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An Economic Theory of Foreign Interventions and Regime Change

Abstract

I construct a theory of foreign interventions in which the preferences of the foreign country over alternative local groups are determined by each group’s international economic ties. In equilibrium, the foreign country supports the group with which it has the strongest ties, since this is most influenceable from the outside. However this is counterweighted by the tendency of the domestic political system to favour the least influenceable group. I allow for a non-economic dimension of policy (geopolitics), and study how the saliency of this dimension may play in favor of the incumbent group. My results help interpret the economic rationale for many Western interventions in developing countries in the 20\textsuperscript{th} century, and the role of economic nationalism in motivating the struggle for regime change. Furthermore, they help explain why the Cold War strengthened the West’s preference for specific local groups. I provide detailed historical evidence in favor of my arguments.

JEL-Code: D700, F100, F500, N400.

Keywords: regime change, foreign interventions, economic power, economic nationalism, Cold War, Latin America.

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1 Introduction

In the last two decades, the political economy literature has put renewed effort in studying the economics of political regime change. For example, an influential body of work has studied the transition to democracy in the 19th and 20th century (e.g. Lizzeri and Persico, 2004; Acemoglu and Robinson, 2006), while other work has focused on the determinants of regime change within the context of non-democratic polities (e.g. Padro-i-Miquel, 2007). While all of these papers see regime change as a possible outcome of the strategic interaction of domestic political groups, almost none of them recognizes a role for foreign players in such an interaction.\(^1\)

There is, however, considerable historical evidence that regime change is affected by (and of consequence for) foreign players as well. For example, many changes in political regime were facilitated or hindered by Western governments in the 20th century (e.g. Iran, 1953; Guatemala, 1954; Chile, 1973; etc.), and quite a few regime changes led to a drastic change in the external relations of the affected country (e.g. Cuba, 1959; Iran, 1979). There are two recurrent elements to these and other examples. First, foreign interventions were underpinned by specific preferences of the intervening government over alternative local groups. These preferences were associated with different policy profiles of alternative groups, most notably for what concerns the treatment of foreign investors and the country’s geopolitical alignment. Geopolitics played a particularly important role during the Cold War, when even small countries had a high strategic importance to the two superpowers.\(^2\) Second, although primarily motivated by the desire of domestic redistributive reforms, the groups that pushed for regime change were also motivated by a strong “nationalistic”, or “anti-imperialist” ideology. This reflected the perception that, under the status quo, the terms conceded to foreign investors were too generous, and reflected a sort of informal political subjugation to foreign countries.

In this paper, I construct an economic theory of regime change that brings these international factors to the forefront. I consider a two-country world where a foreign country \((F)\) has economic

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\(^1\) An exception to this is Aidt and Albornoz (2011), which I discuss in detail below.

\(^2\) Although Western governments often claim that they only support democratically elected governments, their actions have often been motivated primarily by economic and geopolitical considerations. For example, recent empirical evidence suggests that covert CIA interventions were mostly detrimental to democracy during the Cold War (see Easterly et Al., 2008; and Dube et Al., 2011)
power vis-à-vis the home country ($H$), in the sense that a disruption in bilateral economic relations has a higher cost for $F$ than for $H$. I assume that $F$ can use this power to extract rents from $H$, and to secure its alignment in an ongoing geopolitical contest. There are two different types of geopolitical contests, “confrontational” (when $H$’s alignment is beneficial to $F$, but costly to $H$) and “Cold War” (when $H$’s alignment is beneficial to $F$, but does not affect $H$’s welfare directly). There are two groups in $H$, an incumbent and a challenger. These have the same geopolitical preferences, however they may bear a different economic burden from disruption in bilateral relations with $F$. The challenger can overthrow the incumbent at a stochastically-determined cost, but the incumbent can block this by investing in repression. Finally, there is a foreign intervention technology, that $F$ can use to hinder (or facilitate) regime change. I consider two negotiations regimes, one in which pre-existing foreign rents can be renegotiated efficiently after a regime change, and one in which they can only be renegotiated down at the cost of a deterioration in bilateral economic relations (possibly because of reputation concerns for $F$).

My main results are as follows. Not surprisingly, $F$ intervenes in favor of the group (be it the incumbent or the challenger) with which it has the strongest economic ties. This is because this group is a weaker negotiating partner, and therefore provides a stronger guarantee of future rents and geopolitical alignment. However the effect of foreign intervention is counterweighted by a “stronger government effect”, whereby $H$’s political system tends to favor in power the group with a stronger bargaining position vis-à-vis $F$. When pre-existing rents can be renegotiated efficiently, these are the only two effects through which international factors affect domestic regime change. Thus, homogeneous geopolitical preferences are sufficient to rule out any role of geopolitics in this case.

When pre-existing rents cannot be renegotiated efficiently, however, the incumbent group may have an advantage at securing foreign support. This is because this group may be able to unilaterally concede rents to the foreign country, so as to create an expectation of inefficient renegotiation after regime change. When this is the case, regime change is also hindered by an “inefficient renegotiation effect”, which internalizes the cost of regime change stemming from a deterioration in $H$’s external relations. In this case, foreign interventions may be driven by Cold War (but not confrontational) geopolitical concerns: intuitively, this is because economic fric-
tions between $H$ and $F$ expand to contaminate geopolitical relations between the two countries. Thus, economic differences between the two groups may be sufficient to differentiate their geopolitical profile from $F$’s perspective, despite the assumption of *ex-ante* homogenous geopolitical preferences.

The results of the model are consistent with (and may help interpret) a few recent empirical findings in international political economy (see below and section 2.3). More specifically, they provide an economic interpretation of the pattern of Western interventions in some developing countries during the 20th century, and of the emergence of economic nationalism as a key ideological factor in the domestic struggle for regime change. The model may also help understand the role of the Cold War in sharpening the West’s preference for specific local groups. An economic explanation of this preference seems particularly needed, since not always this is easy to explain with intrinsic ideological differences between alternative local groups. I develop my argument by looking at historical evidence from a “classical” chapter in the history of 20th century Western interventions, namely US interventions in Latin America.

The paper contributes to the political economy literature on regime change. Much of this has focused on democratization, and can be organized into two main strands. The first focuses on redistribution as a driver for democratization (e.g. Acemoglu and Robinson, 2006), while the second postulates that it is economically profitable for the ruling group to share power with a broader sets of citizens, (e.g. Lizzeri and Persico, 2004).\(^3\) I borrow the basic structure of the model from papers in the first group, but innovate on these by specifically looking at the case of foreign interventions. To the best of my knowledge, the only paper to have done this before is Aidt and Albornoz (2011), who adapt the Acemoglu and Robinson (2006) model to account for foreign interventions. As in this paper, I assume that a group’s economic profile naturally makes it more or less benevolent towards foreign companies and investors. However my paper differs from Aidt and Albornoz (2011) in two main respects. First, in my model a group’s attitude towards foreign businesses is shaped by negotiations between governments rather than between private agents. This allows me to consider the role of national economic

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\(^3\)For a detailed discussion of the literature on democratization, the interested reader is referred to Acemoglu and Robinson (2006). A very concise review of the literature using formal modeling can instead be found in Ticchi and Vindigni (2008).
power in shaping overseas economic and political expansion. Second, while Aidt and Albornoz (2011) only look at the economic rationale for foreign interventions (to protect national rents in the intervened country), I relate foreign interventions to an additional dimension of policy, namely geopolitical alignment. Because of these differences, my paper offers a set of results that are largely complementary to those by Aidt and Albornoz (2011).

The paper is also related to two recent strands of literature in international political economy. The first is an empirical literature that studies the determinants and consequences of Cold War CIA and KGB interventions. Three papers in particular are relevant to my work. Easterly, Satyanath, and Berger (2008) look at the impact of these interventions for democracy in the intervened country, and find this to be negative both in the short and in the long run. Dube, Kaplan, and Naidu (2011) provide evidence of unusual stock trading in American companies that would soon benefit from classified CIA interventions, and argue that this is evidence in favor of a close involvement of America’s top corporate echelons in this country’s foreign interventions. Finally, Easterly et Al. (2010) find that countries intervened by the CIA imports more from US, a sign that US interventions gave the US a good degree of influence over the intervened country. My results are consistent with the findings of these three papers, and, as I explain in more detail below, may help to interpret some of them. The second strand of literature contains a few theoretical papers studying the efficiency implications of cross-border lobbying for domestic trade policy formation (Endoh, 2005; Aidt and Hwang, 2008; Antras and Padro-i-Miquel, 2011). I depart from this literature in various respects, but most notably because I consider the relation between cross border lobbying and regime change.

The paper is organized as follows. I present the model in sections 2.1 and 2.2, and discuss the main results in section 2.3. Section 3 contains the historical evidence on Latin America, first at the level of overview and then through detailed country studies. Section 4 concludes, and discusses some possible extensions.
2 Model

I describe the structure of the model in section 2.1, and solve for the equilibrium in section 2.2.
The characteristics of the equilibrium are then summarized and discussed in section 2.3.

2.1 Model description

2.1.1 Balance of power, foreign rents, and geopolitics

There are two countries, Home (H) and Foreign (F). When the two countries cooperate economically, H’s national income is worth Y, while F’s national income is worth 1 (this is just a normalization). However if bilateral economic cooperation breaks down, H’s income falls by $gY$, while F’s income falls by $\beta gY$, with $\beta < 1$ and small enough. The two governments negotiate over bilateral cooperation, and this always breaks down in the absence of an agreement. The simplest way to think about this is that H and F are negotiating over a mutual reduction in import tariffs, where it is jointly optimal to eliminate tariffs but individually optimal to keep them in place. The fact that H suffers more from a breakdown in economic cooperation would then capture the fact that F’s elasticity of import demand is higher than H’s, possibly because F is more important a market for H’s products than H is for F’s products.

I assume that, when they are first undertaken, negotiations are always efficient, that is they lead to an agreement on bilateral economic cooperation. There exist two policy tools through which the surplus created by an agreement can be transferred. First, there is a non-distortionary net transfer $rY$ from H to F. This transfer - which can be negative - can be the sum of positive and negative items. One useful way to interpret the former is “rents” granted to F’s companies in H’s economy, while the latter may be interpreted as foreign aid paid by F to H. For concreteness, I will refer to the net transfer as “rent” in what follows. Second, there is a geopolitical decision $\sigma$ that H must make. This consists in deciding whether H is “aligned” ($\sigma = 1$) or not ($\sigma = 0$) with F in an ongoing geopolitical contest. H’s alignment always increases

\footnote{For example, F’s direct investors may be granted favorable terms in the exploitation of local natural resources, or in the provision of local utilities services. Alternatively, F’s exporters may be accorded a preferential access to public expenditure contracts. The importance of this last channel has been demonstrated empirically by Easterly \textit{et Al.} (2010).}
F’s payoff by $sY$, where $s$ will be referred to as the “strategic value” of $H$. On the contrary, it decreases $H$’s own payoff by $-\gamma sY$, and the parameter $\gamma \in \{0, 1\}$ captures the nature of the geopolitical contest.

There are two different types of geopolitical contest. In a “confrontational” contest, $H$ and $F$ are pitched one against the other in the pursuit of a mutually exclusive geopolitical goal. Examples may include the acquisition of a strategically important territory, or the building-up of $H$’s military capacity to the detriment of $F$’s influence over the surrounding region. Within a confrontational contest, $H$’s alignment essentially means that this country surrenders its geopolitical ambitions to $F$. I thus model this type of contest by setting $\gamma = 1$. In a “Cold War” contest, $F$ is involved in a larger geopolitical contest against a third country (or coalition of countries), whose outcome does not affect $H$’s payoffs directly. $H$’s alignment here means that $H$ undertakes supporting activities for $F$ (as opposed to its opponent) that increase $F$’s chances of victory. Examples may include the alignment of voting pattern in the UN, the authorization for $F$ to use the national territory as a military stronghold, or the guarantee of a continued supply of raw materials in the case of war. Since alignment does not have an immediate cost to $H$ in this case, I model it by setting $\gamma = 0$.\(^5\)

Anticipating elements that will be introduced in the next section, I allow for the possibility that alternative groups may be in power in $H$ at the moment of engaging in negotiations with $F$. While all citizens of $H$ are identical in terms of geopolitical preferences, different groups may differ in the cost they bear from a breakdown in bilateral economic cooperation. In other words, different groups in $H$ may have different economic ties with $F$. The outcome of negotiations between the two countries will then also depend on the cost from a breakdown for the specific group that is negotiating for $H$.

Denoting the incumbent group by $i$ and its aggregate loss from a breakdown in cooperation by $g^i$, the optimal value of $r$ and $\sigma$ that comes out of a Nash bargaining between the two parties

\(^5\)In this model, $F$ but not its “Cold War” opponent is active in attracting $H$ to its side. While it would be a natural extension to include a third country, I choose not to do this in the interest of simplicity. The case I am describing should then be thought of as one in which $F$’s capacity to intervene in $H$ (see below) is militarily more developed than its opponent’s. Alternatively, $F$’s superior influence may be grounded in the strength of its economic links with the economy of $H$ (see the conclusions for some further discussion of this point). In a sense, this superior military or economic capacity of $F$ puts $H$ into $F$’s “sphere of influence”.
\begin{equation}
(r^i, \sigma^i) = \arg \max_{r, \sigma} \left\{ (g^i - r - \sigma \gamma s) (\beta g + r + \sigma s) \right\}.
\end{equation}

Clearly, when $\gamma = 0$, $\sigma^i = 1$ is a necessary negotiation outcome. Intuitively, $H$’s geopolitical alignment increases the joint payoff of the two countries, and must therefore be part of a joint welfare-maximizing agreement. When $\gamma = 1$, on the contrary, the maximization in (1) only delivers the optimal total transfer $T^i \equiv r^i + \sigma^i$ from $H$ to $F$, without specifying how this is split between $r^i$ and $\sigma^i$. I solve this indecision by assuming that, whenever negotiations are efficient, the two parties set $\sigma^i = 1$ and $r^i = T^i - s$. Setting $\sigma^i = 1$ in (1), the optimal rent may then be derived as:

\begin{equation}
r^i = \frac{g^i - \beta g}{2} - \frac{1 + \gamma}{2} s.
\end{equation}

I have discussed so far the structure of initial negotiations between $H$ and $F$. However it seems plausible that, once $r$ and $\sigma$ have been set, any renegotiation (e.g. due to a change in government in $H$) may follow different rules than the initial negotiations. In particular, I want to allow for the possibility that a downward renegotiation of $r$ or $\sigma$ is problematic to $F$, possibly because it risks to damage its reputation elsewhere.\(^7\) I capture this possibility by considering two, starkly opposite, renegotiation regimes. In the first regime, renegotiations follow exactly the same procedure as initial negotiations. If group $j$ replaces group $i$ in power, then this will lead to renegotiation along the lines of (1), after substituting $g_i$ with $g_j$. In the second regime, $F$ cannot possibly accept a reduction in either $r$ or $\sigma$. This implies that, whenever the new ruler sets $r^j < r^i$ or $\sigma^j < \sigma^i$, bilateral co-operation between the two countries must break down. While renegotiation is always efficient in the first regime, it may be inefficient in the second regime. With a slight abuse of terminology, I will call the first regime the “efficient renegotiation” regime

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\(^6\)Such a power-based structure of negotiations for tariff reduction may not apply for pairs of countries that are both members of the WTO. This is because the “most favored nation” clause of the WTO prohibits members from erecting discriminatory tariffs against one another. Notice however that, even for pairs of WTO members, power-based negotiations may be relevant in the contest of regional trade agreements, which are not covered by the most favored nation clause. More in general, power based negotiations may be relevant for forms of bilateral economic co-operation that are not covered by the WTO, such as the provision of trade credit.

\(^7\)What this is implicitly saying is that $F$ cares more about its reputation in protecting existing rents than in extracting new rents. This could be, for example, because existing rents are more readily observable by the public than potential rents.
(\(R = 1\)) and the second regime the “inefficient renegotiation” regime (\(R = 0\)).

Notice that, if bilateral cooperation does break down and \(\gamma = 1\), it is always strictly optimal for \(H\)’s re-negotiators to set \(r = 0\), and \(\sigma = 0\). If \(\gamma = 0\), however, the optimal choice of \(\sigma\) after the breakdown is indeterminate. I solve this indecision by assuming that all re-negotiators set \(\sigma = 0\) in this case.\(^8\)

### 2.1.2 Regime change and foreign interventions

Home is endowed with a mass 1 of atomistic citizens, and there are two group: an incumbent (\(e\)) and a challenger (\(c\)). The incumbent has mass \(\delta\), while the challenger has mass \(1 - \delta\). The incumbent, who is initially in power, owns a share \(\theta\) of national income. Some of this income is generated through economic cooperation with \(F\), and disappears if cooperation breaks down. This portion of the incumbent’s income represents a share \(\theta^*\) of the total cost to \(H\) from a breakdown in cooperation. In other words, the incumbent has total income \(\theta Y\), of which \(\theta^* g Y\) disappears if cooperation breaks down. It follows that the challenger has total income \((1 - \theta) Y\), of which \((1 - \theta^*) g Y\) disappears if cooperation breaks down. Of course, we require \(\theta \geq \theta^* g\).

The challenger has the capacity to stage a revolution, which is always successful at overthrowing the incumbent and bringing the challenger into power. This “regime change” has two benefits for the challenger. First, it allows the challenger to appropriate a share \(\tau \in (0, 1)\) of the incumbent’s income. I take the tax \(\tau\) to be exogenously given, and to capture the degree of appropriability of \(e\)’s income. For simplicity, I assume this tax to be non distortionary, and to apply uniformly to \(e\)’s income. This implies that exactly \(\tau\) of the portion of \(e\)’s income that relies on cooperation with \(F\) gets redistributed to \(e\), together with the rest. The second potential benefit from regime change is that there is a round of negotiations (or renegotiation) with \(F\) after the leadership of \(H\) has been determined, and regime change gives \(e\) the chance to participate in these negotiations in place of \(e\).

The total cost of revolution is \((\mu + m F + m) Y\). The term \(\mu\) is a stochastic term that captures the expected cost of organizing an illegal action. As standard in the literature, I assume this

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\(^8\)One interpretation of this assumption is that \(F\)’s opponent in the Cold War may offer to alleviate \(H\)’s economic hardship following to the breakdown of cooperation, in exchange for its geopolitical switch. Any such deal would be optimal for negotiators in \(H\), who don’t have an intrinsic preference over \(\sigma\).
cost to be influenced by stochastically determined factors (such as the existence of a leader, the business cycle, etc.) that are uncorrelated with other variables in the model. The distribution of $\mu$ is taken to be uniform over the interval $[-1, M - 1]$ (with $M > 1$), where the negative portion of the support may capture additional stochastic benefits from regime change (such as the strength and diffusion of ideas of redistributional justice). The parameter $M$ will provide for an inverse measure of the risk of revolution. Next, I allow for the possibility that $F$ orchestrates a direct intervention in $H$, to twist the probability of regime change to its advantage. This intervention takes place immediately after $\mu$ is revealed. Its effect is captured by the term $m^F$, which is positive if the intervention is against regime change or negative if it is in favor.\textsuperscript{9} Finally, the term $m \geq 0$ represents the incumbent’s investment in repression activities.\textsuperscript{10} This is set by $e$ after observing all other factors that determine the cost of revolution ($\mu$ and $m^F$), and immediately before the revolution decision by $c$. Notice that, by this choice of timing, I am giving $F$ a residual role in $H$’s politics, in the sense that this country will only intervene when it is absolutely necessary to twist regime change to its advantage.

I assume that, whenever the incumbent is unwilling to invest enough in repression to avoid a revolution, it chooses to transfer power to the challenger rather then waiting for this group to stage a revolution. This is a natural assumption, given that revolution will normally entail costs to an incumbent that are on top of any cost from a change in policy. The main consequence of this assumption is that revolution will never take place in this model.

Finally, I allow for the possibility that the incumbent unilaterally sets $r$ and $\sigma$ before $\mu$ is revealed. This is to allow for the possibility that, in a world where renegotiation is inefficient, the incumbent may want to create an entrenched interest of $F$ in the status quo, thus decreasing the probability of regime change to its advantage. Because rents and alignment decisions are often medium- to long-run in nature (think of the case of favorable concessions to $F$’s investors, or the concession of $H$’s territory for the construction of military bases), it seems natural to assume

\textsuperscript{9}Examples of interventions against regime change may include direct military interventions, the provision of weapons or training to the incumbent’s armed forces, or aid transfers in period of economic distress. Examples of interventions in favor of regime change are the provision of military support to guerrilla fighters in the challenger group, or the promise of diplomatic recognition following to regime change.

\textsuperscript{10}This term may capture factors such as the intensity of police checks or the strength of the military (when this is loyal to the existing regime), which are likely to increase the average expected cost of an illegal action.
that they are preliminary set before observing the stochastic cost of revolution. I distinguish initial from final rents and alignment by denoting the former by $r_1$ and $\sigma_1$, the latter by $r_2$ and $\sigma_2$.

Summing up, the timing of the game is:

1. The incumbent ($e$) may unilaterally set foreign rents ($r_1 Y$ and $\sigma_1$);
2. Nature picks the stochastic cost of revolution ($\mu Y$) for the challenger ($c$);
3. The foreign country ($F$) invests $m^F Y$ in intervention; after observing this, $e$ chooses whether to invest $m Y$ in repression, or to transfer power to $c$.
4. If $e$ has not transferred power, $c$ may stage a successful revolution at a cost ($\mu + m^F + m$)Y.
5. If $c$ is in power, it appropriates a share $\tau$ of $e$’s income. Whoever is in power negotiates (or renegotiates) with $F$ the final level of rents ($r_2 Y$ and $\sigma_2$). If $R = 1$, the outcome of the negotiation does not depend on $r_1$ and $\sigma_1$. If $R = 0$, $F$ imposes sanctions whenever $r_2 < r_1$ or $\sigma_2 < \sigma_1$.
6. All payoffs realize.

In the next section, I solve for the equilibrium of the game using backward induction.

### 2.2 Backward induction

Since all variables are expressed as a share of $H$’s total income, changes in this variable will not affect the equilibrium. I then normalize all variables dividing them by $Y$.

**Period 6**

Denote by $r_2(j)$ and $\sigma_2(j)$ the rents and alignment negotiated by group $j$ in period 5. Also, denote by $\Gamma(j, R)$ an indicator function that is one if, under group $j$, economic cooperation between $H$ and $F$ has broken down in period 5, and zero otherwise. Notice that, since negotiations are always efficient for $R = 1$, it is $\Gamma(j, 1) = 0$ $\forall j$. Finally, denote by $\zeta$ an indicator function that is one if revolution has taken place, zero otherwise.
The final payoffs are then:

\[
W^e(e) = \frac{\theta - \Gamma (e, R) \theta^* g}{\delta} - r_2(e) - \sigma_2(e) \gamma s - \frac{m}{\delta}
\]  
(3)

\[
W^e(c) = \frac{(1 - \tau) \theta - \Gamma (c, R) (1 - \tau) \theta^* g}{\delta} - r_2(e) - \sigma_2(e) \gamma s - \frac{m}{\delta}
\]  
(4)

\[
W^c(e) = \frac{1 - \theta - \Gamma (e, R) (1 - \theta^*) g}{1 - \delta} - r_2(e) - \sigma_2(e) \gamma s
\]  
(5)

\[
W^c(c) = \frac{1 - \theta (1 - \tau) - \Gamma (c, R) [1 - \theta^*(1 - \tau)] g}{1 - \delta} - r_2(e) - \sigma_2(e) \gamma s - \frac{\zeta \mu + m^F + m}{1 - \delta}
\]  
(6)

\[
W^F(j) = r_2(j) + \sigma_2(j) s - \Gamma (j, R) \beta g - |m^F|
\]  
(7)

where \(W^i(j)\) denotes the aggregate payoff to player \(i\) when group \(j\) is in power.

**Period 5**

Since the consequences of regime change for domestic redistribution are exogenously given, all we need to focus on is the different outcome of negotiations depending on the group that is in power. I begin by considering the case in which renegotiation is efficient \((R = 1)\), and I will then consider the case in which it is inefficient \((R = 0)\).

If \(R = 1\), \(r_2\) and \(\sigma_2\) are set according to (1), independently on \(r_1\) and \(\sigma_1\). From our discussion in section (2.1.1), we know that it must be \(\sigma(e) = \sigma(c) = 1\). Thus, all that can differentiate \(e\) and \(c\) is their outcome in negotiating \(r_2\). Using (2), we find that the rents conceded by the two groups are:

\[
r_2(e) = \frac{\theta^*/\delta - \beta}{2} g - \frac{1 + \gamma}{2} s \equiv r^e
\]  
(8)

\[
r_2(c) = \frac{[1 - \theta^*(1 - \tau)]/\delta - \beta}{2} g - \frac{1 + \gamma}{2} s \equiv r^c.
\]  
(9)

We want to know under what conditions the incumbent concedes a higher rent to \(F\) than the challenger. Using (8) and (9), I find that \(r^e > r^c\) if and only if:

\[
\theta^* > \frac{\delta}{1 - \delta \tau} \equiv \theta^*.
\]  
(10)
Using the threshold $\theta^*$, we may write the difference between the two levels of rents as:

$$r^e - r^c = \frac{\theta^* - \theta^*}{(1 - \delta)\theta^*} g.$$  \hfill (11)

Equation (11) says that the incumbent concedes a higher rent to $F$ if and only if its economic ties with $F$ are sufficiently strong relative to those of $c$ ($\theta^* > \theta^*$). Intuitively, strong economic ties make the incumbent very vulnerable to a breakdown in bilateral economic cooperation, decreasing its negotiating power vis-à-vis $F$. The threshold $\theta^*$ is decreasing in $\tau$, because the more redistributive is regime change, the less the incumbent’s initial ties with $F$ are group-specific. It is also increasing in $\delta$, suggesting that a smaller group is more likely to concede a higher rents to $F$. The difference between the rents conceded by the two groups is larger, the larger is the value of bilateral economic cooperation ($g$).\footnote{Comparing (8) and (9), it is immediately evident that $r^e - r^c$ is decreasing in $\delta$.}

On the contrary, although the nature of the geopolitical conflict ($\gamma$) and the strategic importance of $H$ ($s$) matter for the rent that $F$ may expect to receive from $H$, these variables do not affect the difference in the rents conceded by $e$ and $c$. This is, of course, a consequence of our assumption that the two groups have identical geopolitical preferences.

If $R = 0$, then $r_2$ and $\sigma_2$ are set independently on $r_1$ and $\sigma_1$ if $r_1 \leq r^j$ and $\sigma_1 \leq 1$, while they do depend on $r_1$ and $\sigma_1$ otherwise. Notice that, since it is always $\sigma_1 \leq 1$, all we need to be concerned with is the size of $r_1$, relative to $r^j$. Intuitively, geopolitics per se can never be a cause for the breaking up of economic cooperation, since parties have an alternative (and preferred) tool to redistribute surplus between themselves. Clearly, if $r_1 \leq r^j$, it must be again $[r_2(j), \sigma_2(j)] = (r^j, 1)$. If instead $r_1 > r^j$, the negotiating group must choose between setting $[r_2(j), \sigma_2(j)] = (r_1, 1)$ and preserving the economic cooperation with $F$, or setting $[r_2(j), \sigma_2(j)] = (0, 0)$ and breaking it down. The key condition for $e$ to prefer the former to the latter is:

$$r_1 < \frac{\theta^* g}{\delta} - \gamma s \equiv r^e$$  \hfill (12)
while the analogous condition for $c$ is:

$$r_1 < \frac{[1 - (1 - \tau)\theta^*]g - \gamma s}{1 - \delta} \equiv \bar{r}^c.$$  \hfill (13)

Notice that it is always $\bar{r}^e > r^e$ and $\bar{r}^c > r^c$. Furthermore, it is $\bar{r}^e > \bar{r}^c$ if and only if $\theta^* > \theta^*$. To summarize, we have identified three relevant ranges for $r_1$, when group $j$ is eventually in power. If $r_1 \leq r^j$, then it is $[r_2(j), \sigma_2(j)] = (r^j, 1)$ as prescribed by (1). If $r_1 \in (r^j, \bar{r}^j]$, it is $[r_2(j), \sigma_2(j)] = (r^j, 1)$. Finally, if $r_1 > \bar{r}^j$, it is $[r_2(j), \sigma_2(j)] = (0, 0)$. Notice that a breakdown in economic cooperation always contaminates geopolitical relations between $H$ and $F$ as well. I here stress again that, while for $\gamma = 1$ this a necessary outcome of $i$’s optimization, for $\gamma = 0$ it is the results of assumptions made. As explained in section 2.1.1, the logic underlying this assumption is that a breakdown in bilateral cooperation destroys any economic leverage that $F$ has on $H$, precisely at a time in which $H$ is in need of economic support. This will arguably make it easy for $F$’s geopolitical competitor to step in, particularly given $H$’s geopolitical indifference.

**Period 4**

If $e$ has transferred power in period 3, then nothing happens in this stage. If $e$ has not transferred power, on the contrary, $c$ stages a revolution whenever the benefit from doing so is higher than the cost, given $F$’s investment in foreign interventions and $e$’s investment in repression. Plugging $\zeta = 1$ in (6) and setting this greater than (5) gives:

$$\mu < \tau \theta + (1 - \delta)[r_2(e) - r_2(c)] + (1 - \delta) [\sigma_2(e) - \sigma_2(c)] \gamma s + 
+ [\Gamma(e, R) - \Gamma(c, R)] (1 - \theta^*)g - \Gamma(c, R)\tau \theta^*g + \nm_F - m.$$  \hfill (14)

**Period 3**

Taking $m^F$ as given, $e$ chooses to invest in repression if and only if this is not too costly, relative to what the incumbent has to loose from regime change. The maximum investment in
repression that $e$ is willing to undertake is found by setting $W^e(e) - W^e(c) > 0$:

$$m < \tau \theta + \delta [r_2(c) - r_2(e)] + \delta [\sigma_2(e) - \sigma_2(c)] \gamma s +$$

$$+ [\Gamma(c, R) - \Gamma(e, R)] \theta^s g - \Gamma(c, R) \tau \theta^s g \equiv m. \tag{15}$$

When investing $m$ is not enough to stop a revolution, $e$ transfers power to $c$. Plugging $m$ in (14), we find that this happens when:

$$\mu < r_2(e) - r_2(c) + [\sigma_2(e) - \sigma_2(c)] \gamma s +$$

$$+ [\Gamma(e, R) - \Gamma(c, R)] g +$$

$$- m^F. \tag{16}$$

Several observations can be made about condition (16). First, the probability of regime change is affected by a “stronger-government effect”. This is captured by the first line on the LHS of (16). The stronger-government effect attributes a political advantage to the group that has the higher bargaining power vis-à-vis $F$. To see this, notice that if, for example, $c$ has a higher bargaining power than $e$, it is $r_2(c) < r_2(e)$ and $\sigma_2(c) \leq \sigma_2(e)$. But condition (16) then suggests that group $c$ has a higher probability of going to power, relative to the case in which it has a lower bargaining power than $e$ (as it would then be $r_2(c) > r_2(e)$ and $\sigma_2(c) \geq \sigma_2(e)$). Intuitively, regime change is welfare-increasing for the country as a whole, and this is recognized by the domestic political system through a stronger incentive for $c$ to rebel and a weaker incentive for $e$ to repress.

Next, regime change is also affected by a “bilateral disruption effect”, as captured by the second line in (16). This effect consists in the net gain (loss) to the country from any expected change in bilateral economic relations due to the regime change. It attributes a political advantage to the group that is less likely to provoke a breakdown in bilateral economic cooperation with $F$. To stick to the previous example, if $c$’s better negotiation outcomes come at the cost of bilateral disruption, then the advantage than this group obtains from the stronger-government
effect is decreased by the bilateral disruption effect (it is \( \Gamma(c, R) \geq \Gamma(e, R) \) in condition 16).
Relative to before, the welfare gain from regime change is lower, and possibly negative. Notice that the bilateral disruption effect can only exists if \( R = 0 \), because final negotiations are always efficient if \( R = 1 \).

Finally, I notice that the condition for regime change does not depend on domestic inequality \((\theta)\), nor on the technology of redistribution \((\tau)\). This is just a consequence of the way in which I have modeled the technology of repression: an increase in \( \tau \theta \) increases repression in such a way, that it maps into an equal increase in the cost and benefit of revolution. While domestic inequality is normally an important determinant of regime change in the literature, this simple model allows me to better focus on the impact of foreign interventions. I will show later that domestic inequality will still play a role in this model, by shaping the willingness of the incumbent to unilaterally grant rents to \( F \).

I now turn to analyzing \( F \)’s intervention decision. For a given \( \mu \), \( F \) intervenes in \( H \) whenever this is necessary and sufficient to affect regime change to its advantage. In particular, if \( F \) is against regime change, it only intervenes when the incumbent is too weak to resist on its own, but would be willing to resist if \( F \)’s intervention helped it to repress the challenger. If \( F \) is in favor of regime change, it only intervenes when the challenger is not quite strong enough to overthrow the incumbent, but would become so with \( F \)’s external support. Define:

\[
\m_F^F \equiv r_2(e) - r_2(c) + [\sigma_2(e) - \sigma_2(c)] \beta g - [\Gamma(e, R) - \Gamma(c, R)] \beta g. \tag{17}
\]

Then, it is easy to see using (7) that \( \m_F^F \) is a positive upper bound for \( m_F \) when \( F \) is against regime change, a negative lower bound when \( F \) is in favor of regime change. Intuitively, \( F \) is in favor of the group that can be expected to concede more in terms of economic rents and geopolitical alignment.

When \( \m_F^F > 0 \) (\( \m_F^F < 0 \)) and \( m_F \leq \m_F^F \) (\( m_F \geq \m_F^F \)) is enough to prevent (trigger) regime change, \( F \) intervenes; otherwise, it does not. To find out when regime change actually happens,
we then need to plug $\pi^F$ into (16):

$$
\mu < -(1 - \gamma) \left[ \sigma_2(e) - \sigma_2(c) \right] s +
- [\Gamma(c, R) - \Gamma(e, R)] (1 + \beta) g.
$$ (18)

The stronger-government effect (whatever appears in the first line of 16) disappears in (18). This is because the aggregate welfare gain (loss) that regime change affords to $H$ is matched by an identical loss (gain) to $F$. As foreign interventions internalize this, the stronger-government effect - the force that pushes for the group with stronger bargaining power to assume office in $H$ - is perfectly offset by the impact of foreign interventions. In other words, one reason why $F$ may want to intervene in $H$ is to oppose the tendency of $H$’s political system to select in power the group that is less dependent on $F$. In this model, it is always just exactly able to do so.

In stark contrast, condition (18) suggests that the bilateral disruption effect is made stronger by foreign interventions. Contrarily to the stronger-government effect, this effect is not associated with a transfer of welfare from $F$ to $H$, but rather with a joint welfare loss for the two countries. As foreign interventions internalize $F$’s share of this loss, the domestic political force that favors the group with better bilateral relations is reinforced. Thus, a second reason why $F$ may want to intervene is to support the tendency of $H$’s political system to minimize the risk of bilateral disruption. Notice that there are two components to this reason for foreign interventions. First, $F$ worries about the economic consequences of a breakdown in economic cooperation. Second, it worries about the consequences of this breakdown for $H$’s geopolitical alignment. Crucially, this second component decreases the probability of regime change if and only if the ongoing geopolitical contest is of the Cold War type ($\gamma = 0$). This is because it is only in this case that bilateral disruption is associated with a joint loss of welfare.\footnote{When $\gamma = 1$, geopolitics enters the stronger-government effect, and is thus cancelled out as a result of foreign interventions.}

Before concluding this section, I re-write condition (18) as it applies in two special cases. The first is when bilateral disruption does not occur under either ruler ($\Gamma(e, R) = \Gamma(c, R) = 0$). The second is when bilateral disruption does not occur if $e$ stays in power, but it occurs if $c$ goes to
power \((\Gamma(e, R) = 0, \Gamma(c, R) = 1)\). The two special-case versions of (18) are:\(^{13}\)

\[
\begin{align*}
\mu < 0 & \quad (19) \\
\mu < -(1 - \gamma)s - (1 + \beta)g & \equiv -\mu. \quad (20)
\end{align*}
\]

I notice that, in the first case, the probability of regime change is the same \((\frac{1}{M})\) as if \(H\) and \(F\) were not related \((g = s = 0)\). On the contrary, in the second case the probability of regime change is lower.

**Period 2**

In this period, Nature picks the stochastic component of the cost of revolution \((\mu)\) from the distribution \(U[-1, M - 1]\).

**Period 1**

In this period, the incumbent may choose to unilaterally concede rents to \(F\)’s investors, and to align itself with the government of this country. There is an obvious reason why the incumbent may want to do so. Under some conditions, an appropriate mix of unilateral concessions may determine the final policy outcome to the incumbent’s advantage. In particular, initial concessions may create the expectation of a breakdown in bilateral cooperation following to regime change, and in that case only. In turn, that would create a stake of \(F\) in protecting the current regime. Comparing (19) and (20), we find that this would increase \(e\)’s chances of clinging on to power by \(\frac{\mu}{M}\). Using the terminology developed in previous section, unilateral concessions may create a bilateral disruption effect in favor of the incumbent. Notice however that this strategy can never be successful if \(R = 1\), since bilateral disruption is always ruled out under efficient renegotiation. Thus, there will be no unilateral concessions if \(R = 1\),\(^{14}\) and we only need to focus on the case in which \(R = 0\).

If \(R = 0\), unilateral concessions always require \(\sigma_1 = 1\) under current assumptions.\(^{15}\) But

\(^{13}\)To avoid corner solutions, I assume that \(\mu < 1\). Alternatively, I could have assumed \(\mu\) to be uniformly distributed over the interval \([-a, M - a]\), with \(a\) large enough and \(M > a\).

\(^{14}\)More precisely, it will be \(r_1 = 0\), while \(\sigma_1\) will not be set.

\(^{15}\)Whatever the total transfer unilaterally conceded by the incumbent, \(\sigma_1 = 1\) is the strictly optimal choice if \(\gamma = 0\). If \(\gamma = 1\), \(\sigma_1 = 1\) follows from our assumption that all agents strictly prefer \(\sigma\) to \(r\) as a tool to transfer surplus (remember that these two tools are perfect substitutes when \(\gamma = 1\)).
under what conditions do unilateral concessions lead to a bilateral disruption effect in favor of the incumbent? First, notice that there cannot be a bilateral disruption effect if \( r_1 > \max[r_e, r^c] \) \((r_1 < \min[r_e, r^c])\), since disruption happens (does not happen) under both regimes in this case.

Next, if \( r^e < r^c \) and \( e \) sets \( r_1 \in [r_e, r^c] \), there is a bilateral disruption effect that goes against the incumbent, since disruption would only happen when \( e \) stays in power. Thus, the only situation in which \( e \) may want to set \( r_1 > 0 \) is for \( r_e > r^c \), or \( \theta^* > \theta^e \). If it does choose to set \( r_1 > 0 \) in this case, then its best option is clearly to set \( r_1 = r^c \), since this is the least costly way to obtain the desired bilateral disruption effect.

I thus need to derive conditions such that, if \( \theta^* > \theta^e \), \( e \) prefers to set \( r_1 = r^e \) to setting \( r_1 = 0 \). Define \( \tilde{r} \equiv \max(r^c - r^e, 0) \). Then, I show in Appendix A that the key condition for \( e \) to prefer \( r_1 = r^c \) to \( r_1 = 0 \) is:

\[
\mu - \left( \frac{1 - \tau}{\delta} \right) \left( \frac{(1 - \tau)\theta^*g - \delta(r^c + \tilde{r}) - \delta\gamma s}{\delta} - \frac{r^c}{\delta} \right) + \left( \frac{M - 1 + \mu}{M} \right) (1 - (1 - \tau)\theta^*g - \delta(r^c + \tilde{r}) - \delta\gamma s) - r^c + \frac{1}{M} \int_0^{(1 - \tau)\theta^*g - \delta\gamma s - \delta(r^c + \tau)} x dx. \tag{21}
\]

Condition (21) says that \( e \) concedes rents unilaterally whenever the benefit from doing so is larger than the cost. On the LHS of (21) is the extra probability of staying in power thanks to foreign interventions, multiplied by the value of staying in power.\(^{16}\) The first term of the RHS is the probability that \( e \) remains in power, multiplied by the cost to \( e \) from setting \( r_1 = r^c \) if \( e \) remains in power. Since the incumbent would have set \( r_2 = r^e \) anyway, this cost disappear if \( \tilde{r} = 0 \). The second term is the probability that \( e \) loses power, multiplied by the cost of bilateral disruption to \( e \). To set \( r_1 = r^e \) creates the possibility of bilateral disruption between \( H \) and \( F \) if \( c \) goes to power, and this is costly to \( e \) as well. The third term captures the lower cost of foreign

\(^{16}\)The extra-probability of staying in power thanks to foreign interventions is less than \( \frac{\mu}{M} \), because the perspective of bilateral disruption following to regime change also prompts \( e \) to invest more in repression. Still, the effect of foreign interventions is always to reduce the probability of regime change, as can be verified by plugging in \( \mu \).
rents when $c$ goes to power. Finally, the last term captures extra costs of military expenses incurred by $e$ when $r_1 = r^c$.

An unambiguous prediction that comes out of (21) is that $e$ is more likely to give out rents strategically when, ceteris paribus, domestic inequality is high (high $\theta$).\textsuperscript{17} This is not surprising, since in this case the benefit of holding on to power is large relative to the cost of granting rents to foreigners.

2.3 Results

I now summarize the characteristics of the equilibrium in form of propositions.\textsuperscript{18} To do that, I introduce a last bit of notation: denote by $\pi^{FI}(R)$ and $\pi^{RC}(R)$ the probabilities that foreign interventions and regime change take place in $H$, for a given renegotiation regime $R$.

I begin by describing $H$’s domestic political equilibrium in a hypothetical world where $H$ and $F$ are not linked by economic or geopolitical interests ($g = s = 0$). This case provides a benchmark against which to compare the results in the general case.

**Lemma 1** If $H$ and $F$ are not linked by economic or geopolitical interests ($g = s = 0$), the probabilities of foreign interventions and regime change are:

\[
\begin{align*}
\pi^{FI}(R) &= 0 \\
\pi^{RC}(R) &= \frac{1}{M}
\end{align*}
\]

for $R \in \{0, 1\}$.

Lemma 1 conveys two simple points. The first is that government-to-government economic and geopolitical cooperation provides the only rationale for $F$ to intervene in $H$. Thus, there are no foreign interventions when such cooperation has no intrinsic value ($g = s = 0$), and $H$’s political equilibrium is then fully independent on external factors. The second is that this independent political equilibrium of $H$ (as captured by the probability of regime change $\pi^{RC}(R)$)

\textsuperscript{17}This is easily verified by plugging $\mu$ into (21).

\textsuperscript{18}The proofs to all results in this section follow from our discussion in section 2.2, but are also reported in the Appendix.
does not depend on domestic inequality, nor on the technology of redistribution. As discussed above, this is a consequence of assumptions made: a higher $\tau \theta$ has offsetting effects on the probability of regime change, because it increases the intensity of repression just as much as it increases the prize from revolution. The reason for presenting such a stripped-down model of regime change is that it allows us to focus more sharply on the consequences of foreign interventions.

I now return to the case of interest, $g > 0$ or $s > 0$. The impact of foreign influence on regime change depends sharply on whether existing rents can be renegotiated efficiently or not. I thus look at two cases in two separate propositions. Proposition 1 looks at the case in which renegotiation is efficient:

**Proposition 1** If renegotiation is efficient ($R = 1$), the incumbent does not unilaterally concede rents in period 1. The probabilities of foreign interventions and regime change are:

$$
\pi^{FI}(1) = \left| \frac{\theta^* - \bar{\theta}^*}{M(1 - \delta)\theta^*g} \right|
$$

$$
\pi^{RC}(1) = \frac{1}{M}.
$$

Foreign interventions are against regime change if $\theta^* > \bar{\theta}^*$, in favor of regime change if $\theta^* < \bar{\theta}^*$. In the negotiations in period 5, ruling group i concedes rents $r^i$, and aligns itself with F.

There is always a positive probability of foreign interventions according to Proposition 1 (unless $\theta^* = \bar{\theta}^*$), and these interventions are in favor of the group with the strongest economic ties (after redistribution) with F. Thus, F intervenes against regime change if it has the strongest economic ties with the incumbent, in favor of regime change if it has the strongest economic ties with the challenger.\(^\text{19}\) Foreign interventions are more likely, the stronger the economic ties between the two countries (high $g$), the more different the ties of the two groups (high $\theta^* - \bar{\theta}^*$), and the higher the revolutionary threat ($\frac{1}{M}$).

A key point to notice that, in this case, foreign interventions are only motivated by economic differences between the two groups. Thus, the assumption that e and c have equal geopolitical

\(^{19}\)Notice that, since $\bar{\theta}^*$ is increasing in $\delta$, foreign interventions are biased in favor of the smallest groups.
preferences is sufficient to rule out any special role of geopolitics when there is efficient renegotiation. Intuitively, efficient renegotiation prevents the economic differences between the two groups from expanding to create a cleavage in their geopolitical preferences as well. As a result, any unfavorable economic consequence of regime change (or the lack of) from $F$’s perspective does not also contaminate the geopolitical relations between the two countries, which remain good independently on who is in power.

One striking result of Proposition 1 is that foreign interventions do not have an impact on the probability of regime change, which remains the same as in the case $g = s = 0$. As explained in section 2.2, this is because the effect of foreign interventions (to favor the group with stronger economic ties with $F$) are perfectly offset by what I called a “stronger-government effect” (which favors the group that has the strongest bargaining power vis-à-vis $F$). Intuitively, the possibility of decreasing the country’s dependence on $F$ is recognized by the political system of $H$, which regulates the incentives to rebel and repress in favor of the group with the strongest bargaining power vis-à-vis $F$. While these two effects need not cancel each other in reality (they do so here merely by my choice of functional forms), Proposition 1 suggests that one role of foreign interventions is simply to contrast a tendency of political systems to create governments less dependent in the international arena.\(^{20}\)

Next, Proposition 2 looks at the case with inefficient renegotiation:

**Proposition 2** If renegotiation is inefficient ($R = 0$), there are two distinct cases:

- If $\theta^* \leq \hat{\theta}^*$, or $\theta^* > \hat{\theta}^*$ and condition (21) does not hold, the equilibrium is the same as for $R = 1$.

- If $\theta^* > \hat{\theta}^*$ and condition (21) holds, the incumbent unilaterally set rents at $r_1 = \max(r^c, r^e)$

\(^{20}\)Another result of Proposition 1 is that $F$ does not have a strong preference between $e$ and $c$ when most of the economic ties it has with $H$ accrue to the government of this country, rather than to any of its groups. Suppose for example that $g$ is the value of bilateral cooperation in the extractive sector, and $H$’s mineral resources are owned by a kleptocratic state. A natural way to model this situation would be to assume $\theta^* = 1$ and $\tau = 1$, since whoever controls power has also a full stake in the extractive sector. But Proposition (1) then suggests that $F$ does not intervene in $H$ based on an intrinsic economic preference for either group (except for the fact that $F$ still favors the smallest group). This example suggests that foreign interventions in some kleptocratic, resource-rich African states may be driven more by considerations of temporary political expedience than by the economic reasons illustrated in this model.
in period 1. The probabilities of foreign interventions and regime change are:

\[
\pi^{FI}(0) = \Pi^{FI}(g, (1 - \gamma)s) > \pi^{FI}(1)
\]

\[
\pi^{RC}(0) = \Pi^{RC}(g, (1 - \gamma)s) < \pi^{RC}(1).
\]

In this case, foreign interventions are always against regime change. In the negotiations in period 5, the survived incumbent confirms the rents conceded in period 1, while the successful challenger fully expropriates them. Furthermore, the former group aligns itself with F, while the latter aligns itself against F.

Inefficient renegotiation may lead to a different political equilibrium in one specific case: namely, when the incumbent has stronger economic ties with F than the challenger (\(\theta^* > \bar{\theta}^*\)), inefficient renegotiation may create an incumbent advantage. This is because, in this case, the incumbent may use its superior commitment capacity to unilaterally set rents at a level that pre-figures conflictual renegotiation should the challenger go to power. Faced with a higher cost of renegotiation, F is then willing to stand by the incumbent’s side in a larger number of cases (\(\pi^{FI}(0) > \pi^{FI}(1)\)). Importantly, this higher probability of foreign interventions now reduces the probability of regime change. This is because of the “bilateral disruption effect” discussed in section (2.2): regime change is now associated with a joint welfare loss for the two countries, and this is fully recognized by H’s political system through weaker incentives to rebel and stronger incentives to repress.\(^{21}\) In some sense, it is as if the incumbent could “hide” some of the prize from revolution by transferring it to F, that is beyond the shield of bilateral disruption. Of course, this is a costly strategy for the incumbent, and so it is only undertaken when its benefits are large enough (which is the case when condition 21 holds).

The incumbent advantage is larger (and the probability of regime change lower), the larger is the cost of bilateral disruption. This cost has two components. First, there is an economic component, \(g\): regime change leads to a collapse in economic cooperation, which entails a cost

\(^{21}\)As noted in section 2.1.1, I am modeling a situation where only F has the capacity to affect the cost of revolution in H, but not its geopolitical opponent. The result that \(\pi^{RC}(0)\) is decreasing in \(s\) when \(\gamma = 0\) would need to be qualified if F’s opponent had also the capacity to intervene, but would arguably go through as long as this capacity is not too strong.
to both $H$ and $F$. Second, there is a geopolitical component, $(1 - \gamma)s$. The importance of this component depends on the nature of the geopolitical conflict. If this is confrontational ($\gamma = 1$), this component washes away, and the incumbent advantage does not depend on $H$’s strategic importance. Intuitively, this is because a more salient geopolitical contest between $H$ and $F$ also boosts the revolutionary incentives of the challenger, exactly offsetting the effect of $F$’s higher willingness to intervene. On the contrary, if geopolitics is of the Cold War type ($\gamma = 0$), the incumbent advantage is stronger in strategically important countries. Intuitively, a higher strategic importance of $H$ does not strengthen the challenger’s revolutionary incentives.

Thus, when renegotiation is inefficient economic differences between two groups can now endogenously create two very different geopolitical profiles for them, despite the fact that their geopolitical preferences are assumed to be identical. In fact, whenever the incumbent uses rents strategically, the geopolitical alliance between $H$ and $F$ survives until the incumbent remains in power, collapses if the challenger goes to power.

These results may help understand the role played by a few influential Western countries (such as the US and some former European colonizers) in the political evolution of some developing countries in the 20th century. The earlier literature has pointed out that large domestic inequality was a key determinant of popular rebellion against elite-dominated regimes, and thus an important factor in the advent of democracy (e.g. Acemoglu and Robinson, 2006). My model suggests that, when foreign interventions are taken into account, the source of elite wealth is important as well. In particular, elite groups that received a large share of their income from trade-related activities were disproportionally inclined to please important trade partners in the West with economic and geopolitical concessions. This created the basis for a Western role in affecting domestic political change. Thus, on one hand Western countries intervened in a number of occasions to help struggling elite holding on to power, or re-conquering it from fragile adversaries. On the other, economic nationalism and “anti-imperialism” became intimately intertwined with the redistributive rationale for revolution, as captured by the model’s “stronger-government effect.”  

\footnote{Often, successful regime change was followed by an outburst of economic nationalism (e.g. Iran, 1951-1953; Guatemala, 1951-1954; Cuba, 1959-1962; Chile, 1970-1973), leading to a rapid deterioration of economic relations between these countries and the West.}
The West’s difficulty to come to terms with economic nationalism also provides one reason why the Cold War mattered so much for the domestic political evolutions of some developing countries. Perhaps more than any other global contest between great powers, the Cold War gave countries across Latin America, Africa and South East Asia a high strategic importance. On the surface, the West may have had more economic leverage over these countries, relative to the USSR. However the nature of these economic ties was such to prospect economic disruption between the West and these countries, had their traditional rulers been supplanted by some of the new forces that were pressing for democratization. The prospect of economic disruption weakened the West’s economic advantage, and this contributed to strengthening its support for the status quo. Thus, domestic political change became linked to the Cold War through Western interventions.

In the next section, I investigate how my story fits the case of US interventions in Latin America in 20th century. Before moving on, however, I note that my model is compatible with, and may help interpret, several recent empirical results on foreign influence. First, under all political regimes except for the one with inefficient renegotiation, the model predicts that $r$ decreases when $s$ increases. This is in line with evidence that the allocation of US aid followed security concerns more closely during the Cold War than after (Meernik, Krueger and Poe, 1998), and that the US allocates more aid to a country when it becomes a member of the UN Security Council (Kuziemko and Werker, 2006).23 Next, the model predicts that $F$’s interventions are always in favor of the group that will concede higher rents to this country. This is consistent with the results of Easterly et Al. (2010), that find that governments that were installed or supported by the CIA in 1947-1989 were more likely to divert public expenditure in favor of US products. In the model’s interpretation, this was so because these government represented groups with stronger economic ties with the US, and thus more responsive to its large economic power. Finally, Besley and Persson (2011) find that countries that became members of the UN Security Council witnessed a higher level of domestic political violence during the Cold War, but not in subsequent years. The authors speculate that this may have do to with increased military

23The end of the Cold War would be captured by a generalized decrease in $s$ in all countries, while temporary membership of the UN Security Council would be captured by a temporary increase in the $s$ for the country concerned.
aid received by the governments of strategically important countries during the Cold War. This is consistent with the final scenario described by Proposition 2, in which $F$’s support to repress $c$ is larger when $s$ is large.

3 US influence over Latin America

In early 20th century, the Latin American political systems were as far from being well-functioning democracies as they had been throughout the 19th century.24 Power was normally in the hands of a small group of people, which included the traditional landed and merchant elite and, in the most advanced countries (such as Argentina and Chile) a new elite of industrialists and urban professionals. Although representative institutions were in place in almost all countries, these often excluded the vast majority of the population from political participation (for example, through electoral rules that locked rural votes under the control of big landlords), and remained under the close control of the army. The excluded majority remained predominantly rural (although there were significant urban labor forces, particularly in the most advanced countries), engaged in subsistence farming or landless, and subject to all sort of restrictions that kept their manpower under control of the elite.

By the 1940s, however, the elite seemed to be loosing ground to the excluded majority. Social pressure had increased steadily since the 1890s, when the organization of labor had led to the beginning of an era of strikes and demonstrations. From the 1920s onwards, a large number of opposition parties were formed (see Angell, 1994), most of which were determined to conquer power by means of free and fair election. While these parties were ideologically heterogeneous, they shared the goal of implementing some domestic redistributive reforms, and, particularly in countries were foreign investment was large, to adopt a more nationalistic stance towards foreign investors. In the aftermath of WWII, radical opposition parties managed to win elections in a number of Latin American countries.25 In the decade or so that followed, the pressure for

24 The Latin American countries obtained their independence from Spain and Portugal in 1810-1827. After several decades of civil wars, the Creole groups (descendants of European settlers) that had controlled the colonial economies and had fought for independence managed to stabilize the situation, and to entrench themselves in power.

25 For example, this happened in Guatemala, 1945; Venezuela, 1944; Costa Rica, 1948; Bolivia, 1952.
political change lead to a series of electoral reforms that drastically increased voter turnout (see Hartlyn, 1994, pp. 130-131). This seemed to suggest that an era of democracy and social change had come to Latin America.

These expectations went largely unfulfilled, however. Already in the 1950s, several of the opposition’s early successes were reversed by military interventions which restored the status quo (e.g. Venezuela, 1948; Guatemala, 1954). This process accelerated sharply in the 1960s and particularly in the 1970s, when an endless series of military coups systematically overthrew many elected governments that represented a serious threat of social change. The reversion of the pattern of democratization is particularly evident in the average Polity IV democracy score for South America (Figure 1). It was only from the late 1970s that political systems began to be opened up again, leading to substantial democratization by the mid 1990s.

![Figure 1: CIA interventions and democracy in Latin America, 1945-1989](chart)


This pattern of political change and democratization in Latin America cannot be well understood without considering the external role of the US government. Since the early 20th century, this intervened in a large number of Latin American countries to affect domestic political evolutions to its favor. Interventions ranged from direct military action (mostly in Central America, and in the early decades of the century), to the strategic allocation of economic and military
aid, and, after WWII, to covert CIA interventions (Easterly et al., 2010). The goal of these interventions was to support the political forces that were perceived to suit American interests best.

But what were these interests, and how did US interventions affect political evolutions in Latin America? In a first phase - lasting until the late 1950s - the rationale for US interventions was primarily to defend the position of US investments. US investments became an important share of foreign investments in Latin America in the late 19th century, and rapidly displaced European investments in 1914-1929. Following to a second period of rapid growth in the 1950s, the stock of US Latin American FDIs reached US$ 8.8bn by 1960, or almost 40% of all US FDIs outside North America.\footnote{This share is much lower today (around 20%). Source: Historical Statistics of the United States, Millennial Edition online.}

Elite-controlled governments were originally responsible for granting very favorable terms to American investors, particularly in the growing natural resource sector. Consistently with this initial position, the traditional forces in Latin American politics remained sympathetic to American investors throughout the period, although some of them came to favor mild forms of nationalization in the 1960s and 1970s. On the contrary, many centrist and leftist parties campaigned on nationalistic platforms, and did actually implement more aggressive nationalization policies in several situations when they got to power. Because of these different attitudes, US interventions were mostly oriented towards supporting the incumbent elite. In a number of occasions (the most famous of which was perhaps the 1954 coup in Guatemala), this led the US to actively participate in the overthrowing of democratically elected governments.

This pattern of US interventions can be usefully seen through the lenses of Proposition 1 and 2. The large expansion of US Latin American investments in the 1910s and 1920s was associated with a strong diplomatic activity of the US government, who sought to use economic and military pressure to help its investors prevail over Europeans competitors.\footnote{Ever since the Monroe Doctrine of 1823, the US had pledged to protect the Latin American countries from the perspective of a new European colonization. In early 20th century, the Roosevelt corollary to the Monroe Doctrine established the US’s right to intervene in those Central American countries where domestic political evolutions put US investments at risk. In 1901-1929, various US presidents actively helped the expansion of US investors, using a mixture of economic and military power. For its focus on economic expansion, this period of US foreign policy came to be known as “Dollar Diplomacy”.} For most of the 20th century, economic pressure was a powerful tool in the hands of the US government, as...
many Latin American countries were dependent on the US market for their trade and external credit. In many Latin American countries, US economic pressure went down particularly well with the ruling elite, who controlled much of the export assets or monopolized the sectors of the economy that most relied on US trade and credit. According to Proposition 1 and 2, this specific economic position of the elite can help explain the rapid expansion of US investments in the first half of the century, as well as the US’s preference for the status quo and the rapid rise of economic nationalism. Intuitively, strong external ties made the elite a weaker, and thus preferred, negotiating partner for the US government (Proposition 1 and Proposition 2, part 1); these same ties also put the elite in the position of unilaterally conceding rents to American investors, and thus tying the US government to the defense of the status quo (Proposition 2, part 2). In this interpretation, economic power and the existence of suitable local allies may explain why what is often called the “imperialistic” period of US foreign policy (1900-1930), did not result in direct political take-over.

US interventions were also partly responsible for the reversal of the democratization process in the 1960s and 1970s. In this second phase, US interventions were largely motivated by Cold War calculations. In its early years, the Cold War had touched Latin America only marginally. With the advent of Khrushchev to power (1958), however, a distinctively new phase started, one in which “Eurasia was still the central stake but no longer the central front”, as the Soviet leadership had decided that “Containment was to be defeated by encirclement”, (Brzezinski, 1992, p. 38).

28 By WWI, many Latin American economies were dependent on the US market for their export of tropical agricultural and mineral commodities. Furthermore, the US was a key source of borrowing for many Latin American governments. Although the Great Depression made the US less interventionist (at the same time as it severed the trade and financial links between the US and Latin America), a pro-active diplomatic activity re-started in the 1950s, as most Latin American countries emerged from World War II as dependent on the US economy as ever. For example, the average share of the US in total exports and imports in 1950-1954 was 61% and 76% in Cuba, 66% and 45% in Ecuador, 26% and 56% in Venezuela, and 50% and 55% in Chile (Mitchell, 1998). Early industrializers such as Chile often relied on US trade credit to finance their imports of intermediate and capital goods.

29 The US did establish military control over a few Central American countries; such control was soon surrendered, however, in favor of formally independent, if carefully selected, local governments.

30 This was because the key front was Europe, and the death of Stalin (1953) put the USSR on the defensive for a few years (Brzezinski, 1992).

31 In this year, the invasion of Afghanistan and political problems at home and in Eastern Europe began to move the Soviet attention away from the encirclement strategy (Brzezinski, 1992, p. 38).
To “encircle” the West, the USSR offered economic and diplomatic assistance to Latin American governments who decided to reject American influence and aligning themselves with the Eastern block. Just how dangerous this could be for US geopolitical interests became soon clear, as revolutionary Cuba’s Soviet alliance (1961) lead to Soviet nuclear missiles being installed at a short distance from US territory (see below for more details).

Throughout Latin America, the fear of a second Castro tilted US preferences even more in favor of the status quo. This is because it was perceived that opposition parties would not only pose a treat to American investments, but also to US national security. On the contrary, traditional parties were seen as a stronghold against Communism. This stronger preference for the status quo mapped into an increase in the frequency and scale of US interventions.\footnote{Latin America’s increased geopolitical importance also mapped into a sharp increase in US aid in the 1960s (Kennedy’s “Alliance for Progress”; see Taffet, 2007, for a recent review). This is consistent with the model’s result that an increase in $s$ leads to a lower $r$.} This pattern is illustrated in Figure 1. The figure plots Easterly \textit{et Al.’s} (2010) broad measure of covert CIA interventions. This is the number of American countries where, in a given year, the CIA either installed or supported a government leader.\footnote{A similar sharp increase in CIA interventions is evident if we use Easterly \textit{et Al.} (2010) narrow measure of covert CIA interventions; see Easterly \textit{et Al.’s} (2010) for more details.} The figure shows that covert US interventions were drastically scaled up during the central phase of the Cold War, coinciding with a large decline in the quality of democracy in Latin America (particularly South).\footnote{While this result is consistent with Easterly \textit{et Al.} (2008)’s general result that Cold War CIA interventions were detrimental to democracy, it is also suggestive of the role of the Cold War in affecting the decision to intervene.} Because opposition parties were naturally positioned to gain power through free and fair election, the US preference for the status quo resulted in a strong anti-democratic stance of the US in this period.

Although the US aversion for a few left-wing parties may well be explained with specific geopolitical preferences of these parties for the USSR, geopolitical preferences are not an easy explanation for the systematic aversion that the US displayed towards regime change in Latin America. This is for three main reasons. First, while influential, communist parties did not enjoy large popular support in Latin America (see Angell, 1994). Second, alignment in the Cold War did not carry direct material benefits to Latin American countries (as would have, for example, a conflict between countries over land). Finally, the US was by far the most important trade
partner of all Latin America, and a key source of foreign credit and aid. If anything, it could then be expected that any Latin American government - independently on who controlled it - would have naturally aligned itself with the US.

Proposition 2 provides an alternative, economic interpretation of the impact of the Cold War on US preferences. During long decades of elite rule, complacent governments throughout Latin America had made a large number of concessions to US companies. Although these concessions were in part a reflection of US economic power over the region, they reflected a structure of local governments in which the ruling groups were disproportionally subject to US influence. It could then be expected that regime change would be associated with a downward revision of concessions to American companies. In any single country, however, the nationalistic claims of opposition parties were matched by the need for the US to preserve a reputation of intransigence towards expropriation of its investment.  

Taken together, these two elements implied that economic cooperation between the US government and a nationalistic opposition was likely to be difficult, if not impossible. But this contributed to making regime change a security hazard, since it would reduce the economic leverage of the US while increasing the value of Soviet economic assistance.

In the next three sections, I further substantiate my interpretation by looking at the specific experience of three Latin American countries.

3.1 Cuba

Cuba obtained its independence after a bloody revolution against Spain (1895-1898), a war between Spain and the US (1898), and a temporary American occupation of the island (1899-1902). In 1902-1933, power was administered by a series of conservative and liberal governments that, partly thanks to electoral frauds and violence, stayed in power mostly to their own self-
interest (Thomas, 1971, Ch. 41-50). These governments were all very close to the Cuban business elite, who thrived in an economy dominated by the export of sugar and tobacco, and by the inflow of American investments. When the last of these governments was deposed by a revolution in 1933, the sign that the working and radical middle classes were having enough of the current situation was clearly laid for interested listeners (see Thomas, 1971, Ch. 51). However an old-style Cuban ruler, Fulgencio Batista, was able to seize power, and a 25-year period of relative stability returned to the island. Unsurprisingly, however, a new revolutionary wave came up in the late 1950s, leading to the take over by Fidel Castro in 1959 and to the end of “Old Cuba”.

The governments of Old Cuba were very generous business partners for US exporters and investors. While this benevolent attitude was partly the result of direct business links between influential Cubans and American companies,\(^{37}\) US foreign economic policy had also a substantial role in facilitating this expansion. The US was by far Cuba’s most important trade partner, absorbing around 75% of Cuban exports in 1910-1950 (Mitchell, 1998). In particular, most Cuban sugar was sold in the US, a highly protected market where Cuba enjoyed a preferential tariff (later complemented with a quota). The preferential tariff was the key subject of two important trade treaties in 1902 and 1934, where the Cuban government granted generous preferential tariffs and levels of domestic taxation on American products of all sorts. These treaties gave American products a key competitive hedge over German and Japanese competitors in the 1920s and 1930s, neutralizing these countries’ apparent capacity to sell at lower prices (Smith, 1960, p. 44 and 159).\(^{38}\) The tariff was also used as a way to secure a favorable treatment to American investors in the island, as witnessed by the rapid expansion of American investments in 1902-1959\(^{39}\) and by the fact that, whenever the tariff came under attack by US sugar producers, American investors

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\(^{37}\)For example, Santamarina (2000) provides an interesting account of how the Cuba Company, a consortium of American investors that intended to develop the Cuban economy after 1898, initially constructed its empire. This was done by allocating stakes in the company’s local operations to a network of influential Cubans, who helped the company obtain a highly preferential treatment from the Cuban government.

\(^{38}\)So favorable was the 1934 treaty that it was defined “a step in the direction of a sound Colonial Policy” by contemporary observers (Smith, 1960, p. 161).

\(^{39}\)US investments in Cuba increased from US$ 0.2 bn in 1913 to 1.5 bn in 1929 (Smith, 1960, p. 29), and to 2 bn in the 1959 (Sigmund, 1980, p. 43). American investors came to control, among other things, a third of the island’s sugar economy, all of the country’s utilities, a major railroad system, the import, refining and distribution of oil and the country’s nickel reserves, most hotels and gambling, and various banks. In several instances, the US government intervened directly with the Cuban government to obtain that foreign capital should not be admitted in the island. See Thomas (1971, p. 510) for an example of such an intervention against the English.
in Cuba stepped in to defend it as a way to defend their properties in the island (see for example Smith, ch. 3, 4 and 10).

In sharp contrast with this benevolent government attitude, the forces that challenged the status quo in Cuba from the 1920s onwards were mostly - if to a varying degree - nationalist and anti-American. These forces were a series of parties founded in the 1920s to represent the Cuban workers, students and other middle-class professional groups in the struggle against the Machado government (1926-1933) and against foreign imperialism. While there was among these forces a Communist Party with specific ideological adversity for the US (and with direct, although not always strong, ties with Moscow), this group remained small and decreasingly influential in the run-up to the 1959 revolution. The root of nationalism and anti-Americanism in Cuba were mostly political and economical, for it was realized how involved the US was in defending the status quo in return for profitable deals in the Cuban economy (Thomas, 1971, pp. 685-688). Not surprisingly, American companies running essential local services (such as the utilities) were seen with great hostility by a majority of the population (Bonsal, 1967, p. 265).

Faced with the threats of a change in regime, the US remained a constantly present political force in Cuban politics, even after its official departure in 1902. When electoral frauds were denounced in 1905 and the country seemed on the brink of revolution, US marines landed in the island, re-installing American rule for the next three years. After Cuban rule was restored, the US intervened in favor of the sitting government in 1912, 1917, 1919, as well as in various other occasions during the 1920s. The US also played a key role in the revolution of 1933, where its reluctance to recognize the government initially emerged from the revolution was sufficient to cause its downfall and the ascent of Batista (Thomas, 1971, p. 627). Finally, it provided almost continued support to Batista in what Smith (1960) calls “The Twenty-Five Years Honey Moon” between the US and Cuba (1934-1959). In all of these situations, US interventions were primarily aimed at avoiding the type of regime change that would have led to an attack on American privileges in the island. Although it was not always easy for the US administration to

\footnote{Thomas emphasis (pp. 627 and 688) the role that this particular US intervention had in fostering anti-Americanism in later years.}

\footnote{For example, talking about its attempts to avoid a revolution in 1906, the US Secretary for War declared that “... the great trouble is that, unless we can secure peace, $M200 of US property will go up in smoke” (Thomas, 1971, p. 477). Such a strong US involvement in defending private investments is perhaps not surprising, given}
support violent and corrupt autocrats like Machado and Batista, officials in the State Department realized that someone like Batista “...saw it was hopeless for Cuba, whose life depended on a restored sugar market with the US, to risk our disapproval.” (Thomas, 1971, p. 688). Arguably, the nationalists that the US government feared could take over in Cuba were less amenable to this sort or arguments.

The model developed in section 2 suggests that when $F$’s trade policy can be used to extract large economic concessions from $H$, a ruling group with a relatively strong stake in trade will be both very supported by the foreign country and very suboptimal a ruler for $H$. This may well describe the case of Old Cuba, a country that was dependent on US trade policy and that was ruled by groups whose income was disproportionally dependent on economic ties with the US. In this interpretation, the rapid expansion of US trade and investments in Old Cuba can be partly explained as a result of the country’s economic position and political structure, as can the pattern of domestic nationalism and US interventions. Clearly, domestic models of regime change would have a hard time in explaining political evolutions in such a country: on one hand, they would not consider the role of Cuba’s main trade partner as an external protector of the status quo. On the other, they would not see the role of nationalism to inspire the domestic political struggle, or the “stronger-government effect” highlighted by my model. But the historical evidence seems to suggest that these two effects did matter a lot.

The model also suggests that, when negotiations are history dependent - perhaps because $F$ cannot accept the reputation damage resulting from a downward re-negotiation of its existing rents - regime change may be associated with inefficient renegotiation, leading to a breakdown in bilateral economic cooperation. This increases the cost of regime change to $F$, particularly when there is a second policy dimension (geopolitics) in which $H$’s alignment matters greatly to $F$ but relatively little to $H$. This prediction fits very well the evolution of US-Cuban relations after the regime change of January 1st, 1959. By this time, the central front of the Cold War had already began to shift from Eurasia to peripheral regions such as Latin America, as the new Khrushchev leadership sought ways to encircle the West in its strongholds (Brzezinski, 1992, pp. that personal business connections with Cuba were widespread within successive US administrations (see, for example, Thomas, 1971, p. 686).
38-40). In such a situation, geopolitical allies like Cuba had an enhanced strategic value for the US. And the strong economic ties between the two countries (particularly relative to Cuba’s weak historical ties with the USSR) may have made it reasonable to expect a continued geopolitical alliance under the new Cuban regime, particularly since Castro was neither a Communist nor otherwise strongly ideological.\textsuperscript{42}

Soon, however, it appeared clear that expropriation of US investments would be the issue on which bilateral relations would fall apart.\textsuperscript{43} On one hand, Castro’s determination to free Cuba from American influence cemented his support by the 15-20% of unemployed, underemployed, subsistence farmers, intellectuals and students from which he drew his strength (Bonsal, 1967, p. 266). On the other hand, US policy makers were compelled by the need to demonstrate firmness against expropriation of US investments in a country that had often been seen as a showcase for US-Latin America relations.\textsuperscript{44} Months of escalating tension led to successive crisis in 1960, following which all American investments were expropriated, and the US imposed a full embargo on trade with Cuba.\textsuperscript{45} Faced with the closure of the US market, Cuba asked and obtained the commercial support of the Soviet Union. In return for economic assistance, Castro authorized the installation of Soviet missiles bases in the island (1962). Although the missiles were eventually withdrawn (1963), this was in return for implicit US acceptance of a Soviet stronghold in the region (Bonsal, 1967, p. 3), a clear and painful exception to the Monroe Doctrine.

The case of Cuba illustrated to US policy makers the full extent of the risks associated with regime change in Latin America. Throughout the hot decades of the Cold War (the 1960s and 1970s), the fear of a new Castro would deeply influence the way in which the US government chose to intervene in this region. I now consider the case of two countries where this choice went in two very different directions.

\textsuperscript{42}See, for example, the description of Castro made by Philip Bonsal, the last US ambassador to the island (Bonsal, 1967). After meeting Castro in 1959, the CIA’s chief expert on communism in Latin America declared: “Castro is not only not a communist, is a strong anti-Communist fighter” (Thomas, 1971, p. 1211).

\textsuperscript{43}Commenting on the outcome of the first round of expropriation, Castro itself later declared: “the American reaction to the agrarian reform of May 1959 made me realize that there was no chance of reaching an accommodation with the United States.” (Bonsal, 1967, p. 268).

\textsuperscript{44}The argument that the US attitude towards Cuba would shape reactions in the rest of Latin America was, for example, important at the time of tariff negotiations of the early 1930s (Smith, 1960, p. 68). In determining the suspension of the sugar quota in 1960, the US government went against the advice on the American ambassador in the island, who had warned about the possible geopolitical consequences of such a move.

\textsuperscript{45}The sugar quota was suspended in July 1960, while the full embargo was imposed in February 1962.
3.2 Chile

Differently from most other Latin American countries, Chile had a century-long history of constitutional democracy at the onset of the Cold War.\(^{46}\) Nevertheless, power had generally been in the hands of the Conservative and Liberal Parties, which represented the country’s traditional elite.\(^{47}\) Originally a landed elite active in the export of wheat, these had begun to invest in manufacturing already at the beginning of the 20th century (Kirsch, 1977). With the onset of the Great Depression, this process had been stimulated by the contraction of international commodity markets and by the elite’s capacity to secure protective policy by the Chilean government. By the 1950s, Chile had become one of the few Latin American countries where manufacturing was a truly important sector of the economy, and the traditional elite had managed to remain in control of the process.

Despite the elite’s continued grip on power, pressure from the left has steadily increased in the first half of the century. In the 1920s and 1930s, various opposition parties were formed, ranging from the centrist Christian Democrats (1935) to the leftist Socialists (1932) and Communists (1919). These parties would often form electoral and parliamentary coalitions in the following decades, together with smaller opposition parties. While ideologically differentiated, opposition parties were all characterized by the desire to implement some social reforms, and by varying degree of economic nationalism against the American investors that controlled the mineral sector of the economy. Since the late 19th century, the Chilean economy had been dominated by the production and export of minerals (first nitrates, and then copper). After World War I, this had come to be dominated by American investors,\(^ {48}\) whose net investment position had increased to US$ 540.2 million in 1950, or 11% of all US Latin American FDI (and approximately 4.5 % of all US FDI).\(^ {49}\) In 1950, copper export accounted for a vast majority of Chilean foreign exchange earnings. Still, the widespread perception was that American investors and consumers retained a large share of the value of the rent, through a favorable tax treatment and an agreed export

\(^{46}\)With the exception of a turbulent period in 1924-1934, regular election had been held since the 1870s.

\(^{47}\)A third, middle-class party (the Radical Party) formed two governments in the 1940s, without however managing to reduce the elite’s grip on power (Pike, 1963).

\(^{48}\)Americans in the copper industry inherited the role that British investors in Chilean nitrates had played for the fifty years before WWI.

\(^{49}\)See UN (1955) p. 159; and United States Historical Statistics, Millennial Edition On Line (Series Ee72-131).
price that was often lower than international market prices.\textsuperscript{50}

In the early 1950s, a series of electoral reforms succeeded in “unlocking” a large number of rural votes that had until then been under the control of the landed elite. This increased voter’s turnout substantially (see Harlyn, 1994, p. 130-131) leading to the first, serious electoral threat to the established order: in 1958, Salvador Allende, leader of a coalition of leftist parties, got very close to defeating the conservative candidate in the presidential election. As the leftist threat presented itself again in 1964, the candidate of the centrist Christian Democratic party (Eduardo Frei) succeeded in subtracting the presidency from the conservatives for the first time. Having run on a platform of moderate domestic reforms and nationalization (with compensation) of the copper mines, the Christian Democrats did manage to redistribute some land and to establish Chilean majority ownership over the copper industry. They fell, however, short of conquering the “votes, hearts and minds of the poor” (Taffet, 2007), particularly as their tenure was complicated by a series of balance of payments crisis that required harsh stabilization measures. In 1970, Allende was swept in power with a minority of votes, and began to govern with the external support of fringes of the middle-class Radical Party and the Christian Democrats themselves.

In keeping with his electoral promises, Allende implemented radical redistributive reforms and nationalized the American copper companies with very little compensation. In doing so, he catered to the extreme nationalism of its direct leftist supporters. However he also enjoyed the support of nationalists from centrist parties: in fact, Chilean nationalism was on the rise in those years, partly due to dissatisfaction with Frei’s mild nationalization program (Sigmund, 1980, pp. 145-147). As the US government reacted to nationalization by interrupting the supply of credit and the US companies attempted to block the marketing channels for Chilean copper (see Sigmund, 1980, Ch. 5), the economic situation deteriorated. Taking advantage of economic distress, the military staged a bloody coup on September 1973, overthrowing Allende and inau-

\textsuperscript{50}When copper concessions were initially granted to the American companies in the 1910s and 1920s, taxation was so low that it represented the least important link between the industry and the rest of the country (Fortin, 1979, p. 185). Various attempts to reform the mining industry in 1940-1970 did manage to increase the Chilean share of the rent, without however satisfying the nationalists. In the 1960s, the Chilean population was, together with that of Ecuador and Peru (other major recipient of US mining FDI), among the most nationalist in Latin America (Taffet, 2007). Cockcroft argues that between 1910 and 1960, US copper investments in Chile generated an estimated US$ 4 billion in remitted profits, out of an overall investments of about US$ 1 billion (Cockcroft, 1996, p. 537).
gurating a 15-year period of military dictatorship. It was only at the end of the 1980s, and in a country whose economy had been deeply modified by years of economic liberalizations, that democracy was restored.

Throughout these political evolutions, the US government was active to prevent the ascent or consolidation in power of the Chilean left. Traditionally, the US had stood on the side of Chilean conservatives (e.g. Pike, 1963). As Latin America became a front of the Cold War in the early 1960s, US aid to the Chilean government massively increased.\footnote{Kennedy’s Alliance for Progress increased total US aid to Chile from $ 9.2 million in 1951-1960 to US$ 41.4 million in 1961-1962 only (Taffet, 2007).} Initially entrusted with the ruling Conservative Party, this aid was later diverted to supporting the election of Frei, who was seen as a more viable alternative to Allende (Taffet, 2007, p. 76-77). Support to the Christian Democrats was also provided through a series of covert CIA interventions in the mid 1960s (Easterly \textit{et al.}, 2010, p. 5). As Frei appeared unable to prevent the ascent of the left, however, the US government shifted emphasis from aid to strengthening relations with the military.\footnote{This was also the reaction of a changed political mood in Washington in the late 1960s.} This led to a decisive involvement of the CIA in the 1973 coup.\footnote{See Church Report of the US Senate, Dec. 18 1975.}

The pattern of US interventions in Chile can, at least in part, be rationalized using the model developed above. Particularly since WWII, the US government has a strong interest in Chilean copper. On one hand, it closely cared about the value of American copper investments.\footnote{For example, Dube \textit{et Al.} (2011) find indirect evidence that top US investors in Chile were involved in the preparation of US military support to the 1973 coup.} On the other, it wanted the price of Chilean copper to be kept low, particularly when conflicts such as the Korean or Vietnam war threatened to increase the price of this metal. In the early 1950s, around 55\% of Chilean exports went to the US, which was the source of 50\% of Chilean imports (UN, 1955, p. 159). Because of its strong market position as Chile’s key buyer, the US was often able to dictate terms to the Chilean government. For example, it used sanctions on Chilean copper sales and the threat of an interruption in trade credits to obtain price rollbacks in at least two occasions (1952 and 1965).\footnote{In June 1950 the US government and companies unilaterally decided to set the price of Chilean copper at US$ 0.245 per pound, a price well below the London free market price. Strong public reaction in Chile induced the Chilean government to first negotiate with the US government an increase in the price to US$ 0.3 per pound (1951) and then set up an independent marketing agency that purchased copper from the American companies.}
The threat of US sanctions was effective at disciplining the Chilean government mostly because it hit at Chile’s chronic balance of payments problems. Being dependent on copper and US trade credit for its foreign exchange earnings, the Chilean economy deeply relied on smooth relations with its main trade partner. This was particularly true given that Chile’s manufacturing sector, by then the leading sector in the economy depended on the imports of capital and intermediate goods for its functioning. However the Chilean elite was likely to be particularly vulnerable to a break up of this link. Industrialization in Chile had remained under the control of the traditional elite (Kirsch, 1977, p. 106). These had used their influence with the Chilean government to obtain protection from the external competition, and to establish monopolistic or oligopolistic positions in the domestic market (Ibid., Ch. 6). These positions were quite strong in the 1950s and 1960s (Ibid, p. 107). To the extent that disruption in the national economy was particularly harmful for the owners of these rents, it is perhaps not surprising that the Conservative and Liberal parties were the only two Chilean political forces not to be nationalist towards foreign investors (Pike, 1963, p. 267). As suggested by Proposition 1, there were then two opposite forces through which the US mattered for Chilean politics. First, US external support tended to be given to the traditional forces in Chilean society, thus making regime change more difficult. Second, a nationalist sentiment made regime change more pressing, as it was estimated that this would have improved the country’s negotiating power vis-à-vis the US.

The model can also help interpret the intensification of US anti-leftist pressure in the 1960s and 1970s, and its final intervention to revert regime change in 1973. While the Chilean left could well be seen as a threat for its relatively strong communist ideology, economic factors may explain why the two parties were not able to overcome ideological differences in the name of continued economic cooperation.56 On one hand, the US economic position in Chile was incompatible with

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56I do not intend to deny that the communist ideology of Allende and his closest supporters played an important role in the deterioration of US-Chilean relationship. Instead, I start from the premise that ideological relations may be partially shaped by economic relations, and investigate why the need for continued bilateral economic
the aspirations of a majority of the Chilean population, let alone the minority leftist coalition who took power in 1970. This broad anti-American feeling was crucial for Allende to be able to pass its expropriation bills in 1971 (see Sigmund, 1980).

57 Cooperation between Chile and the USSR became increasingly important in 1970-1973, with the USSR providing economic and technical assistance and Chile adopting a friendly foreign policy stance (see Sigmund, 1980; Evanson, 1985). The fact that Soviet assistance did not match in scale that provided to Cuba has been explained with the Soviet skepticism that Allende would be strong enough to remain in power (Evanson, 1985).

58 As suggested by Proposition 2, these economic factors provided an independent reason why Cold War considerations lead to a scaling up of US external involvement (possibly, being decisive for Allende’s downfall), on top of considerations of ideological nature.

3.3 Venezuela

Venezuela was one of few Latin American countries where relatively sound democratic institutions, established in 1959, remained in place - with active US support - throughout the 1960s and 1970s. The country’s historical experience with democracy was mixed, however, and so was the pattern of US external support for it. In the early decades of the century, the dictator Vicente Gomez was able to retain power for an astonishing 27-years period (1908-1935). Although Gomez’s resilience was largely due to his capacity to cement support from key groups in society, the display of US military support for the dictator also played a role.

Key to US support for Gomez was oil. Historically dominated by the export of tropical agricultural commodities (mostly coffee, cacao and cattle), Venezuela began to exploit its vast cooperation did not help to mitigate the ideological differences between these two governments.

59 Together with Colombia and Costa Rica.

60 The US Navy was frequently dispatched to the coast of Venezuela in the 1920s, in reaction to riots or rumors of revolution. This display of external support contributed to making the 1920s a relatively peaceful period, allowing the dictator to remain in power until his death in 1935.
oil reserves in the early 20th century, as oil consumption in industrialized countries first took off. Initially, all oil concessions went to European oil companies. After WWI, however, US companies began to penetrate the Venezuelan oil industry, getting to dominate it by the end of the 1920s. While strong financial capacities of US companies after WWI was an important determinant of such success, the American expansion was also due to a clear preference for American investors by the Gomez government. With the 1922 oil law - a piece of legislation that would shape the industry for the next 50 years (Ewell, 1984, p. 57) - Gomez granted US companies terms that were very low for international standards, and even low relative to competing offers (Rabe, 1982, p. 35). In turn, Gomez’s preference for American oil companies was intimately linked with US diplomacy. Shortly after the end of the war, fears that domestic US supply would dry up prompted the US government into an aggressive diplomatic offensive to help American companies secure concessions abroad (Venn, 1986). In Venezuela, US diplomatic pressure went down well with the Gomez government (Ewell, 1984, p. 58; Rabe, 1982). On the contrary, opposition to the dictator became increasingly nationalistic in the 1920s and 1930s.

The cordial relation between Gomez and the US can be seen in the contest of the Venezuelan economy and political system in early 20th century. A key source of support to Gomez came from a small group of elite families, and from the army (Ewell, 1984, p. 50-53). The former, an influential group for most of the 20th century (Ewell, 1984, p. 51), based their wealth on various activities centered around the thriving commercial sector of the coastal region. The latter was filled by Gomez with officers from his native Tachira, a relatively wealthy Andean region whose economy was based on the production of coffee for exports.\textsuperscript{61} By the second decade of the 20th century, the US was already the largest trade partner of Venezuela, and this pattern would considerably consolidate over the next decades.\textsuperscript{62} Gomez’s generous concessions to US oil investors - and the ensuing nationalistic vein of his opponents - may have been due to economic pressure from the US, or from Gomez’a unilateral attempt to please an important external supporter. For the two cases, Proposition 1 and 2 suggest that this pattern may have

\textsuperscript{61}Gomez himself, together with his family, used his influence to acquire an important stake in the coffee, cacao and cattle business (Ewell, 1984, p. 70).

\textsuperscript{62}See Izard, 1970, pp. 185, 202 and 203. In 1912, the US was recipient of about 36\% of Venezuelan exports, followed by France (25\%) and Germany (14\%).
been grounded in the strong economic ties that the US entertained with Gomez’s supporters.\textsuperscript{63} In 1937, a group of left wingers who had rioted against Gomez in the 1920s founded a party, Accion Democratica (AD), that would become the key player in the establishment and consolidation of the Venezuelan democracy. AD had the goal to organize and represent the peasants and workers, as well as the middle class groups that were being created by the oil-driven development of the economy. Like many other Latin American leftist movements, it stood for social reforms and a nationalistic approach to foreign investors. In 1945, AD had a first opportunity in power, after a revolution staged by junior military officers and a subsequent election won it the presidency. In the three years that followed (known as el trienio), AD extended the franchise to universal suffrage and passed an agrarian reform. It also attacked the privileges of the oil companies, by imposing an innovative 50-50 sharing rule for profits\textsuperscript{64}, discontinuing the system of concessions, and taxing the companies in kind. These radical reforms however alienated AD the support of the military, and in 1948 a military coup replaced the AD government with a military dictatorship that would last until 1958.\textsuperscript{65} Shortly after going to power, general Perez Jimenez signed a revision of the 1939 commercial treaty with the US (1952).\textsuperscript{66} The new treaty “gladdened the heart of the commercial sector” (Ewell, 1984, p. 109), and was shortly followed by more concessions to US oil companies: in 1955, Perez Jimenez restored many of the privileges of the oil companies. So happy were American investors that President Eisenhower decorated Perez Jimenez with the Legion of Merit for his “contribution to the free enterprise system”.

In 1958, however, a popular revolution in Caracas overthrew Perez Jimenez and elections were held. Returned from a decade in exile, the leader of AD (Romulo Betancourt, or “the father of the Venezuelan democracy”) won by a large majority. This marked the beginning of a period of constitutional rule that survived undisturbed through the Cold War. With governments in 1959-1964, 1964-1969 and 1974-1979, AD dominated the political life of this period. At the same

\textsuperscript{63}That US trade power mattered for the treatment its oil companies received in Venezuela is consistent with the fact that, as the Great Depression made the US more protectionist in the 1930s, the 1922 oil law came increasingly under attack, leading to its revision in 1939. Significantly, precisely around that time a new trade treaty was signed between the US and Venezuela (Rabe, 1982, pp. 53-58).

\textsuperscript{64}This sharing rule would soon become popular with oil-producing countries, and spread to other parts of the world (most notably to the Middle East).

\textsuperscript{65}Some analysts have claimed that the US government supported the 1948 coup (e.g. Cockcroft, 1996).

\textsuperscript{66}By the late 1930s, oil had come to completely dominate Venezuelan exports. From this moment onwards, trade treaties were mostly about negotiating the US tariff on imported oil.
time, power was surrendered to the centrist Christian Democratic Party in 1969-1974, marking the first democratic transition of power in the country’s history. AD’s rule in this period was characterized by a steady increase in the pressure on the American oil companies, culminating in their full nationalization (with little compensation) in 1974. Still, the AD governments enjoyed strong support from the US government in the 1960s and 1970s.67

Why was the US able to come to terms with a nationalistic opposition in Venezuela, but not in Chile? One possible explanation is that the opposition in Venezuela just happened to be more ideologically close to the US than the opposition in Chile. In fact, although many AD members and Betancourt himself came from Marxist origins, they later adopted a more centrist stance. In the 1960s and 1970s, AD displayed a remarkable capacity to navigate between the right and the left, implementing social reforms but at the same time systematically excluding the communists from power. The AD governments also adopted a strongly pro-US foreign policy stance at all times.

An alternative (or additional) explanation, however, is that economic conditions specific to Venezuela put the Venezuelan government in the condition to renegotiate American oil rents without triggering an automatic retaliation reaction from the US government. In fact, increasing pressure on the US companies in the 1960s was not matched by significant retaliatory measures; and even in the face of full nationalization in 1974, US protests were very mild, and eventually put on a side.68 In terms of the model, renegotiation of US rents was efficient in Venezuela. As suggested by Proposition 1, Cold War motivations do not have a bite in this case, and alignment to the foreign partner is guaranteed by the need for continued economic cooperation.

But why was renegotiation efficient in Venezuela? One possible interpretation is that this was the result of both skillful maneuvering on the side of AD and contemporary international evolutions in the oil industry. In the 1960s, the AD governments adopted a policy of strict gradualism in revising the terms granted to the American oil companies. At the same time,

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67 For example, in the 1960s, Venezuela became the darling of Kennedy’s Alliance for Progress (Taffet, 2007).
68 This was despite the fact that the level of compensation offered was very low (20% of actual investment, or 10% of its replacement value), and had been reject in a number of previous occasions by the US government (Sigmund, 1980, p. 243). Mild US reactions can be explained with the fact that “...given the interest of the companies in continuing to do business with Petroven and of the United States government in a continuing and reliable source of oil, the general perception was that a stronger response was neither desirable nor necessary” (Ibid., p. 244).
however, they worked relentlessly at the creation (1961) and strengthening of OPEC, the organization of petroleum-exporting countries. The organization had the goal to increase the producer countries’ bargaining power vis-à-vis the international oil companies, and the governments of consumer countries. Thus, as OPEC consolidated in the early 1970s, Venezuela could implement its nationalizations at a time in which the US had to face a co-ordinated attack on Western oil investments, and the room for sanctions against oil-expropriating governments had decreased significantly.

Thus, political skills and international co-ordination may help understand AD’s capacity to conciliate the Venezuelan nationalism with US policy on expropriation. On one hand, the gradual revision of terms in the 1960s was accompanied by a strong communication effort by the AD governments, so that any progress made was carefully explained to the Venezuelan public (Ewell, 1982). On the other hand, the consolidation of OPEC may have helped to mitigate the reputational concern of the US government, thus making it more easy for it to accommodate to expropriation.

Very different circumstances applied in the case of Chile, a country that remained relatively isolated in its nationalistic endeavors. In this country, a cooperative approach to nationalizations was bound to fail, as explained in the previous section.

69 Until the 1950s, Western oil companies had remained able to defy expropriation in producer countries by exploiting their control of processing channels, and by their capacity to increase production elsewhere. For example, this was the response to nationalization in Mexico (1938) and Iran (1951-1953). A key achievement of OPEC in the 1960s was to agree that, in case of sanctions against one of its members, the organization would forbid the oil companies from increasing production elsewhere. This paved the way to the nationalizations of the 1970s (Venn, 2002).

70 In Proposition 2, I have just assumed that F is unable to accept a downward revision of r. It is easy to construct a multi-country reputation model (along the lines of Milgrom and Roberts, 1982, or Kreps and Wilson, 1982) where this assumption obtains from the reputational concerns of the government of F. In particular, suppose that F holds rents in n small H_i, and may try to signal itself as “crazy” (a type of F that likes to retaliate against expropriation, and that occurs with probability p) in its reaction to expropriation in H_j. The main insight from this model is that, no matter how small is p, there always exist a pooling equilibrium in which both the normal and the crazy type retaliate to expropriation in H_j (if n is large enough). However if it is extraordinarily costly to retaliate against country j, there then also exists a pooling equilibrium in which neither type retaliates. There are then two ways in which the creation of OPEC may have affected the reputational concerns of the US in Venezuela. First, by helping to bring about simultaneous nationalization in many oil-producing countries, OPEC reduced n (and thus the value of reputation); second, by increasing the cost of sanctions against its members, OPEC created an equilibrium in which the US could afford not to retaliate in Venezuela, without damaging too much its reputation.

71 Differently from oil, copper-producing countries had not created an international organization that could soften the impact of sanctions against some of its members. Thus, a drop in import from Chile could be substituted with imports from a variety of sources, both in developing countries (Peru, Zaire, Zambia) and in developed countries (Canada, Australia, the US itself). More in general, copper was not as important a commodity as oil, and was not so much the focus of public attention in the early 1970s.
4 Conclusions

I have constructed an economic theory of foreign interventions and regime change. This theory considers a world where one foreign country has economic power vis-à-vis the domestic country, but this power applies differently to different groups in society depending on their involvement in the international economy. In this environment, the rationale for foreign interventions is to facilitate the rule of groups that are more dependent on foreign economic policy, since these groups can be expected to concede more to foreign investors. However the effect of foreign interventions is counterbalanced - in a very general political model - by the structure of incentives towards regime change: these favor the groups that, being less dependent on foreign economic policy, are better positioned to maximize national income. These results may help understand the pattern of Western interventions in some developing countries in the 20th century, as well as the role played by economic nationalism in fomenting the struggle for regime change in these countries.

I have also allowed for a multi-dimensional foreign policy, and studied how regime change plays out with the capacity of the foreign country to use its economic power to influence the home country’s geopolitical alignment. My main result is that if existing concessions to foreign investors can only be downsized at the cost of bilateral economic frictions (for example, because of reputational concerns in the foreign country), each local group’s geopolitical preferences may emerge endogenously as a function of its involvement in the international economy. Thus, a nationalist challenger may also be a less reliable geopolitical ally for the foreign country, since foreign economic power is less effective a tool when this group is in power. I have used this logic to explain the role of the Cold War in strengthening the West’s preference for the status quo in some parts of the world.

What do these result imply for the pattern of Western preference for democracy? On one hand, the model is consistent with the fact that the end of the Cold War strengthened the Western preference for democracy. On the other hand, the model suggests that we should distinguish between (at least) two different types of transitions to democracy. The first is one that happens at the expense of an outward-oriented elite, perhaps used to making unilateral
concessions to foreign investors as a way to entrench itself in power with foreign support. The second is democratization at the expense of an autarchic elite, that prospers from controlling protected segments of the national economy while a majority of the population would benefit from opening up to external exchange. In the model, the two cases would witness a very different foreign attitude towards democracy: negative in the first case, positive in the second. Whether or not this example can be used to explain the different attitude of the West towards democracy in, say, Latin America in the 1960s and Iran and North Korea nowadays, is, I believe, a fascinating subject for future research.

In conclude by commenting on one possible extension. In the model, I have simply assumed that there is one foreign country (F) with a superior capacity/willingness to intervene in the home country (H). However my historical discussion has considered one notable example in which F (the US) happened to be H’s (Latin America’s) main trading partner. More in general, it is often the case that important trade partners are particularly influential in the internal politics of small countries. This link between trade patterns and foreign interventions could be investigated in a richer model where multiple Fs had different trade ties with H, and with specific groups in its society. The amount of external support that each group could expect to receive would then depend on the group’s relative ties with each of H’s trade partners, and by the relative importance of the various bilateral ties for H’s total trade.

Appendices

A Derivation of condition (21)

Define $\Phi$ as an indicator function that equals 1 if $r_1 = r^c$ and zero if $r_1 = 0$. From our discussion, we know that if $\Phi = 1$ it is $\Gamma(e, 1) = \sigma_2(c) = 0$ and $\Gamma(c, 1) = \sigma_2(e) = 1$, while if $\Phi = 0$ it is
\[\Gamma(e) = \Gamma(c) = 0\] and \[\sigma_2(e) = \sigma_2(c) = 1\]. Then, each e’s expected payoff can be written as:

\[\text{EW}^e(\Phi) = \frac{(1 - \tau)\theta}{\delta} + \frac{M - 1}{M} \frac{\tau \theta}{\delta} - \frac{M - 1}{M} r^e - \Phi \frac{M - 1}{M} \bar{r} - (1 - \Phi) \frac{1}{M} r^e + \]

\[- \gamma_s + \Phi \frac{1}{M} \gamma_s - \Phi \frac{1}{M} \frac{(1 - \tau)\theta^* g}{\delta} + \]

\[- \frac{\hat{\mu}(\Phi)}{M} \left( \frac{\tau \theta}{\delta} - r^e - \Phi \bar{r} + (1 - \Phi) r^c - \Phi \gamma_s + \Phi \frac{(1 - \tau)\theta^* g}{\delta} \right) + \]

\[- \frac{1}{\delta^2} \int_0^{\tau \theta - \delta(r^c + \Phi \bar{r}) + \delta(1 - \Phi) r^e - \Phi \delta \gamma_s + \Phi (1 - \tau) \theta^* g} x dx > 0.\]

where \(\hat{\mu}(1) = \mu, \hat{\mu}(0) = 0\). The key condition for the elite to be willing to set \(r_1 = \bar{r}^e\) is:

\[\text{EW}^e(1) - \text{EW}^e(0) = - \frac{M - 1}{M} \bar{r} + \frac{1}{M} r^e + \frac{1}{M} \gamma_s - \frac{1}{M} \frac{(1 - \tau)\theta^* g}{\delta} + \]

\[+ \frac{\mu}{M} \left( \frac{\tau \theta}{\delta} - r^e - \bar{r} - \gamma_s + \frac{(1 - \tau)\theta^* g}{\delta} \right) + \]

\[- \frac{1}{\delta^2} \int_0^{(1 - \tau)\theta^* g - \delta(r^e + \bar{r}) - \delta \gamma_s} [\tau \theta - \delta(r^e - r^c) + x] dx > 0.\]

Solving the integral and re-arranging gives condition (21).

**B  Proof of Lemma 1**

By (8), (9) and (17), it is always \(\bar{r}^F = 0\) in this case, from which it follows that \(\pi^F(R) = 0\). Condition (16) also immediately reveals that \(\pi^{RC}(1) = \frac{1}{M}\).

**C  Proof of Proposition 1**

From our discussion in section (2.2), we know that \(r_2(i) = r^i, \sigma_2(i) = 1\) and \(\Gamma(i, 1) = 0 \forall i\) in this case. Plugging these policy outcomes in (17), we find \(\bar{r}^F = r^e - r^c = \frac{\theta^* - \theta^*}{(1 - \delta)\theta^*}\), from which it follows that \(\pi^F(1) = \left| \frac{\theta^* - \theta^*}{M(1 - \delta)\theta^*} \right|\). Plugging the policy outcomes in (18), we find that \(\pi^{RC}(1) = \frac{1}{M}\).
D Proof of Proposition 2

From our discussion in section (2.2), we know that \( r_2(i) = r^i \), \( \sigma_2(i) = 1 \) and \( \Gamma(i, 1) = 0 \) \( \forall i \) when \( R = 0 \) but \( \theta^* < \theta^* \) or \( \theta^* > \theta^* \) but (21) does not hold. It then follows from the proof of Proposition (1) that the equilibrium is the same as in that proposition. If \( R = 0 \), \( \theta^* > \theta^* \), and (21) holds, our discussions suggests that it is \( r_2(e) = \max(r^e, \bar{r}^e) \), \( r_2(c) = 0 \), \( \sigma_2(e) = 1 \), \( \sigma_2(c) = 0 \), \( \Gamma(e, 0) = 0 \) and \( \Gamma(c, 0) = 1 \). Plugging this into (17), we may write:

\[
\pi^{FI}(0) = \frac{\max(r^e, \bar{r}^e) + s + \beta g}{M} > \frac{r^e - r^c}{M} = \pi^{FI}(1).
\]

Using (8) and (13), it is clear that \( \pi^{FI}(0) \) is increasing in \( g \) and \( s \). As for the equilibrium value of \( \pi^{RC}(0) \), this follows straightforwardly from (20). ■

References


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