

## CHAPTER 30

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# NATIONAL BORDERS, CONFLICT AND PEACE

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### 1. INTRODUCTION

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CONFLICT and defense have historically played a central role in the determination of national borders. Historians and political scientists have extensively studied “how wars made states, and vice versa” (Tilly 1992, 67), emphasizing that “modern states were largely built as military enterprises” (Colomer 2007, 33).<sup>1</sup> Security concerns have influenced philosophical discussions of the ideal size of a political system since classical times, when Plato wrote that “the number of citizens must be sufficient to defend themselves against the injustice of their neighbors” (*The Laws*, Book V).<sup>2</sup> Machiavelli claimed that “the cause of the disunion of republics is usually idleness and peace; the cause of union is fear and war” (*Discourses on Livy*, II, 2), echoing a view often referred to as “Sallust’s theorem” (Evrigenis 2008; Wood 1995) after the Roman historian Gaius Sallustius Crispus, who linked the internal cohesion of the Roman Republic before the destruction of Carthage to fear of the enemy (*metus hostilis*).

In modern times, military threats and opportunities have been singled out as key factors in the formation of political unions and federations (e.g., Riker 1964), such as the United States, Switzerland, and Germany, whose borders, as Otto von Bismarck famously stated in 1862, were to be decided “not by speeches and the decisions of majorities . . . but by iron and blood.”

In recent decades—especially after the end of the Cold War—dramatic breakups of countries and increasing separatism have renewed interest in the formation and redrawing of national borders, not only among historians and political commentators, but also within the field of political economics. A new analytical literature has

been developed, providing formal models where national borders are not taken as given, but are the endogenous outcomes of decisions by agents who interact with each other while pursuing their goals under constraints. Contributions to this literature include Alesina and Spolaore (1997, 2003), Alesina, Spolaore, and Wacziarg. (2000, 2005), Bolton and Roland (1997), Bordignon and Brusco (2001), Ellingsen (1998), Goyal and Staal (2004), LeBreton and Weber (2003), and others; overviews are provided by Bolton, Roland, and Spolaore (1996) and Spolaore (2006).

Several of these contributions have focused on peaceful border redrawing through voting or unilateral secessions in the absence of conflict. A small but growing number of studies, however, has begun to introduce conflict and security considerations explicitly in the theoretical framework, thus linking the economic literature on endogenous national borders to the expanding analytical literature on the economics of conflict and peace, which is the subject of this book. In particular, international conflict and defense are at the center of the analysis of national borders in Alesina and Spolaore (2005, 2006) and Spolaore (2004), and are also modeled by Wittman (2000). A formal analysis of civil conflict and secessions has been developed by Spolaore (2008).<sup>3</sup>

This line of work is related to other areas of research, such as the formal study of conflict by international relations scholars (e.g., Powell 1999) and the economic analysis of military alliances pioneered by Olson and Zeckhauser (1966). However, unlike more traditional studies, which have typically taken the identity of states engaging in conflict as given, a central objective of the new political economy literature on nations is to endogenize (explain) sovereign states themselves, and to study how their number, size, and shape are affected by conflict, defense, and security.

Section 2 overviews some key ideas and questions about the relation between conflict and the size of nations.<sup>4</sup> Section 3 presents a simplified model that illustrates decisions over military spending, economies of scale in security, and incentives to form alliances and political unions. Section 4 discusses various topics on conflict and national borders in light of contributions from the political economics literature. Section 5 comments on directions for further research.

## 2. CONFLICT, DEFENSE, AND THE SIZE OF NATIONS: AN OVERVIEW

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### 2.1 The fundamental trade-off

What determines the number and size of nations? From an economics perspective, a fruitful starting point is the consideration of benefits and costs associated with a

larger national size. A central role for states is the supply of public goods to their citizens: a legal and justice system, security and crime prevention, public health, protection against catastrophic events (such as earthquakes and hurricanes), and so on. Providing public goods comes with economies of scale. Typically public goods, unlike private goods, are nonrival in consumption: each citizen can benefit from them without reducing the benefits for other citizens. Even when the costs of publicly provided goods go up with the size of population (say, because of congestion or increasing administrative costs), some components of these costs are independent of the number of users. In general, publicly provided goods are cheaper per person when more taxpayers pay for them. Empirically, the share of government spending over total income is decreasing in population: states with smaller populations tend to have proportionally larger governments (for a discussion, see Alesina and Spolaore [2003, chap. 10]).

Defense and security have historically been among the most important public goods provided by governments. Because of economies of scale, in principle larger countries can provide cheaper and more effective security to their citizens. Empirically, the relationship between defense spending and country size is complex for various reasons, including the existence of international alliances and the fact that some larger countries may provide defense for smaller countries, as the United States within the North Atlantic Treaty Organization (NATO). At the same time, larger, more powerful states may obtain additional economic and political benefits from their leading position.<sup>5</sup>

In summary, the provision of public goods, including defense and security, is associated with actual or potential benefits of scale.

A larger size, however, comes with costs as well as benefits. Some of these costs may be due to coordination and congestion problems that arise when states become larger. More importantly, an expansion of national borders may raise political costs, stemming from higher heterogeneity in larger communities. An expansion of national borders is likely to bring about more heterogeneity of preferences for public policies and types of governments across different groups of citizens. As borders include more heterogeneous populations—with different cultures, values, norms, habits, languages, religions, ethnicities—disagreements over the fundamental characteristics of the state are more likely to emerge and harder to reconcile. Being part of the same country implies sharing jointly supplied public goods and policies in ways that cannot always satisfy everybody's preferences. At the same time, diversity may also generate direct economic benefits through learning, specialization, and exchange of ideas. Successful societies manage to minimize the political costs of heterogeneity while maximizing the benefits from a diverse pool of preferences, skills, and endowments. Nonetheless, all other things being equal, heterogeneity and political costs tend to increase as states become larger and expand their borders.

On balance, there is a trade-off between economies of scale and heterogeneity of preferences over public policies. Such trade-offs have played a central role in the economic literature on the size of nations (e.g., in Alesina and Spolaore 1997, 2003; LeBreton and Weber 2003; Wittman 2000). When economies of scale become

more prominent compared to heterogeneity costs, larger political systems are more likely to emerge. In contrast, a decrease in the benefits from size or an increase in heterogeneity costs will bring about political disintegration.

This trade-off has immediate implications for the relation between conflict and national borders. In a more bellicose world, when external threats loom large and security concerns are paramount, larger and more centralized political unions have an advantage in terms of defense provision. Conversely, a reduction in international conflict, all other things being equal, will lower the incentives to form larger political unions (Alesina and Spolaore 2005, 2006; Spolaore 2004).

## 2.2 Questions

The trade-off between economies of scale in defense and heterogeneity costs provides a useful framework for studying the relationship between international conflict and the size of nations. However, it is only the first step toward a theoretical and empirical exploration of this topic. The costs and benefits of defense and military power are difficult to model and elusive to measure. They depend on strategic interactions among political actors within and across countries, and entail complex relations with political, economic, and institutional variables. While several insights have been gained on these issues, the analytical study of conflict, defense, and national borders is only in its infancy, and key questions have only recently begun to be addressed with the tools of modern economic analysis. Here is a selective summary of these questions.

- (a) *Military power, economies of scale in defense, alliances, and political unions.* Defense and military power are not standard public goods. Their costs and benefits depend not only on their provision within a given sovereign state, but also on other states' supplies, and, more generally, on strategic interactions within and across national borders. For example, small states can enter into various forms of decentralized military alliances, or merge into a centralized political union. How do economies of scale in defense and security differ across different institutional arrangements? How does the possibility of forming decentralized alliances affect the incentives for political unification?
- (b) *Endogenous political disintegration and international conflict.* While conflict and defense affect the number and size of nations, changes in national borders conversely influence the patterns of conflict and defense. In the long run, conflict, defense, and national borders are all jointly determined endogenous variables, and they must be studied within a general equilibrium framework. For example, what happens to defense spending and observed conflict following the breakup of larger political units, which perhaps occurred in direct response to changes in the perceived importance of conflict and security?

- (c) *Conflict, democracy, and openness: implications for the number and size of nations.* The costs and benefits of defense and military power may depend on democratic constraints and international openness, as suggested by the extensive literature on the “democratic peace” or “liberal peace,” which can be traced back to Montesquieu (1748/1989) and Kant (1795/2006) (e.g., see Oneal and Russett 1999). At the same time, the literature on the formation and breakup of nations has stressed the role of variables such as democratization and economic globalization, in addition to conflict and security. Nonetheless, the links among conflict, democracy, openness, and the size of nations remain relatively unexplored. Do democratization, globalization, and lower international conflict go hand in hand with the creation of smaller states? Is the formation of larger political unions associated with dictatorial rulers, barriers to trade, and a more bellicose world? Can there be multiple equilibria in these variables? How do societies transition from one equilibrium to the other over time?
- (d) *Civil conflict and secessions.* While political integration can bring about better protection against external threats, it also tends to raise heterogeneity costs within each country. An important question is whether such an increase in heterogeneity is associated with a larger likelihood of civil conflict over domestic policies, or even disagreement over borders themselves (e.g., separatist wars). A related question is whether a reduction in international conflict may increase domestic conflict within each state. While there is an extensive literature on civil and ethnic conflict in political science and political economy, much work still needs to be done to understand the links among civil conflict, external threats, separatism, and the endogenous formation of nations.

These questions will motivate the following sections. Some of the issues under (a) will be illustrated within a simple model in section 3, while the questions under (b), (c), and (d) will be discussed with reference to the literature in section 4.

### 3. CONFLICT, ALLIANCES, AND POLITICAL UNIONS

We now present a simple analytical framework to organize ideas and illustrate the basic logic of military spending decisions, economies of scale in security, and incentives to form alliances and political unions.

#### 3.1 The basic setting

Consider a world with three homogeneous populations ( $A$ ,  $B$ , and  $C$ ) of equal size, normalized to one. Each population is located at a vertex of an equilateral triangle

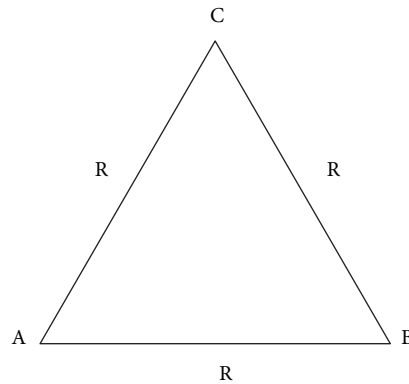


Figure 30.1 A world composed of three populations

of length  $R$  (Figure 30.1). The segment  $R$  measures the territory located between each pair.  $T_i$  denotes the total amount of territory controlled by each population  $i$ , so that

$$T_A + T_B + T_C = 3R. \quad (1)$$

The territory between each pair of populations  $i$  and  $j$  is valuable to them because it contains resources (land and other inputs) that can be used by either  $i$  or  $j$  to produce output.<sup>6</sup> Each unit of territory produces one unit of output. However, in order to control some territory populations must spend resources to build their military capabilities (weapons). Output can be used either for consumption ( $C_i$ ) or to build weapons ( $W_i$ ). Hence population  $i$ 's consumption  $C_i$  is equal to the territory it controls  $T_i$  minus its military spending  $W_i$ :<sup>7</sup>

$$C_i = T_i - W_i. \quad (2)$$

In the presence of conflict and appropriation, the territory located between populations  $i$  and  $j$  is divided between them in proportion to their military strength. If population  $i$ 's weapons are  $W_i$  and population  $j$ 's weapons are  $W_j$ , population  $i$ 's share of territory will be

$$P(W_i, W_j) = \frac{W_i}{W_i + W_j}. \quad (3)$$

$P(W_i, W_j)$  is an instance of a contest success function, increasing in  $i$ 's weapons  $W_i$  and decreasing in  $j$ 's weapons  $W_j$ .  $P(W_i, W_j)$  can be interpreted as the probability that population  $i$  would win complete control over the territory should a war erupt between  $i$  and  $j$ . For simplicity, we assume that no actual war occurs, but that the territory is divided "under the shadow of power": each population controls a share of territory equal to what it could expect to win in case of war. In other terms, when there is conflict and appropriation, the border between populations is determined by their relative military power. For example, if population  $i$  has twice

as many weapons as population  $j$ , it will control  $2/3$  of the territory between  $i$  and  $j$ , population  $j$  will control the remaining  $1/3$ , and the border between the two populations will be at a distance  $\frac{2R}{3}$  from population  $i$  and at a distance  $\frac{R}{3}$  from population  $j$ .

This technology of conflict is a special case of a ratio contest success function in which population  $i$ 's probability of success is a function of  $\frac{W_i}{W_j}$  (Tullock 1980).<sup>8</sup> The function could be generalized to allow for a higher marginal impact of investment in weapons:  $P(W_i, W_j) = \frac{W_i^m}{W_i^m + W_j^m}$ , with  $m \geq 1$ . As shown by Skaperdas (1998) in a different setting, the parameter  $m$  has implications for alliance formation. In general, a higher  $m$  would strengthen the incentives to form alliances and unions. Here we abstract from this effect and assume  $m = 1$ .<sup>9</sup>

How much territory will each population control? How much will each population consume? We are now ready to consider equilibrium outcomes under different institutional arrangements. First, we derive equilibria when the three populations form three independent sovereign states and each state acquires and defends its territory on its own. Then, we study how equilibria differ under various forms of cooperation, such as (a) a nonaggression pact between two states, (b) a military alliance, and (c) a full political union.

### 3.2 Military spending, borders, and consumption under alternative institutional arrangements

#### 3.2.1 Three independent states

Assume that each population forms its own independent state. Each state  $i$  invests in its own weapons  $W_i$ , taking the weapons of the other two states  $j$  and  $k$  as given. We assume that a state's military capabilities are used to set the borders with both enemies simultaneously.<sup>10</sup> Each state  $i$  chooses  $W_i$  to maximize its population's consumption, given by

$$C_i = R \frac{W_i}{W_i + W_j} + R \frac{W_i}{W_i + W_k} - W_i. \tag{4}$$

The Nash equilibrium levels of military spending are

$$W_A^{in} = W_B^{in} = W_C^{in} = \frac{R}{2}. \tag{5}$$

In this symmetric equilibrium, all states are equally powerful, and each state obtains half a share of the territory under dispute with each of its two neighbors. Hence each population controls a territory of size  $R$ , produces  $R$  units of output, and consumes half of those units and uses the other half to build weapons. In this equilibrium with three independent states, consumption per capita is

$$C_A^{in} = C_B^{in} = C_C^{in} = \frac{R}{2}. \tag{6}$$

Clearly, military spending is a net loss for each population, as it diverts valuable resources from consumption. The three populations would be better off if they could commit to full disarmament ( $W_A^{in} = W_B^{in} = W_C^{in} = 0$ ), while dividing the world territory equally and peacefully among themselves. Then they would obtain the same land distribution as they get under conflict, but enjoy twice as much consumption ( $R$  rather than  $\frac{R}{2}$ ). Unfortunately this first-best outcome is not a Nash equilibrium: in the absence of some external commitment technology, the three states cannot credibly commit to global (multilateral) disarmament. In the rest of the chapter we will rule out any multilateral cooperation, but will consider different scenarios for bilateral cooperation.

### 3.2.2 Nonaggression pact

Consider the possibility of a credible nonaggression pact between two states ( $A$  and  $B$ ). That is, suppose that states  $A$  and  $B$  can credibly commit not to use force against each other and to divide the territory located between them peacefully and equally (so that each will obtain  $\frac{R}{2}$ ). At the same time, they continue to use their individual military capabilities to set territorial disputes with the third state ( $C$ ). In other words,  $A$  and  $B$  can form a nonaggression pact, but not an active military alliance (each is on its own against state  $C$ ). Then, each state  $i = A, B$  chooses its  $W_i$  to maximize

$$C_i = \frac{R}{2} + R \frac{W_i}{W_i + W_C} - W_i, \quad (7)$$

while state  $C$  maximizes

$$C_C = R \frac{W_C}{W_C + W_A} + R \frac{W_C}{W_C + W_B} - W_C. \quad (8)$$

The Nash equilibrium levels of weapons are

$$W_A^{na} = W_B^{na} = \frac{2R}{9} \quad (9)$$

and

$$W_C^{na} = \frac{4R}{9}. \quad (10)$$

In equilibrium all three states spend less on weapons than they would have in the absence of this bilateral nonaggression pact. Not surprisingly, the reduction is especially dramatic for  $A$  and  $B$ : without the pact each of them would have spent  $\frac{R}{2}$  in defense (half of its output), while now each spends only  $\frac{2R}{9}$ . However, in this equilibrium  $A$  and  $B$  are now weaker than  $C$ , and each of them controls less territory than in the previous equilibrium.  $C$  has twice as many weapons as each of the two other states, and hence it controls  $2/3$  of the territory located between  $A$  and  $C$ , and  $2/3$  of the territory between  $B$  and  $C$ . Nonetheless, the pact is a good deal for  $A$  and  $B$ . The loss of territory to  $C$  is more than offset by the gain in terms of lower



military spending. Consumption per capita in the two countries is higher than it would be without the pact:<sup>11</sup>

$$C_A^{na} = C_B^{na} = \frac{R}{2} + \frac{R}{3} - \frac{2R}{9} = \frac{11R}{18} > C_A^{in} = C_B^{in} = \frac{R}{2}. \quad (11)$$

In sum, a bilateral nonaggression pact allows significant net savings in defense spending, although at the cost of less effective protection against external aggression.

### 3.2.3 Military alliance

We now consider the case when, in addition to entering a nonaggression pact with each other, *A* and *B* can credibly commit to join forces against *C*, while still maintaining their independence.<sup>12</sup> Specifically, we suppose that (i) military spending remains decentralized across states: each state autonomously decides its own level of military spending and pays for it, but (ii) control over territory is determined by the aggregate military power of the alliance relative to the third state. Therefore

$$C_A = \frac{R}{2} + R \frac{W_A + W_B}{W_A + W_B + W_C} - W_A, \quad (12)$$

$$C_B = \frac{R}{2} + R \frac{W_A + W_B}{W_A + W_B + W_C} - W_B, \quad (13)$$

$$C_C = 2R \frac{W_C}{W_A + W_B + W_C} - W_C. \quad (14)$$

Each state continues to choose its weapons, taking the weapons of the other two states as given. In particular, each ally takes the other ally's weapons as given and does not internalize the benefits that its own weapons provide to its ally. Weapons in equilibrium are

$$W_A^{al} = W_B^{al} = \frac{R}{9}, \quad (15)$$

$$W_C^{al} = \frac{4R}{9}. \quad (16)$$

The aggregate level of military spending within an alliance ( $W_A^{al} + W_B^{al} = \frac{2R}{9}$ ) is the same as the sum of the weapons of the two states when they only form a nonaggression pact. Hence a military alliance provides the same protection against *C* that each state provided for itself when it was part of a mere non aggression pact. However, such military power is now obtained with a lower level of military spending per capita. This is a clear instance of economies of scale in defense and security. Consequently, consumption is higher in an active military alliance than in a non aggression pact:

$$C_A^{al} = C_B^{al} = \frac{R}{2} + \frac{R}{3} - \frac{R}{9} = \frac{13R}{18} > C_A^{na} = C_B^{na} = \frac{11R}{18}. \quad (17)$$

Notwithstanding such economies of scale, the alliance still provides only imperfect protection against  $C$ . Even though each state can rely on the size and resources of two populations, aggregate military power is “undersupplied.” This is an example of the well-known issue of free riding within decentralized military alliances, as each member fails to internalize the overall benefits that its military spending provides to the whole alliance (Olson and Zeckhauser 1966). In order to internalize the full benefits and costs of military spending, the two populations would have to form a centralized political union. We consider such an institutional arrangement next.

### 3.2.4 Political union

Finally, suppose that populations  $A$  and  $B$  form a full political union, where decisions over military spending are centralized. The union’s military capabilities  $W_U$  are decided jointly by the two populations in order to maximize their aggregate consumption, and their costs are shared equally within the union. That is,  $W_U$  is chosen to maximize

$$C_A + C_B = 2\left[\frac{R}{2} + R\frac{W_U}{W_U + W_C}\right] - W_U, \quad (18)$$

while state  $C$  maximizes

$$C_C = 2R\frac{W_U}{W_U + W_C} - W_C. \quad (19)$$

The Nash equilibrium outcomes are

$$W_U^* = W_C^* = \frac{R}{2}. \quad (20)$$

Now the whole union controls a territory of size  $2R$  (all territory between  $A$  and  $B$ , half the territory between  $A$  and  $C$ , and half the territory between  $B$  and  $C$ ). This means that the union provides as much protection against foreign aggression as an independent state (in the absence of a nonaggression pact or a decentralized alliance). But now this protection is provided at half the cost per capita:  $\frac{W_U}{2} = \frac{R}{4}$  rather than  $W_A^{in} = W_B^{in} = \frac{R}{2}$ . If the two populations share costs and benefits from military power equally, each population consumes

$$C_A^{pu} = C_B^{pu} = R - \frac{R}{4} = \frac{3R}{4}. \quad (21)$$

This level of consumption,  $C_A^{pu} = C_B^{pu}$ , is higher than in any of the other three arrangements (in contrast, population  $C$ ’s consumption is the same as in the case of three fully independent states).<sup>13</sup>

In sum, in this setting a political union provides cheaper protection to its citizens than they would get from a smaller sovereign state, and better protection than they would get from a decentralized alliance.

### 3.3 Trade-off between benefits of scale in defense and heterogeneity costs

We have seen that, in the presence of conflict and appropriation, cooperation in security reduces the need for expensive military capabilities and/or spreads the costs among a larger number of people. The largest gains are obtained by forming a full political union, while more modest gains are associated with a nonaggression pact or a decentralized alliance. But even though a centralized defense is the most effective form of protection against external threats, these defense benefits may not come for free. As mentioned in section 2, at the center of the literature on endogenous national borders is the idea that forming a political union may entail substantial political costs. When they form a political union, populations  $A$  and  $B$  may face a loss of utility from sharing a common government, foreign policy, tax system, and so on, insofar as preferences over public policies differ across the two populations. In general, whether a political union is formed will depend on the trade-off between economies of scale in defense and heterogeneity costs. Suppose that utility for each population  $i$  is

$$U_i = C_i + G_i, \quad (22)$$

where  $C_i$  is private consumption (as before) and  $G_i$  is the utility from the services of a public good (“the government”). When population  $i$  is politically independent, it can choose its favored type of government, providing utility  $G^h$ . When forming a union with the other population, each population must compromise and accept a less preferred type of government, providing utility  $G^l < G^h$ .<sup>14</sup> The difference between  $G^h$  and  $G^l$  captures heterogeneity costs  $H$ :

$$H \equiv G^h - G^l. \quad (23)$$

In equilibrium, total utility in a union is

$$U_A^{pu} = U_B^{pu} = \frac{3R}{4} + G^l = \frac{3R}{4} + G^h - H, \quad (24)$$

while utility in the case of full independence is

$$U_A^{in} = U_B^{in} = \frac{R}{2} + G^h. \quad (25)$$

When nonaggression pacts and decentralized alliances are not available, and the only choice available to the two populations is between full independence and political union, a union will be formed if and only if  $U_A^{pu} = U_B^{pu} > U_A^{in} = U_B^{in}$ , that is, if and only if the heterogeneity costs are less than the net gains from political unification in terms of higher consumption:<sup>15</sup>

$$H < C_i^{pu} - C_i^{in} = \frac{R}{4}. \quad (26)$$

In contrast, if we assume that the two populations can choose whether to form a political union or a decentralized alliance, the condition for a political union

becomes much more stringent:<sup>16</sup>

$$H < C_i^{pu} - C_i^{al} = \frac{R}{36}. \quad (27)$$

This implies that international changes that facilitate the formation of decentralized alliances will bring about the breakup of political unions with higher heterogeneity costs (high  $H$ ) or with less at stake in terms of security (low  $R$ ). In contrast, political unions with lower heterogeneity costs (low  $H$ ) and more at stake in case of conflict (high  $R$ ) will stick together even when decentralized alliances become feasible.

### 3.3.1 Heterogeneity costs and domestic conflict

A very important issue is the extent to which alliances or political unions actually succeed in eliminating conflict among their own members. In the previous analysis we have abstracted from the possibility that populations may continue to use military force against each other even after they join an alliance or a political union. Clearly the net benefits from forming a union would be affected if populations had to invest additional valuable resources to influence domestic outcomes in their favor. Such costs from internal conflict over resources or public policies could be viewed as additional heterogeneity costs from forming a union. For example, suppose that government policies within the political union are decided by a “domestic contest” between the two populations, where population  $A$  invests  $D_A$  units of output to build its own domestic-conflict capabilities,  $B$  invests  $D_B$ , and  $A$ 's probability of winning the contest is  $\frac{D_A}{D_A + D_B}$ . Assume that each population obtains utility  $G^h$  if it wins the contest, but utility  $G^h - 2H$  if the other population wins the contest and imposes its own preferred government policies. If no resources are invested in domestic-conflict capabilities by either population, each population has a  $1/2$  chance to have its preferred policies chosen, and, in expectation, it obtains utility from government service equal to  $G^l = G^h - H$ . Then, in the absence of domestic-conflict activities, the overall utility from a political union is the same as in the previous analysis, when we assumed no domestic conflict:

$$U_A^{pu} = U_B^{pu} = \frac{3R}{4} + G^h - H. \quad (28)$$

In contrast, when both populations invest in domestic-conflict capabilities, overall utility is lower, because of lower consumption. Each population within the union maximizes

$$U_i = \frac{D_i}{D_i + D_j} G^h + \left(1 - \frac{D_i}{D_i + D_j}\right) (G^h - 2H) + \frac{3R}{4} - D_i, \quad (29)$$

which implies equilibrium investment in domestic-conflict capabilities equal to

$$D_A^* = D_B^* = \frac{H}{2}. \quad (30)$$

Hence, overall utility in a political union with domestic conflict is

$$U_A^{pudc} = U_B^{pudc} = \frac{3R}{4} + G^h - \frac{3H}{2}. \quad (31)$$

That is, domestic conflict multiplies the losses from heterogeneity. In our example, heterogeneity costs equal to  $H$  in the absence of domestic conflict become 50% larger ( $\frac{3H}{2}$ ) as a consequence of domestic conflict. This implies that, for a given level of preference heterogeneity, a political union subject to internal conflict would be formed only for higher returns from international military power (in our setting, a higher  $R$ ).

In sum, both international conflict and domestic conflict affect the incentives to form a political union. To keep things simple, we have modeled the two effects separately: the extent of domestic conflict is not directly influenced by the extent of international conflict, and vice versa. However, in more complex settings a larger external threat may directly affect the extent of internal conflict within a political union. More generally, in this section we have illustrated the logic of the trade-off between economies of scale in security and heterogeneity costs within a very simple framework, abstracting from several variables and channels that may affect the relation between conflict and national borders. We will discuss some of those effects and extensions in the rest of this chapter.

## 4. THE POLITICAL ECONOMICS OF CONFLICT, PEACE, AND NATIONAL BORDERS

In this section we discuss the connections between conflict and national borders in light of recent political economy contributions. In particular, we consider analyses that have focused on systemic effects when conflict and national borders are determined endogenously, the role of democratization and international economic integration, and the political economy of civil conflict and secessions.

### 4.1 International conflict and the number and size of nations

The relationship between international conflict and national borders is studied by Alesina and Spolaore (2005, 2006). In those articles the equilibrium number and size of nations is influenced by the need for governments to protect the interests of their citizens in a bellicose world. Larger national states emerge when national military power is more important in the settlement of international disputes. In contrast, a reduction in the importance of international conflict lowers the incentives to form larger political unions and brings about the formation of smaller, more numerous states.

Nonetheless, a decrease in the importance of military force may not reduce the total number of violent conflicts in the world. When borders are formed endogenously, a lesser role for defense and security, by bringing about the creation of more numerous states, can paradoxically increase the number of observed instances of international conflict. This is because, even if the use of force is less likely in each specific international dispute, the greater number of states raises the probability that some of those states may engage in conflict with each other.

Alesina and Spolaore (2006) show that a lower probability of having to use force in international relations increases the number of nations in equilibrium and can lead to an increase in the number of international interactions that are resolved by force. Whether the total number of international conflicts increases or decreases will depend on the average size of nations before political disintegration. The actual number of international conflicts will decrease only if the average size of nations before the breakup is already sufficiently small. In contrast, the breakup of larger political unions tends to be associated with an increase in the number of observed conflicts. A similar effect is derived for defense spending per capita, which may increase in a world of smaller countries even as military power becomes less important in the settling of international disputes, therefore reducing or even eliminating a “peace dividend” in terms of lower defense spending per capita.

Alesina and Spolaore (2005) study a more complex setting in which states may (i) engage in open wars, which entail direct costs in terms of havoc and destruction, in addition to the costs of weapons, or (ii) settle international disputes through peaceful bargaining, where each state’s bargaining position depends on its relative investment in military capabilities. Different regions may choose to remain independent or to join their neighbors in centralized political unions. In equilibrium, the probability that wars occur and the returns to defense spending are endogenously determined. Improvements in the enforcement of national control rights over resources reduce the need for defense, and may therefore cause breakups of nations, possibly leading to more wars in equilibrium.

## 4.2 Conflict, democracy, and national borders

The connection between democracy and conflict is at the center of an extensive literature in international relations and political economy. Specifically, as already mentioned in section 2, this relation is part of the liberal peace view that democracy and trade should reduce the risk of international conflict. Nonetheless, the links among democratization, conflict, and the size of nations are relatively unexplored.

The trade-off between costs and benefits of national size depends not only on the degree of heterogeneity of preferences, but also on the political regime through which preferences are turned into policies. Rent-seeking dictators that are less concerned with the preferences of their subjects may pursue expansionary policies leading to the formation of inefficiently large countries and empires. In contrast, democratization raises the importance of citizens’ diverse preferences

over public policies, therefore leading to more demand for political autonomy and independence (Alesina and Spolaore 1997).<sup>17</sup>

In addition, as documented in the vast literature on the “democratic peace,” dictators tend to be more willing than democratic governments to engage in military conflict against their neighbors (e.g., see Bueno de Mesquita et al. 1999; Oneal and Russett 1999; and, for a critical view, Gowa 2000). Then, democratization may lead to secessions and formation of smaller countries for two reasons: because it raises the importance of heterogeneity costs, and because it reduces the benefits from military power.

An original theory of the shape and size of nations in a world of rent-seeking leviathans was provided by David Friedman (1977), who argued that national borders in such a world would maximize the wealth of rulers. Alesina and Spolaore (1997), in their formal analysis of endogenous national borders, compare democratic outcomes, when borders are determined by majority voting, with equilibrium outcomes when the number and size of nations is determined by leviathans who maximize their rents (as in Friedman’s theory).<sup>18</sup> In Alesina and Spolaore’s framework leviathans face a “no-insurrection” constraint: in order to continue their rule, leviathans must maintain a fraction  $\delta$  of the population above a minimum level of welfare. The parameter  $\delta$  can be interpreted as a measure of democratic responsiveness. An undemocratic dictator can ignore the preferences of most subjects ( $\delta < 1/2$ ). As  $\delta$  increases, leviathans become more concerned with larger sectors of the population, and gain relatively smaller rents when they extend borders, because they must compensate a larger fraction of the population for higher heterogeneity costs. In general, democratization (a higher  $\delta$ ) will be associated with smaller states in a world of rent-maximizing leviathans. Alesina and Spolaore (2003, chap. 7, 2006) have extended this analysis to study how democratic constraints interact with international conflict in a world of leviathans and have shown that democratization has a smaller effect on borders at higher levels of conflict, while conflict has a smaller effect on borders at higher levels of democracy. In other words, in a very bellicose world, democratization is less important in reducing the size of nations, while in a more democratic world, international conflict is less important in determining national borders.

### 4.3 International openness, conflict and peace, and political disintegration

The relation between international openness and national size has received significant attention in the literature. Less attention, however, has been given to the connection between openness and national borders in a world of conflict and appropriation, when conflict, trade, and borders are all endogenous variables and affect each other in equilibrium.

Analyses of the size of nations have pointed out that the trade-off between benefits and costs of national size is also a function of the degree of international

economic integration (Alesina and Spolaore 1997, 2003; Alesina, Spolaore, and Wacziarg 2000, 2005; Hiscox 2003; Wittman 2000). Relevant economic size may or may not coincide with the political size of a state as defined by its national borders. Larger states mean larger domestic markets when political borders imply barriers to international exchange. In contrast, market size and political size would be uncorrelated in a world of perfect free trade in which political borders imposed no costs on international transactions. If market size matters for economic performance, small countries can prosper in a world of free trade and high economic integration, while a large size is more important economically in a world of trade barriers and protectionism. Empirically, the effect of size on economic performance tends to be higher for countries that are less open, and the effect of openness is much larger for smaller countries (Alesina, Spolaore, and Wacziarg 2000, 2005; Spolaore and Wacziarg, 2005). As international economic integration increases, the benefits of a large national size are reduced, and political disintegration becomes less costly. Conversely, smaller countries tend to benefit from more international openness. Therefore economic integration and political disintegration go hand in hand (Alesina, Spolaore, and Wacziarg 2000).

As in the case of democratization, an additional effect of international trade on the incentives to form larger nations emerges if economic integration also reduces international conflict between trading partners, as argued by the supporters of the liberal peace hypothesis (economic contributions on the empirics of trade and conflict include, for instance, Martin, Mayer, and Thoenig [2008] and Polacheck [1980]).

A study of the interconnections among economic integration, international conflict, and the size of nations is provided by Spolaore (2004). When conflict interacts with trade, multiple equilibria in conflict, openness, and size of political units are possible. Other things being equal, smaller countries tend to be more open and less likely to engage in conflict. At the same time, in a world of high openness and low conflict, political size matters less, therefore justifying smaller states in equilibrium. In another equilibrium, though, the world could be formed by larger political units, with less international economic integration and a more prominent use of force in the resolution of international disputes. In such a world of greater conflict and more protectionism, there are greater benefits associated with larger domestic markets and economies of scale in defense. This, in turn, will induce people to form larger political units in equilibrium. Then, for given fundamentals, alternative geopolitical outcomes are possible. In recent decades the world has moved toward greater political decentralization, relatively less international conflict, and greater international economic integration. However, this analysis suggests that this same world could take a different path, with fewer political and military blocs that are less open and more hostile to each other. The study of endogenous national borders suggests that either development could be self-fulfilling, and international coordination of strategies and expectations may play a crucial role in the determination of long-run outcomes.



#### 4.4 Civil conflict, external threats, and secessions

Civil and ethnic conflicts have been extensively studied by sociologists and political scientists (e.g., Fearon and Laitin 2003; Horowitz 1985), and increasingly by economists (e.g., Collier 2001; Montalvo and Reynal-Querol 2005). While most of these studies consider conflict within given borders, a few have explicitly focused on ethnic conflict, reconfiguration of borders, and political partitions. For example, Sambanis (2000) finds that, in general, partitions do not seem to prevent the recurrence of ethnic wars, and writes that “even if this solution reduces the incidence of internal war, it will almost certainly increase the incidence of international war,” an observation that is consistent with the predictions of the models of international conflict and national borders discussed previously. For a general discussion from an international relations perspective, see also Fearon (2004). In addition, some researchers have begun to investigate the effects of postconflict partition on economic and policy outcomes, including the provision of public goods; for instance, Swee (2009) studied the effects of the partition that ended the Bosnian War on the postwar local provision of schooling.

An issue that is especially relevant from the perspective of this chapter is the relation between external threats and internal national cohesion. As mentioned in the introduction, the idea that conflict with foreigners reduces or eliminates domestic conflict has a long historical pedigree, going back to classical times.<sup>19</sup> Does a higher likelihood of conflict with foreign enemies reduce the extent of domestic conflict? If it does, through what mechanisms? More broadly, what are the relations among international conflict, civil conflict, and the formation of alliances and political unions?

Analyses of alliance formation in formal models of conflict and appropriation (both within and across alliances) are provided by Garfinkel (2004b, 2004c), who also studies the relation between external threats and domestic conflict (Garfinkel 2004a). A theoretical analysis of the interaction between intergroup and intragroup conflict is given by Münster (2007).

A contribution more specifically focused on endogenous national formation in the presence of civil conflict is Spolaore (2008), who provides a formal analysis of borders when secessions are the direct outcome of civil conflict between two regions within a unified country. Spending on civil-conflict capabilities and the probability of secession are endogenous variables, which depend on (i) the incentives to secede and (ii) the incentives to oppose secession attempts. Such incentives, in turn, depend on our familiar set of factors: heterogeneity costs, economies of scale in the provision of public goods, and the relative size of the two regions (a larger region, or center, and a smaller region, or periphery). Spolaore (2008) shows that separatist conflict tends to be more intense when the two regions are of roughly equal size, consistent with the empirical literature on civil and ethnic conflict (see Collier 2001; Horowitz 1985). In this context, external threats do not necessarily reduce the intensity of separatist conflict within a country. While external threats reduce

the periphery's incentives to secede, they also strengthens the center's incentives to resist the periphery's secession. This effect may lead to more diversion of resources toward civil conflict in the aggregate. Finally, the possibility of civil conflict over government policies, after borders have been determined (as in our stylized model in section 3), reduces both the incentives to secede in the smaller region and the benefits from union in the larger region. In fact, the perspective of civil conflict over government policies may even induce a "secession of the center." This is consistent with the general point that civil conflict tends to magnify heterogeneity costs and increase the probability of secessions.

## 5. DIRECTIONS FOR FURTHER RESEARCH

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An economics approach to conflict, peace, and national borders provides insights that complement the understanding obtained from more traditional historical and political studies. Part of the value added from formal economic analysis is the ability to model complex decisions and interactions in relatively simple and stark ways, highlighting the logic of key mechanisms and effects. In this spirit, most of the political economy analysis has been conducted using stylized theoretical models.

A priority now is to bring these hypotheses and insights to the data and link the theoretical framework more closely with the historical record. This is not an easy step, given the difficulty of collecting the relevant data and, perhaps more importantly, of identifying causal relations when almost every key variable is endogenous. Systematic empirical analyses of the connections between conflict and endogenous national borders are still to be developed, building on the vast empirical literature on the determinants of conflict and wars.

An especially difficult task is to measure the relevant heterogeneity of preferences and characteristics across individuals, regions, and populations. Valuable information is provided by measures of ethnolinguistic fractionalization, introduced in the economic literature by Mauro (1995), but such variables proxy only imperfectly for the extent and intensity of preference heterogeneity that affect the determination of national borders.<sup>20</sup> More recent contributions have considered direct measures of long-term cultural and historical distances across populations. Spolaore and Wacziarg (2009a) have introduced a novel way to measure the effects of long-term historical relatedness on economic outcomes by exploiting the information from genetic distance among human populations. Desmet et al. (2009) provide an interesting empirical analysis of the connection between genetic distance and cultural distance (measured by answers to a series of questions from the World Value Survey), argue that such measures can be used as proxies for preference heterogeneity, and use them to provide insights on the stability and breakup of national borders within Europe.

A recent empirical contribution directly focused on the determinants of conflict and wars is Spolaore and Wacziarg (2009b), who show that populations that are more

closely related genetically—and hence, on average, culturally and historically—are more likely to engage in interstate conflict and wars, even after controlling for a range of geographic measures, measures of linguistic and religious distance, and other factors that affect interstate conflict, including trade and democracy. These findings are consistent with a theoretical framework in which the degree of genealogical relatedness between populations has a positive effect on their conflict propensities because closely related populations, on average, tend to share common traits and preferences, to interact with each other more, and to care about a larger set of common issues. Spolaore and Wacziarg (2009b) also document that (i) the effect of relatedness is robust to controlling for trade and democracy variables, and (ii) the pacifying effects of bilateral trade and democracy survive when controlling for relatedness between populations.

This line of investigation may have implications for the relation between civil conflict and heterogeneity within countries. More generally, the availability of these novel measures of long-term relatedness, and the emerging evidence of robust links between such measures and economic and political outcomes (including conflict and war), point to a promising area for future research, with the potential to illuminate several issues and questions discussed in this chapter. An especially relevant extension would be to study the determinants and effects of conflict—both within and across states—taking into account not only how relatedness affects conflict, but also how conflict and relatedness together affect the endogenous formation of national borders, and vice versa.

In sum, only the very first steps have been taken toward a systematic theoretical and empirical analysis of conflict, peace, and national borders from an economics perspective. This whole set of topics constitutes a fascinating and promising area for future research.

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## NOTES

1. See also Bean (1973) and Tilly (1975). For a recent discussion of the literature on warfare and modern state formation from a political science perspective see Spruyt (2007).
2. The philosophical and political literature on the size of political systems is discussed in Dahl and Tufte (1973).
3. A related literature has focused on the implications of internal distributional conflict for the organization of jurisdictions (e.g., Wärneryd 1998).

4. In this chapter we use “nation” as equivalent to “sovereign state,” as commonly understood in English when speaking of *international* relations or the United *Nations*.
5. A further complication arises if the returns to foreign aggression are also increasing in a country’s size—for instance, in its capital stock, as in Thomson’s (1976) classic analysis of optimal defense spending and taxation.
6. To keep the analysis simple, we assume that the territory located between populations  $i$  and  $j$  is of no value to the third population  $k \neq i, j$ , or, equivalently, that population  $k$  is unable or unwilling to control any fraction of territory between populations  $i$  and  $j$ . Therefore  $0 \leq T_i \leq 2R$  for  $i = A, B, C$ . An economic interpretation of this restriction is that each territory requires specific inappropriable inputs that only the neighboring populations possess. A different interpretation is that the territory between two populations is a metaphor for a more general set of “common issues” under dispute between those populations, along the lines of the model in Spolaore and Wacziarg (2009b).
7. All variables are in per capita terms, as population size is normalized to one.
8. An alternative specification, also used in the formal literature, is the logistic or difference function, where population  $i$ ’s probability of success is a function of  $W_i - W_j$ . For discussions of alternative specifications, see Hirshleifer (1989) and Garfinkel and Skaperdas (2007).
9. In Skaperdas (1998)  $m > 1$  is indeed necessary for the formation of stable alliances. In our setting this is not the case, because of different assumptions about conflict over resources between pairs of populations and institutional characteristics of alliances and unions. Garfinkel (2004b, 2004c) also studies models of alliance formation and conflict where stable alliances may form when  $m = 1$ . In her analyses, however, a crucial role is played by conflict over resource redistribution within alliances. We will return to the issue of internal conflict at the end of this chapter and in the next section.
10. This assumption is reasonable given that no actual wars take place in our model, but borders are set “under the shadow of power.” If borders were determined by actual wars, taking place simultaneously between all pairs of states, we would have to specify how each state divides its military capabilities between its two fronts. In the symmetric case of three independent states, each state would divide its weapons equally between the two fronts, and our results would be unchanged. We will abstract from these complications in the rest of the analysis, and always assume that a state’s military power can be used against all its enemies simultaneously (a form of economies of scope in defense).
11.  $C$  also gains when  $A$  and  $B$  form a non aggression pact between themselves. It obtains a larger territory while also saving in weapons relative to the previous equilibrium ( $W_C^{na} = \frac{4R}{9} < W_C^{in} = \frac{R}{2}$ ).
12. Here we abstract from the possibility that the two states can commit to join forces against a third state, but are unable to commit not to attack each other. The issue of intra-alliance (or later, intra state) conflict is an important one, and we will turn to it later.
13. The fact that a political union provides a higher level of consumption to its members relative to the other arrangements is not a necessary implication of the definition of a political union. Even though the political union maximizes aggregate consumption of the two union members, it takes the behavior of state  $C$  as given, and does not fully internalize the effects of its decisions on  $C$ ’s behavior. In principle, a union could end up lowering its members consumption, relative to alternative arrangements, if state  $C$  were to react to the union’s formation by increasing its military spending to such an

extent that would offset the other two populations' gains from forming a union. This could happen, for instance, if gains from conflict were asymmetric across countries and *C* obtained much higher gains from conflict than *A* and *B*. We do not pursue these alternative specifications here.

14. In the literature, preferences over different types of government have often been given a spatial interpretation (for a discussion, see Alesina and Spolaore [2003, chap. 2, 3] and Spolaore [2006]). For example, within our model we could assume that each population prefers to locate the state's "capital" as close as possible to its own vertex (*A* or *B*), and that the capital of a political union is located at its geographical center, halfway between *A* and *B*.
15. For simplicity, we abstract from other benefits of political unions, such as economies of scale in the provision of non defense public goods. *H* could be reinterpreted as heterogeneity costs net of those additional benefits.
16. We abstract from heterogeneity costs in decentralized alliances. In principle, political costs may also arise in a decentralized alliance, but they are likely to be much smaller, as each population keeps full independence, chooses its weapons autonomously, and pays for them.
17. For a discussion of the relation between democratization and the changing size of national states, see also Lake and O'Mahony (2004).
18. Economic analyses of the expansion of empires were also provided by Findlay (1996) and Grossman and Mendoza (2004).
19. For example, Sallust in *The War with Jugurtha* wrote: "before the destruction of Carthage the people and senate of Rome together governed the republic peacefully and with moderation. There was no strife among the citizens either for glory or for power; fear of the enemy (*metus hostilis*) preserved the good morals of the state" (cited in Wood 1995, 177; see also Evrigenis 2008)
20. For a recent theoretical and empirical analysis of the origins of ethnolinguistic diversity, see Michalopoulos (2008).

## REFERENCES

- Alesina, A., and E. Spolaore 1997. On the number and size of nations. *Quarterly Journal of Economics* 112(4):1027–56.
- . 2003. *The size of nations*. Cambridge, MA: MIT Press.
- . 2005. War, peace and the size of countries. *Journal of Public Economics* 89(7):1333–54.
- . 2006. Conflict, defense spending, and the number of nations. *European Economic Review* 50(1):91–120.
- Alesina, A., E. Spolaore, and R. Wacziarg 2000. Economic integration and political disintegration. *American Economic Review* 90(5):1276–96.
- . 2005. Trade, growth, and the size of countries. In *Handbook of economic growth*, P. Aghion and S. Durlauf. Amsterdam: North Holland.
- Bean, R. 1973. War and the birth of the nation state. *Journal of Economic History*, 33:203–21.
- Bolton, P., and G. Roland. 1997. The breakups of nations: A political economy analysis. *Quarterly Journal of Economics* 112(4):1057–89.

- Bolton, P., G. Roland and E. Spolaore 1996. Economic theories of the breakup and integration of nations. *European Economic Review*, 40: 697–705.
- Bordignon, M., and S. Brusco 2001. Optimal secession rules. *European Economic Review*, 45:1811–34
- Bueno de Mesquita, B., J. D. Morrow, R. M. Siverson, and A. Smith 1999. An institutional explanation of the democratic peace. *American Political Science Review* 93(4):791–807.
- Collier, P. 2001. The economic causes of civil conflict and their implications for policy. In: *Turbulent peace: The challenges of managing international conflict*. ed. C. A. Crocker, F. O. Hampson, and P. R. Aall. Washington D.C: U.S. Institute of Peace Press.
- Colomer, J. M. 2007. *Great empires, small nations. The uncertain future of the sovereign state*. New York: Routledge.
- Dahl, R. A., and E. R. Tufte. 1973. *Size and democracy*. Stanford, CA: Stanford University Press.
- Desmet, K., M. Le Breton, I. Ortuno-Ortín, and S. Weber 2009. The stability and breakup of nations: A quantitative analysis. Mimeo, Universidad Carlos III.
- Ellingsen, T. 1998. Externalities and internalities: A model of political integration. *Journal of Public Economics* 68(2):251–68.
- Evrigenis, I. 2008. *Fear of enemies and collective action*. Cambridge: Cambridge University Press.
- Fearon, J., 2004. Separatist wars, partition, and world order. *Security Studies* 3(4):394–415.
- Fearon, J., and D. Laitin 2003. Ethnicity, insurgency, and civil war. *American Political Science Review* 97(1):75–90.
- Findlay, R. 1996. Towards a model of territorial expansion and the limits of empires. In *The political economy of conflict and appropriation*. ed. M. Garfinkel and S. Skaperdas, Cambridge: Cambridge University Press.
- Friedman, D. 1977. A theory of the size and shape of nations. *Journal of Political Economy* 85:59–77.
- Garfinkel, M. R. (2004a). Global threats and the domestic struggle for power. *European Journal of Political Economy* 20:495–508.
- . (2004b). On the stable formation of groups: Managing the conflict within. *Conflict Management and Peace Science* 21:43–68.
- . (2004c). Stable alliance formation in distributional conflict. *European Journal of Political Economy* 20: 829–852.
- Garfinkel, M. R. and S. Skaperdas. 2007. Economics of conflict: An overview. In *Handbook of defense economics*, Volume 2, ed. K. Hartley and T. Sandler. Amsterdam, North Holland.
- Goyal, S., and K. Staal. 2004. The political economy of regionalism. *European Economic Review* 48:563–593.
- Gowa, J. 2000. *Ballots and bullets: The elusive democratic peace* Princeton, NJ: Princeton University Press.
- Grossman, H. I., and J. Mendoza. 2004. Annexation or conquest? The building of the Roman Empire. Mimeo, Brown University.
- Hiscox, M. 2003. Political integration and disintegration in the global economy. In: *Globalizing authority*, ed. M. Kahler and D. Lake Princeton, NJ: Princeton University Press.
- Hirshleifer, J. 1989. Conflict and rent-seeking success functions: Ratio versus difference models of relative success. *Public Choice* 63:101–112
- Horowitz, D. L. 1985. *Ethnic groups in conflict*. Berkeley University of California Press.
- Kant, I. 1795/2006. *Toward perpetual peace*. New Haven, CT: Yale University Press.

- Lake, D., and A. O'Mahony. 2004. The incredible shrinking state: Explaining the territorial size of countries. *Journal of Conflict Resolution* 48(5):699–722.
- LeBreton, M., and S. Weber. 2003. The art of making everybody happy: How to prevent a secession. *IMF Staff Papers* 50(3):403–435.
- Martin, P., T. Mayer, and M. Thoenig. 2008. Made trade not war? *Review of Economic Studies*, 75:865–900.
- Mauro, P. 1995. Corruption and growth. *Quarterly Journal of Economics*. 110(3):681–712.
- Michalopoulos, S. 2008. The origins of ethnolinguistic diversity. Theory and evidence. Discussion Paper 0725, Tufts University.
- Montalvo, J. G., and M. Reynal-Querol. 2005. Ethnic polarization, potential conflict and civil war. *American Economic Review* 95(3): 796–816.
- Montesquieu, C. de. 1748/1987. *The spirit of the laws*, Cambridge: Cambridge University Press.
- Münster, J. 2007. Simultaneous inter- and intra-group conflicts. *Economic Theory* 32(2):333-352.
- Olson, M., and R. Zeckhauser. 1966. An economic theory of alliances *Review of Economics and Statistics* 48,266–79.
- Oneal, J. R., and B. M. Russett. 1999. The Kantian peace: The pacific benefits of democracy, interdependence, and international organizations. *World Politics* 52(1):1–37.
- Polachek, S. 1980. Conflict and trade. *Journal of Conflict Resolution* 24:55–78.
- Powell, R. 1999. *In the shadow of power: States and strategies in international politics*. Princeton, NJ: Princeton University Press.
- Riker, W. 1964. *Federalism*. New York: Little, Brown.
- Sambanis, N. 2000. Partition as a solution to ethnic war. An empirical critique of the theoretical literature. *World Politics* 52(4):437–83.
- Skaperdas, S. 1998. On the formation of alliances in conflict and contests. *Public Choice* 96(1–2):25–42.
- Spolaore, E. 2004. Economic integration, international conflict and political unions. *Rivista di Politica Economica* 94:3–50.
- . 2006. National borders and the size of nations. In *The Oxford handbook of political economy*, B. R. Weingast and D. A. Wittman. Oxford: Oxford University Press.
- . 2008. Civil conflict and secessions. *Economics of Governance*, 9(1):45–63.
- Spolaore, E., and R. Wacziarg. 2005. Borders and growth. *Journal of Economic Growth* 10(4):331–386.
- . 2009a. The diffusion of development *Quarterly Journal of Economics* 124(2): 469–529.
- . 2009b. War and relatedness. NBER Working paper 15095, National Bureau of Economic Research, Cambridge, MA.
- Spruyt, H. 2007. War, trade and state formation In *The Oxford handbook of comparative politics*, C. Boix and S. C. Stokes. Oxford: Oxford University Press.
- Swee, E. 2009. Together or separate? Post-conflict partition, ethnic homogenization, and the provision of public schooling working paper, University of Toronto.
- Thomson, E. A. 1976. Taxation and national defense. *Journal of Political Economy* 82(4):755–782.
- Tilly, C., ed. 1975. *The formation of national states in western Europe*. Princeton, NJ: Princeton University Press.
- . 1992. *Coercion, capital and European states, AD 990–1990*. Cambridge, MA: Blackwell.

- Tullock, G. 1980. Efficient rent seeking. In: ed. *Toward a theory of the rent-seeking society*, ed. J. M. Buchanan, R. D. Tollison, and G. Tullock College Station, TX: Texas A&M University Press.
- Wärneryd, K. 1998. Distributional conflict and jurisdictional organization. *Journal of Public Economics* 69(3):435–450.
- Wittman, D. A. 2000. The wealth and size of nations. *Journal of Conflict Resolution* 6: 885–895.
- Wood, N. 1995. Sallust's theorem: A comment on 'fear' in Western political thought. *History of Political Thought* 16(2):174–189.