frac{1 - \alpha_j + \alpha_j}{1 - \alpha_1 - \alpha_2}}}{1 - \alpha_1 - \alpha_2} \right\} \frac{a_3^j}{a_3^3}$ for $j = 1, 2$.⁶

Assumption 1(a) stipulates that the colony cannot produce inputs 1 and 2, relying on international trade for their acquisition. Assumptions 1(b) and 1(c) govern the distribution of labour endowments among countries to ensure that, under each trade regime, relative productivities induce specialization in inputs where countries possess a comparative advantage. These assumptions prevent scenarios where international trade has no impact on a country's terms of trade, thereby guaranteeing that trade policies effectively shape production and exchange patterns.

2.3. Guns choices

We consider two possible scenarios for the opportunity cost of guns. In the first scenario, where $\gamma = 0$, the cost is fixed at $p_G^j = a_G^j$. This implies that while gun costs may vary across

⁵ Before direct colonization, states and companies fought mainly over control of trade routes.

Arab empires clashed with the Portuguese over Indian Ocean shipping lanes. Venice famously funded a Crusade on the condition that the Crusaders sack Constantinople, its key trading rival. Later, European crown companies (e.g., the Dutch East India Company, the English East India Company) operated as both commercial and military entities, engaging in wars to secure monopolies.

⁶ In online appendix A.1 we consider a more general version of assumption 1 that does not require $a_1^3 = a_2^3 = \infty$. All our results hold under this generalization of assumption 1.

countries, they remain unaffected by a country's total output or the prevailing trade regime. In the second scenario, where $\gamma > 0$, the opportunity cost of guns $p_G^j = a_G^j(Q_t^j)^{-\gamma}$ is strictly decreasing in total output.⁷ In this case, higher output lowers the cost of arming, meaning that trade policies—by influencing output—can indirectly affect military investment. The relative cost of arming between the two metropolises is $\frac{p_G^j}{p_G^i} = \left(\frac{a_G^j}{a_G^i}\right) \left(\frac{Q_t^{-j}}{Q_t^j}\right)^\gamma$. Thus, if a trade regime increases Q_t^j/Q_t^{-j} , then country j faces a lower relative cost of arming compared to its rival.⁸

Guns are assumed to fully depreciate after one period, making second-period arming irrelevant. Since labour is not directly used in gun production, resource allocation between consumption and military spending does not distort input markets, significantly simplifying the analysis.⁹ Finally, while some gun trade did occur historically, strict regulations often limited these transactions, especially in wartime. For simplicity, we assume that guns are nontradable.

2.4. War

We do not distinguish between open conflict (i.e., war in *stricto sensu*) and settlement under the shadow of conflict (i.e., an agreement—supported and enforced by guns—to peacefully adjudicate the disputed colony). In a well-known paper, Fearon (1995) shows that if contenders are allowed to bargain after guns choices have been made and open conflict destroys part of the disputed prize, then there are always peaceful deals that Pareto dominates open conflict, unless we introduce asymmetric information or commitment problems.¹⁰ Thus, if

7 There are several ways to rationalize this specification. For example, assume that the production function of guns is given by $G_t^j = (Q_t^j)^\gamma (X_{G,t}^j/a_G^j)$, where $X_{G,t}^j$ is the amount of Q_t^j employed in the production of guns, $a_G^j > 0$ is a parameter that shapes the productivity of the guns industry in country j , and $(Q_t^j)^\gamma$ captures an output externality in the production of guns. Then, from profit maximization in the guns industry we have $p_G^j = a_G^j(Q_t^j)^{-\gamma}$.

Alternatively, assume that the government of country j must tax Q_t^j in order to finance guns and that such taxation produced a deadweight loss. In particular, assume that

$C_t^j = Q_t^j - T^j(Q_t^j) X_{G,t}^j$, where $T^j(Q_t^j) = \left(\frac{\bar{T}}{Q_t^j}\right)^\gamma \geq 1$ is the total cost of taxation, and the government budget constraint is given by $X_{G,t}^j = \tilde{a}_G^j G_t^j$. Thus, $Q_t^j = C_t^j + p_G^j G_t^j$, where $p_G^j = a_G^j(Q_t^j)^{-\gamma}$ and $a_G^j = \tilde{a}_G^j(\bar{T})^\gamma$.

8 This mechanism parallels findings in Garfinkel et al. (2022), who show that a smaller country may benefit more from trade by reinvesting its gains into military power, shifting the balance of conflict. Anticipating this, a larger country may choose to limit trade with its smaller rival. Although our model does not allow investment in productive capital, it captures a similar link between relative income and military costs in a simplified form.

9 Earlier versions of the model assumed that guns were produced with labour, but this led to analytical intractability in solving for optimal arming.

10 Fearon (1995) also considers indivisibilities of the disputed prize as another theoretically sound reason behind open conflict. However, Powell (2006) convincingly argues that indivisibilities are indeed a hidden commitment problem. After all, countries can always agree to conduct a lottery in which the probability that the prize is adjudicated to each party is identical to the probability of winning a war, which will avoid the destruction associated with open conflict. Also see Garfinkel and Skaperdas (2000) for a formal model in which open conflict emerges in equilibrium because adversaries cannot enforce long-term contracts on arming (i.e., due to a commitment problem).

stage 4 is augmented with a bargaining substage in which metropolises enter into negotiations to adjudicate the colony, open conflict will be avoided.¹¹ Historically, it seems that during the mercantilist era, both ways of adjudicating colonies played a role. Sometimes, colonies were acquired in a bargaining under the shadow of conflict, whereas on other occasions, colonies were simply taken from rivals by military force or changed hands as part of a postwar settlement agreement. In any case, the relevant mechanism in the model is that each metropolis invests in guns to increase its probability of gaining control of the trade policy of the colony.

Finally, note that the outcome of war at the end of period t is which metropolis will control the colony at the beginning of period $t + 1$. Thus, guns are an investment in period t to increase the chance of winning a contest that produces a prize (control of a colony) in period $t + 1$. For the initial period (i.e., $t = 1$), we assume that one of the metropolises controls the colony.

To characterize the equilibrium, we proceed as follows. First, we compute the period- t economic equilibrium for any trade policy regime. Second, we characterize trade policy and guns choices in each period.

3. Economic equilibrium

The world economy is a combination of three simple Ricardian economies. Depending on the trade policy regime, some foreign transactions can be banned. We study each trade policy regime, starting with the least restrictive (i.e., free trade), moving to the somewhat restrictive (i.e., weak mercantilism) and, finally, the most restrictive (i.e., strong mercantilism).

3.1. Free trade

Suppose that in period t there is free trade. In online appendix A.1.1 we show that if assumption 1 holds, then country j specializes in input j . Let's denote by $\bar{Q}^j (FT)$ the aggregate output in country j under free trade.

3.2. Weak mercantilism

Suppose that in period t country $j \in \{1, 2\}$ is the controlling metropolis and accepts inter-metropolis trade, but confines its colony's trade to itself. Thus, metropolis j blocks exports from the colony to the other metropolis (which we denote by $-j$).¹² As a consequence, $-j$ must produce input 3. In online appendix A.1 we show that if assumption 1 holds, then country j produces only the input for which it has a comparative advantage, $-j$ produces the input for which it has a comparative advantage and input 3, and country 3 produces input 3. Let's denote by $\bar{Q}^j (WM, j)$, $\bar{Q}^{-j} (WM, j)$, and $\bar{Q}^3 (WM, j)$, the aggregate output of each country under weak mercantilism when metropolis j controls the colony.

3.3. Strong mercantilism

Suppose that in period t country $j \in \{1, 2\}$ is the controlling metropolis and only accepts trade with its colony. In online appendix A.1.1, we show that if assumption 1 holds, then metropolis j produces inputs 1 and 2, the colony produces input 3, and metropolis $-j$ is

11 Strictly speaking, the open conflict equilibrium does not disappear, but metropolises can always coordinate in another equilibrium with armed settlement that Pareto dominates war.

12 Re-exports to metropolis $-j$ are also blocked.

pushed to autarky. Let's denote by $\bar{Q}^j(SM, j)$, $\bar{Q}^{-j}(SM, j)$, and $\bar{Q}^3(SM, j)$, the aggregate output of each country under strong mercantilism when metropolis j controls the colony.

4. Trade regime and guns choices

In this section, we characterize the equilibrium trade regime as well as the equilibrium guns choices in each period. We proceed through backward induction. Decisions in period $t = 2$ can be seen as after-conflict choices and, hence, one metropolis has unchallenged control of the colony. On the contrary, decisions in period $t = 1$ can be interpreted as choices before war has occurred (i.e., when one metropolis has initial control over the colony, but the other metropolis can challenge it).

4.1. Guns choices after war (G_2^j)

Suppose that $t = 2$ and countries have already produced and traded inputs as well as produced the nontradable final good. Let Q_2^j be the output level (i.e., the amount of the nontradable final good) produced by metropolis $j = 1, 2$ in period 2. Then, the payoff of metropolis j in $t = 2$ is given by $V_2^j = C_2^j = Q_2^j - p_G^j G_2^j$, which clearly adopts a unique global maximum at $G_2^j = 0$. Intuitively, since after period 2 there is no future period, metropolises do not have any incentive to invest in guns. Therefore:

LEMMA 1. *Guns choices after war.* *The unique Nash equilibrium level of arming in $t = 2$ is $G_2^j = 0$ for all $j = 1, 2$.*

4.2. Trade regime after war (τ_2)

The following lemma characterizes the trade regime in period $t = 2$.

LEMMA 2. *Trade regime after war.* *Suppose that assumption 1 holds. Then, the unique equilibrium trade regime in $t = 2$ is weak mercantilism (i.e., if metropolis j controls the colony in $t = 2$, then $\tau_2 = (WM, j)$).*

Proof. In online appendix [A.1.2](#). ■

Weak mercantilism presents a highly advantageous trade regime for the metropolis controlling the colony. Compared to free trade, it eliminates a rival buyer from the colonial input market. Compared to strong mercantilism, it preserves gains from trade with the rival. Moreover, re-exporting the rival's input to the colony is less costly than domestic production. In essence, weak mercantilism maximizes the controlling metropolis's terms of trade. Furthermore, the noncontrolling metropolis benefits from accepting weak mercantilism over complete autarky.

4.3. Guns choices before war (G_1^j)

Suppose that $t = 1$ and countries have already produced and traded inputs as well as produced the nontradable final good. Let Q_1^j be the output level (i.e., the amount of the nontradable good) produced by metropolis $j = 1, 2$ in period 1. The metropolises anticipate that the winner will select weak mercantilism in period 2 (lemma 2) and select their guns choices accordingly. In particular, each metropolis has an incentive to fight to take control of the colony, as weak mercantilism is great for the winner, but costly for the loser. More precisely, the benefits from fighting are given by the difference between aggregate output under weak mercantilism when the country wins the war (i.e., $\bar{Q}^j(WM, j)$) and aggregate

output under weak mercantilism when the country loses the war (i.e., $\bar{Q}^j(WM, -j)$). Formally, the expected payoff of country j in period 1 when the metropolises make their guns choices is given by

$$V_1^j = Q_1^j - p_G^j G_1^j + \delta \left[q_1^j \bar{Q}^j(WM, j) + (1 - q_1^j) \bar{Q}^j(WM, -j) \right],$$

where assumption 1 ensures that $\bar{\Delta}_{WM}^j = \bar{Q}^j(WM, j) - \bar{Q}^j(WM, -j) > 0$.

Proposition 1 formally characterizes the equilibrium levels of arming in period 1.

PROPOSITION 1. Guns choices before war.¹³ *Suppose that assumption 1 holds and $\bar{q}_1^j (1 - \bar{q}_1^j) < \min_{k \in \{1, 2\}} \left\{ Q_1^k / \delta m \bar{\Delta}_{WM}^k \right\}$, where $\bar{q}_1^j = \frac{(\bar{\Delta}_{WM}^j / p_G^j)^m}{\sum_{k=1, 2} (\bar{\Delta}_{WM}^k / p_G^k)^m}$. Then, the unique Nash equilibrium levels of arming in period $t = 1$ is given by:*

$$\bar{G}_1^j = \left(\delta m / p_G^j \right) \bar{q}_1^j \left(1 - \bar{q}_1^j \right) \bar{\Delta}_{WM}^j \in \left(0, Q_1^j / p_G^j \right) \text{ for } j = 1, 2. \quad (1)$$

Moreover, the equilibrium probability that metropolis j wins the war is given by \bar{q}_1^j .

Proof. In online appendix A.1.3. ■

The logic behind proposition 1 is as follows: After gaining control of the colony in period $t = 2$, each metropolis selects weak mercantilism. As a consequence, in period $t = 1$ both countries have an incentive to select a positive level of arming. Winning the war is beneficial, as it allows the winner to impose trade restrictions on the loser and the colony in period $t = 2$, thereby improving its terms of trade. For the same reason, losing the war is costly. Indeed, in this environment, the loser will be unable to trade with the colony, negatively affecting its terms of trade.

More formally, we have $\partial V_1^j / \partial G_1^j = -p_G^j + \left(\partial q_1^j / \partial G_1^j \right) \delta \bar{\Delta}_{WM}^j$. Given that the discounted benefit of winning the war is always positive (formally, $\delta \bar{\Delta}_{WM}^j > 0$), the marginal effect of the first unit of guns on the probability of winning is very high (formally, $\lim_{G_1^j \rightarrow 0} \left(\partial q_1^j / \partial G_1^j \right) = \lim_{G_1^j \rightarrow 0} \left[m q_1^j \left(1 - q_1^j \right) / G_1^j \right] = \infty$), and the marginal cost of guns is $p_G^j > 0$, no arming (i.e., $G_1^j = 0$) is always a dominated strategy. Thus, in equilibrium, it must be the case that $G_1^j > 0$ for $j \in \{1, 2\}$. Considering a situation in which no metropolis invests all its output in guns, equation (1) is the unique Nash equilibrium levels of arming. In other words, proposition 1 captures the idea of conflict induced by rivals fighting to manipulate the terms of trade with a colony. In equilibrium, there is conflict and trade restrictions, which nicely captures the connection between colonial wars and mercantilism. Note the difference with the standard model of conflict, in which there is a fixed prize (e.g., a natural resource) or trade opportunities ex post augment the value of the prize and, hence, the incentives to invest in arming. On the contrary, in our model, the prize is not a resource but the right to set the trade regime of a colony.

So far we have taken the trade regime in period $t = 1$ as given and, consequently, Q_1^j as well. In the next section we fully characterize the equilibrium trade regime for period $t = 1$, but before doing so, it is useful to further examine the equilibrium for any Q_1^j . After all, proposition 1, combined with lemmas 1 and 2, already establishes that the equilibrium path will remain qualitatively the same regardless of the trade regime chosen in $t = 1$.

¹³ In the online appendix we prove a more general version of this proposition that also considers the theoretically possible—but not realistic—cases in which at least one metropolis invests all its output in guns.

4.3.1. Sources of inefficiency

The equilibrium path under any trade regime in period $t = 1$ involves two key inefficiencies. First, arming is purely rent-seeking. Each metropolis invests in military power solely to increase its probability of controlling the colony and thereby gaining the right to impose mercantilist policies. However, arming by one metropolis comes at the direct expense of its rival, creating no net productive benefit. Second, mercantilist policies introduce a distortionary market power effect. The economic gains enjoyed by the winning metropolis are outweighed by the losses imposed on its rival and the colony, leading to a net welfare-reducing outcome. Thus, the era of colonial wars and mercantilism represents one of the worst forms of economic competition—rivals fighting for the right to distort the economy.

4.3.2. Colonial disputes and mercantilism

Proposition 1 helps explain key historical patterns observed during the mercantilist era (1500–1800). This period saw a massive expansion of overseas trade, with European metropolises frequently manipulating the terms of trade with their colonies through mercantilist restrictions. Control over colonies, ports and trade routes became a central geopolitical objective, leading to intense military conflict among European powers.¹⁴

4.3.3. Persistence and demise of mercantilism

Proposition 1 provides insights into how to restore efficiency in the system. Since colonial wars arise from competition over the right to impose trade restrictions, a commitment to free trade would eliminate both military conflict and economic distortions. To see why, suppose that before making military investments, the two metropolises engage in trade negotiations and that any agreement they reach becomes fully binding. If both metropolises expect to gain more from free trade than from a mercantilist system, they will have no incentive to invest in military power. Consequently, the costly arms race disappears, and trade occurs efficiently.¹⁵ On the contrary, even if direct military conflict disappears, mercantilist policies can persist. Suppose the possibility of war is completely removed—for instance, if arms investments are inconsequential ($m = 0$). In this case, metropolises will not arm themselves, and the probability of controlling the colony will simply be $1/2$ for each. Yet, the winning metropolis will still impose weak mercantilism in the next period, restricting trade to extract economic rents from the colony. This suggests that mercantilism could survive even in a peaceful world.

The persistence of colonial wars and mercantilist policies suggests that credible commitments to free trade were historically difficult to achieve. Eventually, however, most colonies gained their independence, which helped facilitate the transition toward free trade. In this

14 For a more detailed historical analysis of the mercantilist era, see the [online annex](#) “A Note on the History of Colonial Disputes and Mercantilism: Annex to ‘Colonial Wars and Trade Restrictions: Fighting for Exclusive Trading Rights.’”

15 Formally, metropolis j will agree to free trade if the economic gains from free trade exceed the expected benefits of controlling the colony and imposing mercantilist policies. This condition can be expressed as $\bar{Q}^j(FT) - \bar{Q}^j(WM, -j) > \bar{q}_1^j (1 - m + m\bar{q}_1^j) \bar{\Delta}_{WM}^j$, where $\bar{Q}^j(FT)$ represents j 's output under free trade and \bar{q}_1^j is its equilibrium probability of winning the colonial war.

sense, decolonization acted as a commitment device, making free trade a stable outcome by eliminating the economic and political motivations for colonial control.^{16,17}

4.3.4. Determinants of winning probabilities

It is useful to examine what determines the probability that a metropolis wins the war. Several factors influence this probability, shaping the incentives for military investment and trade policy decisions (see online appendix A.1.4 for details).

The first determinant is how much a metropolis benefits from mercantilist policies relative to its rival. If a metropolis gains significantly from imposing trade restrictions on the colony—or from avoiding restrictions imposed by its rival—it has a stronger incentive to invest in military power. Consequently, it is more likely to win the war. A key factor governing this determinant is how dependent a metropolis is on colonial inputs. If a metropolis is less productive in producing a colonial good domestically, it suffers more from trade restrictions and is therefore more willing to fight for control of the colony.¹⁸

The second determinant is how efficient a metropolis is in producing military power relative to its rival. If a metropolis can produce guns at a lower cost, it has a strategic advantage in military investment, increasing its probability of winning the war. A metropolis with a higher productivity in gun production can afford to out-arm its rival, tilting the balance of power in its favour.¹⁹

The third determinant is how effectively military investment converts into victory. If military power is highly decisive in determining the outcome of the war, then the metropolis with the strongest incentive to impose mercantilist policies will invest more aggressively in arming, leading to a higher probability of winning. However, this effect depends on whether military effectiveness interacts with economic factors, such as productivity differences in gun production and the extent to which mercantilist policies distort trade. Specifically, the probability that a metropolis wins the war is strictly increasing in the effectiveness of military power if and only if the following economic condition holds: $(Q_1^j/Q_1^{-j})^\gamma (a_G^{-j}/a_G^j) (\overline{\Delta}_{WM}^j/\overline{\Delta}_{WM}^{-j}) > 1$. This condition ensures that the metropolis with stronger incentives to impose mercantilist policies also finds military investment more beneficial.

16 This does not imply that metropolises voluntarily decolonized to make free trade credible.

Rather, colonial holdings became less common because the costs of occupation and repression increased significantly. In our model, the only cost of maintaining a colony is defending it against a rival. However, if additional costs—such as administrative expenses or resistance movements—were introduced and exceeded a certain threshold, free trade and peace would naturally emerge as the preferred equilibrium.

17 For a more detailed historical analysis of the decline of mercantilism in the 19th century, see the [online annex](#) “A Note on the History of Colonial Disputes and Mercantilism: Annex to ‘Colonial Wars and Trade Restrictions: Fighting for Exclusive Trading Rights’.”

18 Formally, the probability of winning the war, \overline{q}_1^j , is strictly increasing in $\overline{\Delta}_{WM}^j/\overline{\Delta}_{WM}^{-j}$, where $\overline{\Delta}_{WM}^j$ represents the gains metropolis j obtains from imposing weak mercantilism. If metropolis j is highly dependent on colonial trade, meaning it is less productive in producing the colonial input itself (i.e., a higher a_3^j), then its incentive to prevent rival-imposed trade restrictions increases, making it more willing to invest in military power.

19 Mathematically, \overline{q}_1^j is strictly increasing in a_G^{-j}/a_G^j , meaning that if metropolis j is relatively more efficient at producing guns than its rival, it will invest more in military power and be more likely to win.

The fourth determinant is how trade policies influence economic output, which in turn affects military costs. If trade affects total output and larger economies face lower costs of arming, then trade regimes indirectly shape military power. When a metropolis produces more, it reduces the opportunity cost of military investment, increasing its ability to arm and fight effectively. However, this effect occurs only if military costs are output dependent.²⁰

4.3.5. The colony's perspective

Let us consider how mercantilism affects the colony. The colony does better when the metropolis that values its input more wins the war, because the winner will stop the colony from trading with the loser. So, the colony wants the winner to be the one who buys the most of its goods anyway. In simpler terms, the colony prefers its best customer to win.²¹ This preference leads to an interesting point. The colony benefits from anything that increases the chances that the “best customer” metropolis wins. For instance, suppose that metropolis 1 buys more of the colony's input. If metropolis 1 needs the colony's input more, it will fight harder to win. This in turn has a positive effect on the colony because metropolis 1's trade restrictions are less harmful to the colony than are the restrictions of metropolis 2.^{22,23}

4.4. Trade regime before war (τ_1)

In this section we characterize the equilibrium trade regime selected by the metropolises in period $t = 1$. To do so, assume that at the beginning of period 1, metropolis j controls the colony. There are two possible scenarios to consider depending on γ .

4.4.1. Completely exogenous price of guns

Suppose that $\gamma = 0$ —that is, $p_G^j = a_G^j$. Then, the trade regime in period 1 does not influence G_1^j and, hence, does not affect the probability of winning the war, which in equilibrium is

20 If military costs are fixed ($\gamma = 0$), then relative output Q_1^j/Q_1^{-j} has no impact on the probability of winning. But if military costs are output dependent ($\gamma > 0$), then a metropolis with a larger economy can arm more cheaply, making it more likely to win. This distinction is critical for determining equilibrium trade regimes in the following section.

21 Formally, the output of the colony in period $t = 2$ when metropolis j wins the war is given by $Q_2^3 = \bar{Q}^3(WM, j)$. Moreover, $\bar{Q}^3(WM, 1) > \bar{Q}^3(WM, 2)$ if and only if $\alpha_1 > \alpha_2$ (see online appendix A.1.4 for details), where α_j represents the expenditure share of metropolis j .

22 Formally, whenever $\alpha_1 > \alpha_2$, $V_2^3 = \bar{q}_1^1 \bar{Q}^3(WM, 1) + (1 - \bar{q}_1^1) \bar{Q}^3(WM, 2)$ is strictly increasing in a_3^1 . Here, \bar{q}_1^1 is the probability of metropolis 1 winning, and a_3^1 is metropolis 1's unit labour requirement in the colonial input.

23 Proposition 1 and the discussion in this paragraph have interesting implications for the cliometrics of mercantilist restrictions. In particular, they suggest that different counterfactual scenarios should be considered to estimate and/or simulate the cost of mercantilist restrictions for different countries under varying historical circumstances. For example, if a colony controlled by metropolis j is considering independence, the most relevant estimate is $\bar{Q}^3(FT) - \bar{Q}^3(WM, j)$, where $\bar{Q}^3(FT)$ is the aggregate output of the colony under free trade. The idea is that if the independence process is successful, the colony will move to free trade. On the contrary, if we are trying to assess the costs and benefits for a colony associated with a colonial war, the relevant estimate for the benefits should be $\bar{Q}^3(WM, j) - \bar{Q}^3(WM, -j)$. The reason is that if metropolis j loses the war, there will not be free trade; rather, $-j$ will exclude j from colonial trade.

given by

$$\bar{q}_1^j = \frac{\left(\bar{\Delta}_{WM}^j/a_G^j\right)^m}{\sum_{k=1,2}\left(\bar{\Delta}_{WM}^k/a_G^k\right)^m}$$

for any trade regime $\tau_1 \in \{FT, (WM, j), (SM, j)\}$. Thus, metropolis j 's trade policy choice in period 1 has no effect on future decisions. Following the logic of lemma 2, the metropolis that controls the colony selects weak mercantilism, the trade regime that maximizes its current output. Formally, we have the following proposition.

PROPOSITION 2. Trade regime before war. *Suppose that $\gamma = 0$, assumption 1 holds, and $\bar{q}_1^j \left(1 - \bar{q}_1^j\right) < \min_{k \in \{1,2\}} \left\{Q_1^k(\tau_1) / \delta m \bar{\Delta}_{WM}^k\right\}$ for all $\tau_1 \in \{FT, (WM, j), (SM, j)\}$. Then, the unique equilibrium trade regime in $t = 1$ is weak mercantilism (i.e., if metropolis j controls the colony in $t = 1$, then $\tau_1 = (WM, j)$).*

Proof. In online appendix A.1.5. ■

Thus, when $\gamma = 0$, there is a one directional link between mercantilism and conflict—namely, that metropolises have incentives to fight in period $t = 1$ in order to gain the right to impose mercantilist policies in period $t = 2$, but current (i.e., period $t = 1$) mercantilist policies have no impact on guns investments or the outcome of conflict. In other words, when $\gamma = 0$, mercantilism is a purely economic phenomenon (driven by the incentives to manipulate terms of trade) that induces interstate conflict.

4.4.2. Price of guns decreasing in Q_t^j

Suppose that $\gamma > 0$, i.e., $p_G^j = a_G^j \left(Q_t^j\right)^{-\gamma}$. Then, the opportunity cost of guns for a metropolis decreases with its output level. Since the trade regime in period $t = 1$ affects Q_t^j , this specification for the price of guns between the current trade regime and the probability of winning the war. In particular, the equilibrium probability that metropolis j wins the war is now given by

$$\bar{q}_1^j(\tau_1) = \frac{\left[\bar{Q}^j(\tau_1)\right]^{\gamma m} \left(\bar{\Delta}_{WM}^j/a_G^j\right)^m}{\sum_{k=1,2}\left[\bar{Q}^k(\tau_1)\right]^{\gamma m} \left(\bar{\Delta}_{WM}^k/a_G^k\right)^m},$$

where $\tau_1 \in \{FT, (WM, j), (SM, j)\}$ is the trade regime selected in period 1.²⁴ Note that unlike the case in which $\gamma = 0$, for $\gamma > 0$, $\bar{q}_1^j(\tau_1)$ depends on τ_1 . Therefore, there is a potential trade-off between economic gains and defence issues. While weak mercantilism is the trade regime that maximizes metropolis j 's output in period $t = 1$, it might not be the trade regime that maximizes metropolis j 's probability of winning the war. Moreover, the other metropolis does not need to accept the trade regime proposed by the metropolis that controls the colony at the beginning of period $t = 1$. In particular, when metropolis j proposes weak mercantilism or free trade, it might be in the interest of metropolis $-j$ to reject these offers and move to complete autarky, a choice that negatively affects its economy in period 1 but might have a positive effect on its probability of winning the war.

The following proposition formally evaluates these trade-offs; that is, we characterize the equilibrium trade regime in period 1. To do so, it is useful to define $\bar{r}^j(\tau_1) = \bar{Q}^j(\tau_1) / \bar{Q}^{-j}(\tau_1)$, which is the output of metropolis j relative to its rival under each trade

²⁴ Naturally, $\bar{q}_1^{-j}(\tau_1) = 1 - \bar{q}_1^j(\tau_1)$.

regime $\tau_1 \in \{FT, (WM, j), (SM, j)\}$. For interpreting proposition 3, we say that there is *no economic-defence dilemma for metropolis j whenever* $\bar{r}^j(WM, j) > \bar{r}^j(SM, j)$; that is, when weak mercantilism maximizes not only the aggregate output of metropolis j (relevant for economic well-being) but also the relative output with respect to $-j$ (relevant for war).²⁵

PROPOSITION 3. Trade regime before war. *Suppose that $\gamma > 0$, assumption 1 holds, and $\bar{q}_1^j(\tau_1) \bar{q}_1^{-j}(\tau_1) < \min_{k \in \{1,2\}} \{Q_1^k(\tau_1) / \delta m \bar{\Delta}_{WM}^k\}$ for $\tau_1 \in \{FT, (WM, j), (SM, j)\}$. Then, there are thresholds $\bar{\delta}^j(\tau_1)$ and $\bar{\delta}^{-j}(\tau_1)$ for $\tau_1 \in \{FT, (WM, j)\}$ such that*

1. *The equilibrium trade regime in period $t = 1$ is weak mercantilism if and only if one of the following conditions holds:*

- (a) $\bar{r}^j(WM, j) > \bar{r}^j(SM, j)$ $\delta \leq \bar{\delta}^{-j}(WM, j)$; or
- (b) $\bar{r}^j(SM, j) \geq \bar{r}^j(WM, j)$ and $\delta \leq \bar{\delta}^j(WM, j)$.

2. *The equilibrium trade regime in period $t = 1$ is strong mercantilism if and only if one of the following conditions holds:*

- (a) $\bar{r}^j(WM, j) > \bar{r}^j(SM, j) > \bar{r}^j(FT)$, $\delta > \bar{\delta}^{-j}(WM, j)$, and $[\bar{Q}^j(SM, j) \geq \bar{Q}^j(FT)]$ or $[\bar{Q}^j(FT) > \bar{Q}^j(SM, j)$, and $\delta > \bar{\delta}^j(FT)$]; or
- (b) $\bar{r}^j(WM, j) > \bar{r}^j(FT) > \bar{r}^j(SM, j)$ and $\delta > \bar{\delta}^{-j}(FT)$; (c) $\bar{r}^j(SM, j) \geq \bar{r}^j(WM, j) > \bar{r}^j(FT)$ and $\delta > \bar{\delta}^j(WM, j)$.

3. *The equilibrium trade regime in period $t = 1$ is free trade if and only if one of the following conditions holds:*

- (a) $\bar{r}^j(WM, j) > \bar{r}^j(SM, j) > \bar{r}^j(FT)$, $\delta > \bar{\delta}^{-j}(WM, j)$, $\bar{Q}^j(FT) > \bar{Q}^j(SM, j)$, and $\delta \leq \bar{\delta}^j(FT)$;
- (b) $\bar{r}^j(WM, j) > \bar{r}^j(SM, j) = \bar{r}^j(FT)$, and $\delta \geq \bar{\delta}^{-j}(WM, j)$; or
- (c) $\bar{r}^j(WM, j) > \bar{r}^j(FT) > \bar{r}^j(SM, j)$ and $\bar{\delta}^{-j}(WM, j) < \delta \leq \bar{\delta}^{-j}(FT)$.

Proof. In online appendix A.5. ■

Proposition 3 reveals another interesting connection between trade restrictions and conflict. If the opportunity cost of guns faced by each metropolis is decreasing in its output level ($\gamma > 0$), relative guns choices will be affected by the metropolises' output ratio. Since international trade can affect this ratio, trade restrictions in period $t = 1$ can be used to influence the chances of winning the war. Proposition 3 shows that, depending on parameter values, it is possible that metropolis j , in equilibrium, departs from weak mercantilism. Next, we discuss the intuition behind each scenario in proposition 3.

4.4.3. Weak mercantilism in period $t = 1$ (proposition 3.1)

There are two possible scenarios in which the equilibrium trade regime in period $t = 1$ is weak mercantilism.

1. *No economic-defence dilemma for j and impatient -j:* If the output ratio of metropolis j is higher under weak mercantilism than under strong mercantilism (i.e., $\bar{r}^j(WM, j) > \bar{r}^j(SM, j)$), it is clear that metropolis j has strong incentives to

²⁵ Recall that it is always the case that $\bar{r}^j(WM, j) > \bar{r}^j(FT)$, because $\bar{Q}^j(WM, j) > \bar{Q}^j(FT)$ and $\bar{Q}^{-j}(FT) > \bar{Q}^{-j}(WM, j)$.

impose weak mercantilism, because this is the trade regime that maximizes j 's output as well as its probability of winning the war. The only problem is that metropolis $-j$ might reject weak mercantilism and prefer to move to complete autarky, which has a negative effect in its economy in period 1 but a positive effect on its probability of winning the war and taking the colony in period 2. However, if metropolis $-j$ is not patient enough (formally, $\delta \leq \bar{\delta}^{-j}(WM, j)$), this is not a profitable investment. Metropolis j knows this and, hence, proposes weak mercantilism.

2. *Economic-defence dilemma for j and impatient j* : The other possible scenario in which the equilibrium trade regime in period $t = 1$ is that weak mercantilism occurs when the output ratio of metropolis j is higher under strong mercantilism than under weak mercantilism (i.e., $\bar{r}^j(SM, j) \geq \bar{r}^j(WM, j)$), but metropolis j is not patient enough to select strong mercantilism (formally, $\delta \leq \bar{\delta}^j(WM, j)$). In other words, this situation is one in which metropolis j faces an economic-defence dilemma and prefers to privilege the economy.

4.4.4. Strong mercantilism in period $t = 1$ (proposition 3.2)

There are three possible scenarios in which the equilibrium trade regime in period $t = 1$ is strong mercantilism.

1. *No economic-defence dilemma for j , patient $-j$, and j prefers strong mercantilism over free trade on economic grounds or is patient*: Suppose that the output ratio of metropolis j is higher under weak mercantilism than under strong mercantilism, which is higher than under free trade (i.e., $\bar{r}^j(WM, j) > \bar{r}^j(SM, j) > \bar{r}^j(FT)$). Metropolis j would like to impose weak mercantilism, but this will be blocked by metropolis $-j$ because now $-j$ is patient enough to tolerate a lower output in period 1 in order to increase its chance of winning the war (formally, $\delta > \bar{\delta}^{-j}(WM, j)$). In these circumstances, metropolis j might consider free trade, unless it induces lower output than strong mercantilism (i.e., when $\bar{Q}^j(SM, j) \geq \bar{Q}^j(FT)$) or, even if it induces higher output, metropolis j is patient enough to tolerate a reduction in output in period 1 in order to increase the probability of retaining the colony in period 2 (formally, when $\bar{Q}^j(FT) > \bar{Q}^j(SM, j)$, and $\delta > \bar{\delta}^j(FT)$).
2. *No economic-defence dilemma for j and very patient $-j$* : Another scenario that leads to strong mercantilism occurs when the output ratio of metropolis j is higher under weak mercantilism than under free trade, which is higher than under strong mercantilism (i.e., $\bar{r}^j(WM, j) > \bar{r}^j(FT) > \bar{r}^j(SM, j)$), and metropolis $-j$ will not accept weak mercantilism or free trade because it is patient enough to endure complete autarky in period 1 in order to increase its probability of taking the colony in period 2 (formally, when $\delta > \bar{\delta}^{-j}(FT)$).
3. *Economic-defence dilemma for j and patient j* : Finally, there is also strong mercantilism when the output ratio of metropolis j is higher under strong mercantilism than weak mercantilism, which is higher than under free trade (i.e., $\bar{r}^j(SM, j) \geq \bar{r}^j(WM, j) > \bar{r}^j(FT)$), and metropolis j is patient enough to tolerate a reduction in output in period 1 in order to increase the probability of retaining the colony in period 2 (formally, $\delta > \bar{\delta}^j(WM, j)$).

Note the difference between the first two scenarios and the third one. In the first two scenarios, metropolis j was interested in implementing weak mercantilism, but metropolis $-j$ was not. That is, the metropolis controlling the colony was willing to trade with its rival, but its rival preferred complete autarky in order to increase its chance of winning the colonial war. In other words, the metropolis that does not control the colony is the one that pushes for strong mercantilism. On the contrary, in the third scenario, the metropolis that

controls the colony is the one that decides to escalate mercantilist restrictions in order to increase its chance of retaining the colony.

4.4.5. Free trade in period $t = 1$ (proposition 3.3)

Probably more surprisingly, it is also possible that free trade is the equilibrium trade regime in period $t = 1$, which occurs under three possible scenarios.

1. *No economic-defence dilemma for j , patient $-j$, and j prefers free trade to strong mercantilism on economic grounds or is impatient:* Suppose that the output ratio of metropolis j is higher under weak mercantilism than under strong mercantilism, which is higher than under free trade (i.e., $\bar{r}^j(WM, j) > \bar{r}^j(SM, j) > \bar{r}^j(FT)$), and metropolis $-j$ is patient enough to block weak mercantilism (formally, $\delta > \bar{\delta}^{-j}(WM, j)$). Then, metropolis j has only two real choices; namely, free trade and strong mercantilism. Free trade will be selected when it induces higher output than strong mercantilism (i.e., $\bar{Q}^j(FT) > \bar{Q}^j(SM, j)$) and j is not patient enough to impose strong mercantilism (formally, $\delta \leq \bar{\delta}^j(FT)$).
2. *No economic-defence dilemma for j , patient $-j$, and j prefers free trade to strong mercantilism on economic grounds:* Another scenario that leads to free trade occurs when the output ratio of metropolis j is higher under weak mercantilism than under strong mercantilism, which is the same as under free trade (i.e., $\bar{r}^j(WM, j) > \bar{r}^j(SM, j) = \bar{r}^j(FT)$) and metropolis $-j$ is patient enough to block weak mercantilism (formally, $\delta > \bar{\delta}^{-j}(WM, j)$). Once again, the only choices for metropolis j are free trade and strong mercantilism. Both regimes induce the same probability of retaining the colony; hence, defence is not a determining issue. However, $\bar{r}^j(SM, j) = \bar{r}^j(FT)$ implies $\bar{Q}^j(FT) > \bar{Q}^j(SM, j)$. Thus, on economic grounds, metropolis j prefers free trade to strong mercantilism.
3. *No economic-defence dilemma for j , patient $-j$, and j prefers free trade to strong mercantilism on defence and economic grounds:* Finally, free trade is also an equilibrium outcome when the output ratio of metropolis j is higher under weak mercantilism than under free trade, which is higher than under strong mercantilism (i.e., $\bar{r}^j(WM, j) > \bar{r}^j(FT) > \bar{r}^j(SM, j)$), and metropolis $-j$ is patient enough to block weak mercantilism but not free trade (i.e., $\bar{\delta}^{-j}(WM, j) < \delta \leq \bar{\delta}^{-j}(FT)$). In such circumstances, from the perspective of metropolis j , free trade dominates strong mercantilism on defence as well as economic grounds. $\bar{r}^j(FT) > \bar{r}^j(SM, j)$ implies that free trade induces higher chances of winning the war than strong mercantilism. Moreover, $\bar{r}^j(FT) > \bar{r}^j(SM, j)$ implies $\bar{Q}^j(FT) > \bar{Q}^j(SM, j)$.

Proposition 3 suggests that although economic considerations always push the metropolis that controls the colony toward weak mercantilism, conflict might change this calculus because the relative positions between the metropolises matter for the outcome of the war, and the trade regime in period $t = 1$ affects those positions. In some cases, this introduces a third source of inefficiency. Trade flows before war are restricted not only to manipulate the terms of trade but also to affect the probability of winning the colonial war.

Finally, two remarks. First, it is worth mentioning that the metropolis that does not control the colony in period $t = 1$ might also play an important role in the determination of the trade regime in period $t = 1$. For example, when $\bar{r}^j(WM, j) > \bar{r}^j(FT) > \bar{r}^j(SM, j)$ and $\delta > \bar{\delta}^{-j}(FT)$, metropolis j maximizes its expected payoff selecting weak mercantilism, but $-j$ is patient enough to block this. Second, departures from weak mercantilism

can occur only in period $t = 1$. In period $t = 2$, the metropolis that wins the war always implements weak mercantilism because in period $t = 2$, there is no link between the trade regime and war.

5. Free trade versus strong mercantilism

In practice, weak mercantilism could be more difficult to enforce, as it requires a subtler set of trade restrictions. Indeed, under weak mercantilism, the winner trades with all countries, but some types of trade are not allowed. For example, one difficulty enforcing weak mercantilism is that the metropolis must block not only exports from the colony to its rival but also re-exports from the metropolis to its rival. Moreover, note that under weak mercantilism, the metropolises are trading. Thus, to block re-exports, the metropolis must be able to distinguish a shipment with metropolitan products from one with colonial products. Strong mercantilism, on the other hand, is simpler to enforce. There is free trade between the colony and the metropolis, and all types of trade with the rival are not permitted.²⁶ Another possibility to rationalize restricting the set of trade regime choices is that domestic political economy considerations plays a role.²⁷

To capture this difference in enforcement possibilities (or to internalize domestic political forces), this section considers a situation in which the only choices are complete free trade and strong mercantilism. Two important advantages of this setup are that (i) even when $\gamma = 0$, free trade might be an equilibrium outcome and that (ii) the trade regime might depend on which metropolis wins the colonial war. As in the previous section, we fully characterize the equilibrium trade regime and equilibrium gun choices.

Once weak mercantilism is not a possibility, assumption 1 can be relaxed.

ASSUMPTION 2. Unit labour requirements in the production of inputs satisfy²⁸

- (a) $a_1^3 = a_2^3 = \infty$,
- (b) $\frac{\alpha_1 a_1^1}{\alpha_2 a_1^2} < \frac{L^1}{L^2} < \frac{\alpha_1 a_2^1}{\alpha_2 a_2^2}$, and
- (c) $\frac{L^j}{L^3} < \frac{\alpha_j a_3^j}{(1-\alpha_1-\alpha_2)a_3^3}$ for $j = 1, 2$.

26 Note that a custom system tracking rules of origin of imports (either in the metropolis that controls the colony or in the colony) will not help enforcing weak mercantilism. The reason is that the trade flows not allowed under weak mercantilism are an export of a colonial product to the rival metropolis either directly or as a re-export first imported to the metropolis that controls the colony. On the contrary, re-exports of the rival metropolis's product to the colony are indeed allowed under weak mercantilism. Moreover, the excluded metropolis has no incentive to report an incoming shipment that includes colonial products. From its perspective, this is just an effective way of partially bypassing the trade exclusion. In other words, to enforce weak mercantilism the metropolis must not only block shipments from the colony to its rival but also monitor the products involved in export shipments from itself to the rival metropolis.

27 We explore this possibility in the [online annex](#) "A Note on the Distributive Effects of Mercantilism: Annex to 'Colonial Wars and Trade Restrictions: Fighting for Exclusive Trading Rights'."

28 In online appendix [A.2.1](#) we consider a more general version of assumption 2 that does not require $a_1^3 = a_2^3 = \infty$. All our results hold under this generalization of assumption 2.

5.1. Guns choices and trade regime after war (τ_2 and G_2^j)

Lemma 1 still holds when the metropolises can only chose complete free trade and strong mercantilism. After period 2 there is no future period and, therefore, metropolises do not have any incentive to invest in guns. Thus, $G_2^j = 0$ for all $j = 1, 2$. The following lemma characterizes the trade regime in period $t = 2$.

LEMMA 3. *Trade regime after war.* Suppose that the metropolis that controls the colony can select only between free trade and strong mercantilism and assumption 2 holds. Then, when in $t = 2$ the colony is controlled by metropolis j , the unique equilibrium trade regime in $t = 2$ is strong mercantilism if and only if

$$\left(\frac{\alpha_1 + \alpha_2}{\alpha_j}\right)^{1-\alpha_1-\alpha_2} > \left(\frac{\alpha_j \bar{L}^{-j} a_{-j}^j}{\alpha_{-j} \bar{L}^j a_{-j}^{-j}}\right)^{\alpha_{-j}} \tag{2}$$

Otherwise, the equilibrium trade regime in $t = 2$ is free trade.

Proof. In online appendix A.2.1. ■

When weak mercantilism is off the table, free trade or strong mercantilism could be the winner’s preferred trade regime. When the gains from trade between the winner and the rival are relatively large, the winner prefers free trade. When excluding the rival from the colonial trade produces relatively large gains for the winner, strong mercantilism is favoured. Equation (2) in lemma 3 formally captures this trade off. $\left(\alpha_j \bar{L}^{-j} a_{-j}^j / \alpha_{-j} \bar{L}^j a_{-j}^{-j}\right)^{\alpha_{-j}} > 1$ are j ’s gains from trading with its rival $-j$. $[(\alpha_1 + \alpha_2) / \alpha_j]^{1-\alpha_1-\alpha_2}$ are the gains enjoyed by country j from excluding $-j$ from colonial trade. To see this, note that, under free trade, the terms of trade between metropolis j and the colony are $w^j (FT) / w^3 (FT) = \alpha_j \bar{L}^3 / \alpha_3 \bar{L}^j$ and the price of input 3 is $p_3 (FT) = a_3^3 w^3 (FT)$. Under strong mercantilism, the terms of trade between metropolis j and the colony are $w^j (SM, j) / w^3 (SM, j) = (\alpha_1 + \alpha_2) \bar{L}^3 / \alpha_3 \bar{L}^j$ and the price of input 3 is $p_3 (SM, j) = a_3^3 w^3 (SM, j)$. Therefore, $p_3 (SM, j) / p_3 (FT) = w^3 (SM, j) / w^3 (FT) = \alpha_j w^j (SM, j) / (\alpha_1 + \alpha_2) w^j (FT)$. Given that the share of input 3 in the production of the final good is α_3 , $[(w^j (SM, j) / p_3 (SM, j)) / (w^j (FT) / p_3 (FT))]^{\alpha_3} = [(\alpha_1 + \alpha_2) / \alpha_j]^{1-\alpha_1-\alpha_2} > 1$ are country j ’s gains from manipulating the terms of trade with the colony. Intuitively, by excluding $-j$ from colonial trade, metropolis j forces the colony to buy inputs 1 and 2 from j , which increases the share of the colony’s income spent in inputs produced by j from α_j to $\alpha_1 + \alpha_2$.

5.2. Guns choices before war

The metropolises anticipate the trade policy that each winner will implement in period $t = 2$ (lemma 3) and in period $t = 1$ select their guns choices accordingly. Formally, the expected payoff of country j in period $t = 1$ when the metropolises make their guns choices is given by

$$V_1^j = Q_1^j - p_G^j G_1^j + \delta \left[q_1^j \bar{Q}^j (\tau_2^j) + (1 - q_1^j) \bar{Q}^j (\tau_2^{-j}) \right],$$

where $\tau_2^k = (SM, k)$ if equation (2) holds for k and $\tau_2^k = FT$ if equation (2) does not hold for k .

Proposition 4 characterizes equilibrium guns choices. There are three possible situations to consider; (i) when both metropolises prefer free trade; (ii) when both metropolises prefer strong mercantilism; and, finally, (iii) when one metropolis prefers free trade and the other strong mercantilism.

PROPOSITION 4. **Guns choices before war.**²⁹ Suppose that the metropolis that controls the colony can only select between free trade and strong mercantilism and assumption 2 holds. Then,

1. Suppose that equation (2) does not hold for all $j = \{1, 2\}$. Then, no arming is the unique Nash equilibrium in period $t = 1$.
2. Suppose that equation (2) holds for all $j \in \{1, 2\}$ and $\bar{q}_1^j (1 - \bar{q}_1^j) < \min_{k \in \{1, 2\}} \{Q_1^k / \delta m \bar{\Delta}_{SM}^k\}$, where $\bar{q}_1^j = \frac{(Q_1^j)^{\gamma m} (\bar{\Delta}_{SM}^j / a_G^j)^m}{\sum_{k=1,2} (Q_1^k)^{\gamma m} (\bar{\Delta}_{SM}^k / a_G^k)^m}$ and $\bar{\Delta}_{SM}^k = \bar{Q}^k(SM, k) - \bar{Q}^k(SM, -k)$. Then, the unique Nash equilibrium levels of arming in period $t = 1$ is given by

$$\bar{G}_1^j = \left(\delta / p_G^j\right) m \bar{q}_1^j \left(1 - \bar{q}_1^j\right) \bar{\Delta}_{SM}^j \in \left(0, Q_1^j / p_G^j\right) \text{ for } j = 1, 2$$

Moreover, the equilibrium probability that metropolis j wins the war is given by \bar{q}_1^j .

3. Suppose that (2) does not hold for country j and holds for country $-j$, and $\bar{q}_1^j (1 - \bar{q}_1^j) < \min \left\{ Q_1^j / \delta m \bar{\Delta}_{FT-SM}^j, Q_1^{-j} / \delta m \bar{\Delta}_{SM-FT}^{-j} \right\}$, where $\bar{q}_1^j = \frac{[\bar{\Delta}_{FT-SM}^j / p_G^j]^m}{[\bar{\Delta}_{FT-SM}^j / p_G^j]^m + [\bar{\Delta}_{SM-FT}^{-j} / p_G^{-j}]^m}$, $\bar{\Delta}_{FT-SM}^j = \bar{Q}^j(FT) - \bar{Q}^j(SM, -j)$ and $\bar{\Delta}_{SM-FT}^{-j} = \bar{Q}^{-j}(SM, -j) - \bar{Q}^{-j}(FT)$. Then, the unique Nash equilibrium levels of arming in period $t = 1$ is given by

$$\bar{G}_1^j = \left(\delta / p_G^j\right) m \bar{q}_1^j \left(1 - \bar{q}_1^j\right) \bar{\Delta}_{FT-SM}^j$$

and

$$\bar{G}_1^{-j} = \left(\delta / p_G^{-j}\right) m \bar{q}_1^j \left(1 - \bar{q}_1^j\right) \bar{\Delta}_{SM-FT}^{-j}.$$

Moreover, the equilibrium probability that metropolis j wins the war is given by \bar{q}_1^j .

Proof. In online appendix A.2.2. ■

Proposition 4 is much richer than proposition 1. In proposition 1, it is always the case that both rivals impose trade restrictions on colonial trade; however, proposition 4 opens the door to global free trade. In particular, when the gains from trade between the metropolises are relatively great, the winner always prefers free trade. In this situation, there is no need to fight (proposition 4.1). That is, free trade and no conflict (the Pareto efficient outcome) is the equilibrium of the game.

Proposition 4.2 focuses on the opposite case. When excluding the rival from colonial trade produces relatively large gains for the winner, strong mercantilism is favoured. Now the incentives for arming are very strong. Winning the war implies imposing very valuable trade restrictions on the rival and the colony. Losing the war means complete autarky. A simple inspection of proposition 4.2 and proposition 1 reveal their similarities. Indeed, it is easy to verify that the propositions are nearly identical in the intuition behind them, their sources of inefficiency, and the determinants of the winning probabilities. We simply replace *WM* by *SM* in the expressions of aggregate output of each metropolis. Finally, it is worth exploring the effect of strong mercantilism on the colony. The output of the colony when

²⁹ In the online appendix we prove a more general version of this proposition that also considers the theoretically possible—but not realistic—cases in which at least one metropolis invests all its output in guns.

j wins the war is higher than when $-j$ wins (formally, $Q^3(SM, j) > Q^3(SM, -j)$) if and only if

$$\frac{(1 - \alpha_1 - \alpha_2)^{\alpha_1 + \alpha_2}}{(\alpha_1 + \alpha_2)^{\alpha_1 + \alpha_2}} \frac{(\bar{L}^j)^{\alpha_1 + \alpha_2}}{(a_1^j)^{\alpha_1} (a_2^j)^{\alpha_2}} > \frac{(1 - \alpha_1 - \alpha_2)^{\alpha_1 + \alpha_2}}{(\alpha_1 + \alpha_2)^{\alpha_1 + \alpha_2}} \frac{(\bar{L}^{-j})^{\alpha_1 + \alpha_2}}{(a_1^{-j})^{\alpha_1} (a_2^{-j})^{\alpha_2}},$$

where the left (right) hand side represents the gains from trade for the colony when it only trades with j ($-j$). Thus, the colony prefers that the larger, and, on average, more productive metropolis in inputs 1 and 2 wins the war. Formally, the above inequality is more likely to hold the higher \bar{L}^j / \bar{L}^{-j} and the lower $(a_1^j)^{\alpha_1} (a_2^j)^{\alpha_2} / (a_1^{-j})^{\alpha_1} (a_2^{-j})^{\alpha_2}$.

Finally, proposition 4.3 considers an intermediate case. One metropolis prefers free trade, and the other prefers strong mercantilism. Then, both countries have an incentive to invest in guns. For the country that prefers free trade, war is the only way to avoid autarky. For the country that prefers strong mercantilism, the benefits from fighting are given by the difference between aggregate output under strong mercantilism when the country wins the war and aggregate output under free trade. Which country has a stronger incentive to invest in arming? To formally see this, suppose that country j favours free trade, while country $-j$ favours strong mercantilism. Then, $\bar{q}_1^j > 1/2$ if and only if $(Q_1^j / a_G^j)^\gamma \bar{\Delta}_{FT-SM}^{-j} > (Q_1^{-j} / a_G^{-j})^\gamma \bar{\Delta}_{SM-FT}^{-j}$, which is more likely to hold when $Q^j(FT) + Q^{-j}(FT) > Q^j(SM, -j) + Q^{-j}(SM, -j)$. That is, if the metropolises' aggregate output is greater (lesser) under free trade than under strong mercantilism, free trade is more (less) likely than strong mercantilism.

5.3. Trade regime before war

Assume that at the beginning of period 1, metropolis j controls the colony. Then, from proposition 3, the equilibrium probability that metropolis j wins the war as a function of the trade regime in period $t = 1$, denoted $\tau_1 \in \{FT, (SM, j)\}$, is given by

$$\bar{q}_1^j(\tau_1) = \frac{[\bar{Q}^j(\tau_1)]^{\gamma m} [(\bar{Q}^j(\tau_2^j) - \bar{Q}^j(\tau_2^{-j})) / a_G^j]^m}{\sum_{k=1,2} [\bar{Q}^k(\tau_1)]^{\gamma m} [(\bar{Q}^k(\tau_2^k) - \bar{Q}^k(\tau_2^{-k})) / a_G^k]^m},$$

where $\tau_2^k \in \{FT, (SM, k)\}$ is the equilibrium trade regime in period $t = 2$ when k controls the colony.³⁰ The following proposition characterizes the equilibrium trade regime in period $t = 1$.

PROPOSITION 5. Trade regime before war. *Suppose that the metropolis that controls the colony can select only between free trade and strong mercantilism and assumption 2 holds.*

1. *Suppose that equation (2) does not hold for all $j = \{1, 2\}$. Then, the equilibrium trade regime in period $t = 1$ is free trade for all $\gamma \geq 0$.*
2. *Suppose that equation (2) holds for all $j \in \{1, 2\}$ and $\bar{q}_1^j(\tau_1) \bar{q}_1^{-j}(\tau_1) < \min_{k \in \{1, 2\}} \{Q_1^k(\tau_1) / \delta^k m \bar{\Delta}_{SM}^k\}$ for all $\tau_1 \in \{FT, (SM, j)\}$. Then, the equilibrium trade regime in period $t = 1$ is strong mercantilism for all $\gamma \geq 0$.*

³⁰ Naturally, τ_2^j and τ_2^{-j} are given by lemma 3. For example, if equation (2) holds for both metropolises, then $\tau_2^j = (SM, j)$ and $\tau_2^{-j} = (SM, -j)$.

3. Suppose that metropolis j controls the colony in period $t = 1$, equation (2) does not hold for j , it holds for $-j$, and $\bar{q}_1^j(\tau_1)\bar{q}_1^{-j}(\tau_1) < \min\{Q_1^j(\tau_1)/\delta m\bar{\Delta}_{FT-SM}^j, Q_1^{-j}(\tau_1)/\delta m\bar{\Delta}_{SM-FT}^{-j}\}$ for all $\tau_1 \in \{FT, (SM, j)\}$. Then, there are thresholds $\bar{\delta}^j(FT)$ and $\bar{\delta}^{-j}(FT)$ such that

(a) The equilibrium trade regime in period $t = 1$ is strong mercantilism if and only if $\gamma > 0$ and one of the following conditions holds:

- (i) $\bar{r}^j(SM, j) > \bar{r}^j(FT)$ and $\delta > \bar{\delta}^j(FT)$;
- (ii) $\bar{r}^j(SM, j) < \bar{r}^j(FT)$ and $\delta > \bar{\delta}^{-j}(FT)$.

(b) The equilibrium trade regime in period $t = 1$ is free trade if and only if $\gamma = 0$ or $\gamma > 0$ and one of the following conditions holds:

- (i) $\bar{r}^j(SM, j) > \bar{r}^j(FT)$ and $\delta \leq \bar{\delta}^j(FT)$;
- (ii) $\bar{r}^j(SM, j) = \bar{r}^j(FT)$; (iii) $\bar{r}^j(SM, j) < \bar{r}^j(FT)$ and $\delta \leq \bar{\delta}^{-j}(FT)$.

4. Suppose that metropolis j controls the colony in period $t = 1$, equation (2) holds for j , it does not hold for $-j$, and $\bar{q}_1^j(\tau_1)\bar{q}_1^{-j}(\tau_1) < \min_{k \in \{1, 2\}}\{Q_1^j(\tau_1)/\delta m\bar{\Delta}_{SM-FT}^j, Q_1^{-j}(\tau_1)/\delta m\bar{\Delta}_{FT-SM}^{-j}\}$ for all $\tau_1 \in \{FT, (SM, j)\}$. Then, the equilibrium trade regime in period $t = 1$ is strong mercantilism for all $\gamma \geq 0$.

Proof. In online appendix A.2.3. ■

Proposition 5.1 considers the case in which, on pure economic grounds, both metropolises prefer free trade to strong mercantilism. In this situation, there is no need to fight, because the winner will always select free trade after the war is over. As a result, the metropolis that controls the colony in period $t = 1$ has no incentive to manipulate the trade regime in period $t = 1$. Thus, free trade in both periods and no conflict is the unique equilibrium outcome of the game.

Proposition 5.2, on the contrary, deals with the case in which both metropolises prefer strong mercantilism to free trade on economic grounds. In such circumstances, strong mercantilism is very attractive for the metropolis that controls the colony because it maximizes its current output and simultaneously hurts its rival, which increases the probability that metropolis j wins the war.³¹

The logic in proposition 5.2 extends to proposition 5.4 (i.e., when only the metropolis that controls the colony prefers strong mercantilism to free trade). The reason is that if metropolis j chooses strong mercantilism, there is nothing that metropolis $-j$ can do about it, given that strong mercantilism pushes metropolis $-j$ toward complete autarky. Therefore, the equilibrium outcome path implied by proposition 5.4 is almost identical to the one implied by proposition 5.2, which the only exception that if metropolis $-j$ wins the war, in period $t = 2$, there will be free trade.

Proposition 5.3 explores the most interesting case, in which, on economic grounds, the metropolis that controls the colony prefers free trade to strong mercantilism, the rival metropolis prefers strong mercantilism to free trade, and $\gamma > 0$.³² In such circumstances,

31 For $\gamma = 0$, $\bar{q}_1^j(FT) = \bar{q}_1^j(SM, j)$; hence, the trade regime in period $t = 1$ does not affect the probability of winning the war. Still, for economic reasons, metropolis j prefers strong mercantilism to free trade.

32 For $\gamma = 0$, the trade regime in period $t = 1$ has no effect on the probability of winning the war; hence, metropolis j chooses free trade, which is always accepted by its rival.

there are two possible scenarios in which the equilibrium trade regime in period $t = 1$ is strong mercantilism (proposition 5.3.a) and three possible scenarios in which the equilibrium trade regime in period $t = 1$ is free trade (proposition 5.3.b). Let's say that metropolis j faces an economic-defence dilemma if $\bar{r}^j(SM, j) > \bar{r}^j(FT)$.

5.3.1. Strong mercantilism in period $t = 1$ (proposition 5.3.a)

- (5.3.a.i) **Economic-defence dilemma for j and patient j :** Suppose that the output ratio of metropolis j is higher under strong mercantilism than under free trade (i.e., $\bar{r}^j(SM, j) > \bar{r}^j(FT)$). Then, metropolis j faces an economic-defence dilemma. Free trade maximizes current output (formally, $\bar{Q}^j(FT) > \bar{Q}^j(SM, j)$), but strong mercantilism maximizes the probability of winning the war. When j is patient enough (formally, $\delta > \bar{\delta}^j(FT)$), defence prevails and the equilibrium trade regime in period $t = 1$ is strong mercantilism.
- (5.3.a.ii) **No economic-defence dilemma for j and patient $-j$:** Another scenario that leads to strong mercantilism occurs when the output ratio of metropolis j is higher under free trade than under strong mercantilism (formally, $\bar{r}^j(FT) > \bar{r}^j(SM, j)$), but free trade will be blocked by metropolis $-j$ because $-j$ is patient enough to tolerate a lower output in period 1 in order to increase its chance of winning the war (formally, $\delta > \bar{\delta}^{-j}(FT)$).

5.3.2. Free trade in period $t = 1$ (proposition 5.3.b)

- (5.3.b.i) **Economic-defence dilemma for j and impatient j :** Suppose that $\bar{r}^j(SM, j) > \bar{r}^j(FT)$ and $\delta \leq \bar{\delta}^j(FT)$. Then, metropolis j faces an economic-defence dilemma. Free trade maximizes current output (formally, $\bar{Q}^j(FT) > \bar{Q}^j(SM, j)$), but strong mercantilism maximizes the probability of winning the war. However, this time metropolis j is not patient enough to tolerate a lower output in period 1 in order to increase its chance of retaining the colony in period $t = 2$.
- (5.3.b.ii) **No economic-defence dilemma for j or $-j$:** Another scenario that leads to free trade occurs when $\bar{r}^j(FT) = \bar{r}^j(SM, j)$. In this situation, the trade regime has no effect on the probability of winning the war and, hence, economic considerations prevail.
- (5.3.b.iii) **No economic-defence dilemma for j and impatient $-j$:** Finally, there is also free trade when the output ratio of metropolis j is higher under free trade than under strong mercantilism (i.e., $\bar{r}^j(FT) > \bar{r}^j(SM, j)$) and metropolis $-j$ is not patient enough to block this regime (formally, $\delta \leq \bar{\delta}^{-j}(FT)$).

One interesting implication of proposition 5 is that when the metropolis that controls the colony prefers strong mercantilism to free trade while the opposite is true for its rival (formally, equation 2 holds for j but it does not hold for $-j$), the only possible path to free trade is through a colonial war. The reason is that free trade is never an optimal choice for a metropolis that prefers strong mercantilism to free trade on economic grounds. Indeed, facing a colonial war only increases the incentives to adopt strong mercantilism in order to maximize the output ratio with respect to the other metropolis.

Another interesting implication of proposition 5 is that even a metropolis that prefers free trade to strong mercantilism on economic grounds might choose strong mercantilism if it faces a colonial war with a rival that prefers strong mercantilism to free trade. Moreover, this could occur for two reasons. First, the pro-free trade metropolis might depart from free

trade in order to hurt its rival and, hence, increase its probability of retaining the colony. Second, the promercantilist metropolis might not be willing to accept free trade because under free trade its relative position will be worse than under strong mercantilism.

6. Extension of the analysis

We have developed a simple model of conflict and trade restrictions that explains key historical developments of the mercantilist era. We then extended our analysis in three directions, further developing both the model and its historical implications, which we review next.

6.1. Colonial disputes and mercantilism

After proposition 1, we briefly discussed how our model explains the persistence of colonial wars and mercantilist policies during the mercantilist era (1500–1800). In an [online annex](#), we expand our historical analysis, exploring the factors behind the persistence and eventual decline of mercantilism in the 19th century, as suggested by our model.³³ These factors include trade agreements among European powers, decolonization and shifts in the relative importance of intermetropolitan versus colonial trade. We illustrate these dynamics with the Cobden-Chevalier trade treaty (1860) between Britain and France, the independence of Spanish America, and the opening of China and the Ottoman Empire.

6.2. Distributive effects of mercantilism

Within our Ricardian framework, mercantilist policies do not generate domestic winners or losers, eliminating internal conflicts of interest over trade regimes. Consequently, the model abstracts from domestic politics, explaining mercantilist initiatives and colonial wars through strategic interactions between metropolises rather than internal tensions. However, historically, mercantilist restrictions and colonial wars were deeply intertwined with metropolitan politics. In a separate [online annex](#), we modify our model to introduce domestic distributive effects of trade restrictions, exploring multifactor extensions: a specific-factors model (à la Ricardo-Vinner) and a factor-proportions model (à la Heckscher-Ohlin).³⁴ While in these models weak mercantilism stills maximizes the aggregate output for the controlling metropolis, they reveal how factor ownership polarizes trade policy preferences. The scarce factor supports strong mercantilism, whereas the abundant factor favours free trade. These domestic political dynamics provide a rationale for our second environment, where the metropolis controlling the colony chooses between free trade and strong mercantilism.

6.3. Mercantilism in the history of economic thought

Our model offers a useful contrast to classical analyses of mercantilism in economic thought. In an [online annex](#), we briefly compare it with the views of Adam Smith (1776) and John Maynard Keynes (1936).³⁵ Like Keynes, our model suggests that mercantilist policies can increase domestic output, but they do so through entirely different mechanisms. Our model

33 See A Note on the History of Colonial Disputes and Mercantilism: Annex to Colonial Wars and Trade Restrictions: Fighting for Exclusive Trading Rights.

34 See the [online annex](#) “A Note on the Distributive Effects of Mercantilism: Annex to ‘Colonial Wars and Trade Restrictions: Fighting for Exclusive Trading Rights’.”

35 See the [online annex](#) “A Note on Mercantilism in the History of Economic Thought: Annex to ‘Colonial Wars and Trade Restrictions: Fighting for Exclusive Trading Rights’.”

assumes full employment, meaning that the increase in domestic output under mercantilism is unrelated to aggregate demand expansion. Beyond this distinction, our model aligns more closely with Smith's view of mercantilism. Accordingly, the annex focuses on Smith's analysis of colonial trade and mercantilist policies, contrasting it with our model.

7. Concluding remarks

To conclude, we discuss three possible routes to extend our model and historical analysis.

7.1. Monopolization of trade routes

In our model, the winner restricts trade by banning the loser from accessing colonial goods, effectively eliminating re-exports. Historically, however, European powers—such as Britain with American tobacco—profited significantly from re-exporting colonial commodities. Currently, our model, which lacks a transportation and commercialization sector, would make re-exports functionally equivalent to full free trade due to price equalization. Introducing this sector would capture the mercantilist-era struggle for trade route monopolies. The core mechanism remains the same: Metropolises fight for control of trade routes, allowing the transportation and commercialization industry of the winner to collect monopoly rents. The difference is that in this case, the loser might be excluded only from the transportation and commercialization industry serving the colonial route, not necessarily from trading with the colony.

7.2. Why exclusive trade

The shift from plundering to mercantilist trade policies raises a fundamental question: Why did metropolises favour exclusive trade as their primary method of surplus extraction? Initially, many European nations relied on plundering and direct resource extraction, a strategy that, as Findlay and O'Rourke (2007) note, fuelled early colonization. However, this method proved unsustainable. While high-value, low-weight commodities such as gold and silver were easily transported, resources like agricultural land were immobile. Nevertheless, as transport costs declined and colonies specialized in staple exports, taxing trade and manipulating terms of trade became a far more efficient means of surplus extraction. Unlike plundering, this strategy required only trade restrictions and control over key import-export hubs, such as ports, making it simpler and more effective for metropolises to extract economic rents.

7.3. Rethinking decolonization and trade policies

Our model provides new perspectives on colonial history, independence and decolonization. For example, it suggests that a colony would likely favour collaboration with a free-trading metropolis, whose policies would enhance its economic well-being, over one enforcing strong mercantilism. This contrast highlights the potential for trade policy preferences to influence colonial allegiances. Moreover, the model underscores the intricate link between decolonization and trade policies, raising a critical question: Under what specific economic and political conditions did decolonization effectively dismantle mercantilist policies, and when did it simply lead to a shift in who controlled those policies?

Supporting information

Additional supporting information can be found in the online version of this article.

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