Federalism, Regional Redistribution, and Country Stability*

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*prepared for the 5th Symposium on Fiscal Federalism “Regional fiscal flows, balance-sheet federalism, and the stability of federations,” IEB-IEA, Barcelona, June 19-20, 2008, and forthcoming in a volume of the Wallace Oates series 'Studies in Fiscal Federalism and State-Local Finance,' Edward Elgar Publishing. I am grateful to Massimo Bordignon, Albert Solé-Ollé, and other symposium participants for valuable comments and suggestions. The usual disclaimer applies.

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1 Introduction

In recent decades a large number of new sovereign states has been created through secessions, decolonization and breakup of existing countries. Since 1990 the Soviet Union split into fifteen independent countries, Yugoslavia gave way to six sovereign states (not counting Kosovo), Czechoslovakia broke into two separate states, Eritrea seceded from Ethiopia, Namibia gained independence from South Africa, and Timor Leste left Indonesia. Today there are 193 internationally recognized sovereign states in the world, up from 74 in 1945 (the latest UN member is Montenegro, which joined in 2006). At the same time numerous countries, while remaining unified, have taken steps towards more regional autonomy and decentralization.[1] Regional redistribution, decentralization and federalism have played a prominent role in political debates across Europe (e.g., in Belgium, Italy, Spain, the United Kingdom) and all over the world - from Canada to Colombia, from Nigeria to South Africa, from Iraq to India.

These trends have motivated a growing literature on the political economy of national borders, which has addressed questions such as: Why do countries break up? What are the costs and benefits of secessions and border redrawing?

Are country breakups efficient from an economic perspective? Is the demand for sovereignty and independence connected to the demand for regional decentralization and autonomy within unified countries? Do decentralization and federalism reduce the periphery's incentives to secede?

In this chapter we will review some key concepts and results about the efficiency and stability of national borders from an economic perspective (Section 2). Building on those ideas, we will then discuss two related questions:

(i) We will consider the relationship between interregional redistribution and the stability of national borders, and argue that interregional redistribution is a two-sided sword, depending on whether transfers are based on regional preferences or income (Section 3).

(ii) We will ask whether decentralization and federalism promote or hamper country stability (Section 4). In particular, we will provide a simple analytical model of the relationship between decentralization and incentives to secede, and briefly discuss some empirical evidence.

2 The political economy of national borders: an overview

The formation and breakup of sovereign states has been at the center of a vast philosophical, political, and historical literature for centuries.[2]. In contrast, economists have usually taken political borders as given. Only in recent years has the literature started to address questions of country formation and breakup with the tools and concepts of economic analysis. This is an appropriate development, because political borders are not a fixed part of the geographical landscape, to be treated as given ("exogenous"), but human-made institutions, affected by the decisions and interactions of individuals and groups pursuing their objectives under constraints. Therefore, understanding the formation and breakup of nations is a natural extension of political economics. The central goal of contemporary political economy is to understand ("endogenize") collective decisions and institutions, and such institutions include sovereign states and federations. General discussions of the economic literature on national borders are provided in Alesina and Spolaore (2003), Bolton, Roland and Spolaore (1996), and Spolaore (2006), on which this section mainly builds. Contributions to the economic literature on national borders and secessions include Alesina and Spolaore (1997, 2005, 2006), Alesina, Spolaore and Wacziarg (2000), Bolton and Roland (1997), Bordignon and Brusco (2001), Ellingsen (1998), Goyal and Staal (2003), Le Breton and Weber (2003), Wittman (2000), and others.

When we consider the number and size of sovereign states from an economic perspective, a natural starting point is the trade-off between benefits and costs from a larger size. An essential role for states is the supply of public goods to their citizens. Providing public goods comes with economies of scale, because public goods are typically non-rival in consumption. That is, each citizen can benefit from them without reducing the benefits for other citizens, and therefore public goods are cheaper per person when more taxpayers pay for them. Empirically, the share of government spending over gross domestic product (GDP) is decreasing in population: smaller countries tend to have proportionally larger governments.[3] Moreover, in principle larger nations can better internalize cross-regional externalities - an issue extensively studied in the literature on decentralization and fiscal federalism. Additional benefits from size come from insurance against imperfectly correlated natural and economic shocks through interregional transfers, when economic agents cannot perfectly insure against those shocks in international capital markets.

However, a larger size also comes with significant economic and political costs. As states become larger, administrative costs and congestion may overcome some of the scale benefits. More importantly, an expansion of a state's borders is likely to bring about higher diversity of preferences for public policies and types of governments across different groups of citizens. As national borders include more diverse populations - with different cultures, languages, ethnicities, religions, and so on - disagreements over the fundamental characteristics of the state (e.g., legal system, official language, foreign policy) become more likely to emerge and harder to reconcile. In general, being part of the same country implies sharing jointly-supplied public goods and policies in ways that cannot always satisfy everybody's preferences. This induces a trade-off between economies of scale and heterogeneity of preferences. Such trade-off has played a central role in the economic literature on the size of nations (see Alesina and Spolaore, 1997; 2003).

The trade-off depends not only on the degree of heterogeneity of preferences but also on the political regime through which preferences are turned into policies. For example, rent-seeking dictators (Leviathans) 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 leads to secessions and formation of smaller countries. Up to a point, the breakup of countries associated with democratization can improve efficiency. However, in the absence of effective political mechanisms to integrate populations with diverse preferences, self-determination and voting outcomes tend to bring about excessive fragmentation and costly breakup. Such political costs tend to depend not only on the degree of heterogeneity of preferences, but also on the quality of institutions through which individual preferences are turned into collective action. While in some societies and political systems there exist effective mechanisms to integrate populations with diverse preferences, in other societies heterogeneity comes with higher political and economic costs. On the other hand, the quality of institutions itself is likely to depend on the extent preferences are heterogenous within a society. At the same time, diversity may also bring about some direct economic benefits through learning, specialization and exchange of ideas and innovations. Successful societies manage to minimize the costs of heterogeneity while maximizing the benefits stemming from a diverse pool of preferences, skills and endowments.

The study of the relationship among heterogeneity of preferences, quality of institutions and stability of countries is still in its infancy. A difficult task is how to measure relevant heterogeneity of preferences and characteristics across individuals and regions. 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. More recent economic contributions have considered direct measures of long-term historical differences across populations, including measures of genetic, linguistic and religious distance that explain the diffusion of technological and institutional innovations across societies (Spolaore and Wacziarg, 2009). An interesting analysis that connects genetic, linguistic and cultural distances to national stability in Europe is provided by Desmet et al. (2007).

As stressed by the economic literature on national borders, the trade-off between benefits and costs of size is not invariant with respect to the political and economic environment. For instance, it is also a function of the degree of international openness (Alesina and Spolaore, 1997; Alesina, Spolaore and Wacziarg, 2000; 2004; Spolaore and Wacziarg, 2005). This is because international openness affects the economic impact of a country's domestic size. The extent of the market is an important determinant of economic prosperity, but the size of the market does not necessarily coincide with the political size of a country as defined by its national borders. Larger nations mean larger 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 exchanges. Consequently, market size depends both on country size and the degree of international openness. Small countries can prosper in a world of free trade and high economic integration, whereas a large political size is more important for economic success in a world of trade barriers and protectionism. This is confirmed by empirical evidence from cross-country regressions. The effect of size on economic performance (income per capita, growth) tends to be higher for countries that are less open, and the effect of openness is much larger for smaller countries[4] This has important consequences for the stability of countries. As international economic integration increases, the benefits of a large political size are reduced, and the formation of smaller political units (political disintegration) becomes less costly. Hence the trade-off between size and heterogeneity shifts in favor of smaller and more homogeneous countries. We can also think of the reverse source of causality. Small countries have a particularly strong interest in maintaining free trade, since so much of their economy depends upon international markets. When openness is endogenized, the analysis can be extended to capture two possible worlds: a world of large and relatively closed economies, and one of more numerous, smaller, more open economies (Spolaore, 2004).In a nutshell, economic integration and political disintegration tend to go hand in hand.

Another prominent set of forces affecting national borders and their stability stems from from conflict, defense and security. Contributions to the economic literature on endogenous borders have explicitly modeled provision of defense, international conflicts and wars, building on the formal literature on conflict and appropriation pioneered by Haavelmo (1954), Tullock (1980), Hirshleifer

(1989, 1991) and Grossman (1991). For instance, international conflict and defense are at the center of the analysis of country formation and breakup in Alesina and Spolaore (2005, 2006) and Spolaore (2004). In those papers the size of nations is affected by the fact that a country's military power matters in the settlement of international disputes. Defense and national power are public goods, and, in principle, larger countries can provide better and cheaper security for their citizens. In a more bellicose world, larger, more centralized countries may be at an advantage, whereas a reduction in international conflict reduces the incentives to form larger political unions. However, 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 lower role for defense and security, by bringing about the formation of more numerous countries, may paradoxically increase the number of observed conflicts in the world, because, even if the use of force is less likely in each specific international dispute, the higher number of countries raises the probability that some of those countries may enter into a military confrontation. For example, 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. In sum, a reduction in global conflict between larger political units may lead to an increase in more localized conflict between smaller political units. Analogously, improvements in the enforcement of national "control rights" through a more effective rule of international law will reduce the need for defense and force, and may therefore cause breakups of nations, possibly leading to more rather than less conflicts in equilibrium (Alesina and Spolaore, 2005). In more recent work, Spolaore (2008) has provided a formal analysis of endogenous border formation when secessions are the direct outcome of civil conflict between two regions within a unified country. In that context, total spending on civil-conflict inputs and the probability of secession are endogenous variables, which depend on the incentives to secede and on the incentives to oppose a secession. Such incentives depend on heterogeneity costs (associated with different preferences over the type of government), economies of scale in the provision of public goods, and the relative size of the two regions. In particular, separatist conflict tends to be more intense when the two regions are of roughly equal size, consistently with the empirical literature on civil and ethnic conflict (see Horowitz (1985) and,Collier (2001)). As we have seen, a special case of economies of scale from a larger size stems from the provision of defense and security against external threats. Interestingly, external threats do not necessarily reduce the intensity of separatist conflict within a country, because, while they reduce the incentives to secede in the smaller region, they also increase the larger region's incentives to resist the smaller region's secession, and may therefore lead to more diversion of resources towards civil conflict in the aggregate. Finally, the possibility that civil conflict about government policies may occur also *after* borders have been determined reduces both the incentives to secede in the smaller region and the benefits from union in the larger region. In fact, as also shown in Spolaore (2008), it is even possible that the perspective of civil conflict over government policies (within a unified country) may induce the "center" itself to prefer a country breakup.

In summary, recent research on the political economy of national borders points to the following conclusions:

(1) Large national unions come with substantial costs as well as benefits.

(2) Democratization, globalization and reduction in international conflict are associated with the formation of smaller countries.

(3) Up to a point, the breakup of countries can be efficient and welfare-improving.

(4) However, these trends may also lead to inefficient fragmentation and costly civil conflict, in the absence of appropriate mechanisms for compensation of regions and groups that are far from the central government in terms of preferences over public policies.

These considerations raise two related questions. First, what kind of compensation and redistribution across regions could ensure efficient and stable borders? Second, would direct decentralization of power reduce the incentives for breakup and conflict? We will discuss these two issues in the rest of the chapter.

3 Interregional redistribution as a double-edged sword

As we have mentioned in the previous section, inefficient breakups and secessions may occur when borders are determined democratically. Voters with preferences that are "far" from the central government bear higher heterogeneity costs from living in a larger, more diverse country, and may decide to form a smaller, more homogenous political unit when they perceive that such heterogeneity costs are higher than the scale economies associated with a larger size. Such breakups may lead to a lower sum of everybody's utilities (inefficiency), so that, in principle, everybody could be better off in a unified country, given appropriate transfers from the center to the periphery. Inefficient outcomes occur under the assumption that there is no redistribution of resources across regions: all citizens contribute equally to the public good, independently of their location. An important question is whether actual interregional redistribution of resources may change the voters' calculation and affect the stability of national borders. The response depends on a crucial distinction between two kinds of interregional transfers: (1) preference-based transfers, and (2) income-based transfers. Preference-based transfers are payments to regions that are "distant" from the central government in terms of preferences over public policies. In contrast, income-based transfers are redistributive transfers from richer regions to poorer regions, based on income differences. These two different kinds of transfers have very different properties and effects on border stability. We will examine them in order.

3.1 Preference-based transfers and country stability

Conceptually, preference-based transfers can be viewed as "side payments" to regions that are distant from the central government in terms of preferences over public policies. In principle, as we have already mentioned, such transfers could compensate regions that would otherwise secede, and therefore ensure efficiency and stability.[5] The theoretical rationale is straightforward: if a country breakup is inefficient, it means that the sum of everybody's utilities is lower after a breakup. Then, one could transfer resources from those who would lose from a breakup (people "close" to the central government) to those who would benefit from a breakup (people "far" from the central government) such that, after the transfers, everybody (or at least a large enough majority) would be better off in the unified country, and therefore unity (with transfers) would be preferred over a breakup in a democratic equilibrium. In theoretical contributions, transfer schemes as means to prevent secessions and implement efficient borders have been studied by Alesina and Spolaore (1997, 2003), Le Breton and Weber (2003), Haimanko, Le Breton and Weber (2005), and others. For example, Le Breton and Weber (2003) explore the case in which a nonlinear transfer scheme can prevent unilateral secessions in a country of optimal size. In the case of linear utility from consumption, an efficient solution could be achieved by majority voting if taxes could be set according to a full-compensation formula, according to which individuals who are far from the government pay lower taxes as compensation for the heterogeneity costs they suffer. In principle, by appropriately lowering the taxes of individuals in proportion to the political costs they bear, the government can ensure that all voters end up with identical utility levels. However, are preference-based preferences observed in practice, and do they work?

There is some anecdotal evidence that border regions with different preferences and ethnic/linguistic/cultural characteristics from the rest of a country sometime receive a relatively favorable fiscal treatment. These cases include special-status regions in Italy, Northern regions in Sweden, some provinces of Canada and Argentina, etc. However, in general pure preference-based transfers seem to be relatively rare. There are several reasons why, in practice, preference-based redistribution across regions is unlikely to be widespread: (a) feasibility and administrative costs; (b) political credibility; and (c) incompatibility with other social goals. We will briefly discuss each of these issues separately.

Preference-based transfers may be very expensive to implement because of administrative costs and distortions. The preferences on which those transfers must be based are defined in terms of individuals' utility or disutility from belonging to countries with different characteristics – including cultural, linguistic and religious characteristics. Consequently, a large part of those costs and benefits are non-pecuniary, and very hard to observe and measure objectively. And even if those heterogeneity costs could be perfectly observed or 'revealed,' redistributive schemes to compensate for them are likely to require an expensive administrative setup, implying high taxes and tax distortions (disincentives to work, save and invest). In summary, preference-based transfers may be either unfeasible or economically costly.

Even if one abstracts from issues of feasibility and administrative costs, the implementation of preference-based transfers may face a more subtle obstacle: political credibility. Suppose that a region is enticed to remain within a larger country with the promise of a more favorable tax treatment. Once the region has accepted to remain within the country, the central government can break its promises. Borders are hard to change, whereas taxes and transfers can be changed more often and more easily. Consequently, regions that accept to be part of a given country face the risk that tax and transfer policies may be changed in the future, when the option of secession is no longer available, or available only at a much higher cost. In other words, for preference-based transfers to be politically credible, the threat of secession must be persistent and credible. Alternatively, preference-based transfers must be backed by some other credible "commitment technology" - for example, an international treaty protecting the country's minority. An example of international guarantee for a minority region is the 1971 treaty between Italy and Austria about the German-speaking Italian province of Bozen/Bolzano, following serious separatist disturbances (including some acts of terrorism) in the 1960s. The 1971 treaty stipulated that the province of Bozen/Bolzano should receive greater autonomy within Italy, including significant fiscal autonomy, and that disputes in the province would be submitted for settlement to the International Court of

Justice in The Hague.

Haimanko, Le Breton and Weber (2005) show that even in the absence of an appropriate commitment technology, linear transfer schemes can be supported by a majority of the population in polarized societies in which the median distance from the government is higher than the average distance. However, even in this case, there is no assurance that the feasible redistributive mechanism will enforce efficient borders. In some circumstances, preference-based redistribution decided by majority voting will even imply excessive transfers to the periphery, and induce the center to secede!

Finally, even if preference-based transfers were perfectly feasible and credible, they might still face political obstacles because they may clash with other social and political objectives. Since preference-based transfers, by definition, abstract from income differences, they may imply substantial transfers of resources from poorer to richer regions and individuals. This may conflict with goals of "interpersonal equity" or other social objectives and constraints, therefore making a preference-based redistributive scheme difficult to implement politically.

3.2 Income-based transfers

In contrast to preference-based transfers, income-based transfers are widespread and much easier to implement and maintain economically and politically. However, their efficiency properties and effects on country stability are quite different from those of preference-based transfers.

Unlike preference-based transfers, income-based transfers are much more likely to play a "centrifugal" role, by adding to the costs from interregional political heterogeneity (different political preferences over public policies) when there is substantial income inequality across regions. Income-based interregional transfers can help keep poorer regions "in" if their political heterogeneity is not too high. That is, income-based transfers from the center to the periphery might accidentally operate as a compensation mechanism and help keep some regions within a country. However, in general these transfers will not ensure optimality or stability of borders, since there is no guarantee that poorer regions would be those farther from the central government in terms of preferences for public policies and types of government. On the contrary, it is at least as likely that income-based redistribution would *add* to heterogeneity costs within a country, by generating an additional source of political conflict across regions, and providing additional incentives for richer regions to secede. In fact, even in the absence of any other form of preference heterogeneity, interregional disagreements over income-based redistribution may be sufficient to induce country breakup. For example, in their pioneer analysis of the relationship between income-based transfers and country stability, Bolton and Roland (1997) studied a model of country breakup by majority vote when individuals differ in productivity and income, but not in preferences over types of governments. In Bolton and Roland's model differences in income distributions across region are at the roots of all differences in preferences over public policies, and may generate incentives to break up, even in the absence of other forms of heterogeneity. More generally, as shown in this literature (Bolton and Roland, 1997; Alesina and Spolaore, 2003, chapter 4), income-based redistribution has three effects on the incentives to secede in a given region: (i) a political effect, capturing the difference in desired fiscal policy between the region's median voter and the median voter in a unified country; (ii) a tax-base effect, capturing the difference between average income in the region and in the unified country, and (iii) an "efficiency/economies of scale" effect, capturing a reduction in average income because of country breakup (for example, because of a smaller extent of the market when there are barriers to trade across nations, consistently with the results about international openness mentioned in Section 2). Unless the regional median voter shares identical preferences with the national median voter (which is unlikely), the political effect is always centrifugal: any region would prefer to breakup and implement its own favored fiscal policy, other things being equal. In contrast, the tax-base effect is centrifugal for richer regions (which, therefore, are more likely to prefer separation, other things being equal), and centripetal for poorer regions, which benefit on average from income-based redistribution. Finally, the economies-of-scale effect is centripetal for all regions - that is, it reduces the incentives to breakup. Consequently, when the economies-of-scale effect is small (say, because of high international openness and/or a reduction in the economies of scale associated with the provision of defense), richer regions become much more likely to prefer separation, given effects (i) and (ii), and even poorer regions may prefer separation, when effect (i) dominates effect (ii). The bottom line is that, on balance, income-based redistribution is likely to play a centrifugal role - i.e., to reduce the stability of national borders.

In conclusion, the relationship between redistribution and country stability can be summarized as follows:

(a) In principle, well-designed interregional transfers could ensure country stability, but they would have to compensate regions with more heterogeneous preferences with respect to the central government, rather than be based on income differences.

(b) In practice, such "efficient" compensation schemes based on preferences are difficult to implement both economically and politically.

(c) In contrast, most interregional redistribution is based on income differences across regions, and such income-based transfers are likely to play a centrifugal role when incomes differ substantially across regions.

(d) Consequently, actual interregional redistribution is likely to be destabilizing.

As follows from our discussion in Section 2, an important point to stress is that the (centrifugal) effects of interregional redistribution on country stability depend on how centralized political power is within the country. The higher the degree of political centralization, the higher the heterogeneity costs for the periphery, and therefore the higher the pressure to compensate regions with diverse preferences, and the larger the centrifugal effects when those transfers fail to work, or even end up adding to the heterogeneity costs. This raises a key question: since compensations and transfers are unlikely to work as efficient side payments, can country stability be enhanced by a direct transfer of *power* from the center to the periphery? What if central governments attempt to keep regions together using not only interregional transfers but also direct decentralization of public functions, including federal power-sharing? This will be the subject of the next section.

4 Do decentralization and federalism promote country stability?

If the incentives to secede depend on the political costs from belonging to a larger, more heterogeneous country, more power to the periphery can reduce the periphery's heterogeneity costs from staying in a union, and hence the net benefits from secession. Therefore, decentralization and regional autonomy, in principle, can promote country stability - in other words, decentralization can have centripetal effects. This is the more intuitive effect of decentralization, and has received considerable attention in the politico-economic literature. However, a few commentators have pointed out to possible centrifugal effects from decentralization as well, if more power to the periphery also increases local governments' capabilities and resources, therefore enhancing their ability to secede. In a nutshell, decentralization may reduce a peripheral region's willingness to secede while increasing its ability, with ambiguous net effects.

In this Section we will briefly review a few arguments in favor and against the stabilizing role of decentralization and federalism. We will then present a simple analytical model that captures those opposite effects. Finally, we will discuss some recent empirical contributions that shed some light on this complex issue.

4.1 Federalism and decentralization: centripetal or centrifugal forces?

The idea of decentralization and federalism as a way to preserve diversity in a democracy has a long pedigree. For example, in 1764 Cesare Beccaria wrote:

> To the extent that society increases, each member becomes a smaller part of the whole, and the republican sentiment becomes proportionally smaller, if the laws do not take care to reinforce it. Societies, like human bodies, have their circumscribed limits, and if they grow beyond them their economy is necessarily disturbed. The size of a state must necessarily be inversely proportional to the sensitivity ['sensibilità'] of those who comprise it ... A republic that is too vast cannot save itself from despotism except by subdividing itself and uniting itself into so many federative republics.

Similar ideas about the role and limits of federalism in reducing the risks of instability and despotism (including a possible "tyranny of the majority") can be found in the exchanges between Federalists and Anti-federalists in eighteenth-century America.

More recently, a number of political scientists have emphasized the positive effects of federalism on country stability. As Bakke and Wibbels (200) summarize "The theoretical justification for federalism, or decentralization, is based on the combination of shared rule and self-rule: federalism offers the potential to retain the territorial integrity of the state while providing some for of self-governance for disaffected groups." The benefits of regional autonomy as a "power-sharing approach" are emphasized by Lijphart (1990), while the positive effects of checks on the central government associated with federalism are stressed by Weingast (1995) and others. More recent work emphasizing the "peace preserving" nature of federalism includes Bermeo (2002), who argues that federal states tend to do better than unitary states when accommodating ethnic conflict and minority discrimination.[6] Commentators who stress the benefits of federative arrangements for diverse, multiethnic societies also rely on case studies of "successful" federations, such as Switzerland and, to some extent, Canada, India and South Africa.[7]

However, less successful cases of federations and attempts to decentralization have provided counterarguments against federalism as a stabilizing force. For example, the Civil War in the United States has been viewed by many as an instance when federal decentralization provided the means and mechanisms for a costly attempt to secede. Power decentralization and federal arrangements are also "blamed" by some for the breakup of the Soviet Union, Czechoslovakia, and Yugoslavia.[8] Criticisms of the costs of fiscal federalism and decentralization in Argentina are provided by Saiegh and Tommasi (1999) and Spiller and Tommasi

(2003). A particularly extreme case of "centrifugal" and destabilizing effect of decentralization is associated with the creation of a safe haven for guerrilla rebels (FARC) in Colombia in the late 1990s. Criticism of decentralization as a destabilizing force leading to civil conflict has also been aired with respect to recent reforms in a few African countries (for example, Nigeria).

In sum, the political and historical literature is mixed. A majority of commentators views federalism and decentralization as stabilizing forces, but some critics stress counterexamples in which decentralization seems to be associated with increasing country instability.

Below we provide a simple analytical model that clarifies conceptually the interplay between centrifugal and centripetal effects of decentralization and federalism. Empirical contributions are briefly discussed at the end of this section.

4.2 A simple model of decentralization and country stability

Consider a country in which the government provides a continuum of public goods, indexed from 0 to 1.[9] Some public goods are provided by the central government, while some others are provided by the periphery's own local government. The periphery's citizens obtain net utility equal to g from each public good provided locally, while the net utility from a centrally-provided public good is equal to $g-h+k$, where h measures heterogeneity costs associated with central provision of the public good, and k captures net economies of scale from central provision.[10] Since we are interested in the study of potential secessions, we focus on the case when heterogeneity costs are higher than economies of scale ($h > k$), and therefore the periphery would prefer decentralized provision of *all* public goods (i.e., full independence). Let δ measure the proportion of locally provided public goods - that is, the degree of decentralization. In general, for a given degree of decentralization δ, the periphery's utility from public goods is given by

$$U_\delta = \delta g + (1-\delta)(g - h + k) \tag{1}$$

which is maximized at $\delta = 1$ and $U_{\delta=1} = g$ (full independence). Now, assume that the periphery can choose whether to attempt a secession or remain within the unified state. If the periphery does not attempt a secession, its citizens' utility is given by U_δ. If the periphery attempts a secession, two outcomes are possible. With probability π the secession is successful, the periphery gains full independence, and utility from public goods becomes $U_{\delta=1} = g$. With probability $1 - \pi$ the secession fails, and the periphery ends up with a lower utility $U_f < U_\delta$.[11] To fix ideas, let C denote the cost from a failed secession, so that[12]

$$U_f = U_\delta - C \tag{2}$$

The periphery obtains higher expected utility from attempting a secession than from the status quo if and only if

$$\pi g + (1 - \pi)(U_\delta - C) > U_\delta \tag{3}$$

which can be re-written as

$$S \equiv \frac{\pi}{1 - \pi}(1 - \delta)(h - k) > C \tag{4}$$

where the left-hand side of the above inequality measures the "incentives for the periphery to secede," which we denote with S. When the incentives to secede S are higher than the cost from a failed secession C, the periphery will attempt secession. Not surprisingly, the incentives to secede S are increasing in the heterogeneity costs h and decreasing in the economies of scale k, consistently with the theory of national borders reviewed in Section 2. But what about decentralization? The above equation shows that, *for given* π, a higher degree of decentralization δ *reduces* the incentives to secede. This is the intuitive, direct effect of decentralization on the incentives to secede: by decentralizing the supply of public goods, the central government can reduce the extent of heterogeneity costs from centralized public-good provision, and hence lower the incentives for the periphery to breakup. However, as we discussed above, decentralization may indirectly affect the probability that the secession may succeed, if attempted - that is, π might be itself an (increasing) endogenous function of δ. In order to illustrate this point more specifically, let's assume that π can be expressed in terms of a "contest success function," increasing in the periphery's capabilities F_p (i.e.,inputs that can be used in conflict), and decreasing in the center's capabilities F_c. That is, we have $\pi = \pi(F_p, F_c)$. To fix ideas (and simplify the algebra), consider for instance a logistic specification in which the odds of success for the periphery depend on the difference between its own conflict capabilities F_p and the center's conflict capabilities F_c, according to the following equation[13]

$$\frac{\pi}{1-\pi} = \exp\{\phi(F_p - F_c)\} \tag{5}$$

where the parameter ϕ captures the "effectiveness" of conflict inputs. It is reasonable to assume that decentralization will increase the periphery's resources in case of conflict, and reduce the center's. Specifically, assume that, in addition to some exogenous additional resources F_{c0} and F_{p0}, center and periphery can access some common pool of resources R, in proportion to the fraction of public goods they control, so that $F_p = F_{p0} + \delta R$ and $F_c = F_{c0} + (1-\delta)R$.[14] Then we have

$$\frac{\pi}{1-\pi} = \exp\{\phi[F_{p0} - F_{c0} - (1-2\delta)R]\} \tag{6}$$

implying that an increase in decentralization δ will be associated with higher odds of success for a secession, and henceforth a larger S, other things being equal.

In other words, this indirect effect of δ on π increases the incentives to secede, and can offset the direct effect of δ on S. In general, by substituting (6) into

(4) and taking the derivative of S with respect to δ, we have

$$\frac{dS}{d\delta} = \frac{\pi}{1-\pi}(h-k)[2\phi R(1-\delta)-1] \tag{7}$$

which implies that decentralization will reduce the incentives to secede ($\frac{dS}{d\delta} < 0$) if an only if $2\phi R(1-\delta) - 1 < 0$, or, equivalently, if and only if decentralization δ is above a given threshold δ^*

$$\delta > \delta^* = 1 - \frac{1}{2\phi R} \tag{8}$$

In other words: more decentralization will *reduce* the incentives to secede if and only if decentralization is high enough ($\delta > \delta^*$). In contrast, at low levels of decentralization (that is, when $\delta < \delta^*$), more decentralization will *increase* the incentives to breakup. The critical value depends on the parameter ϕ, which measures the effectiveness of "conflict inputs." Not surprisingly, the threshold above which decentralization has stabilizing effects is *higher* in societies where the difference in capabilities has a bigger effect on the probability of success. On the other hand, when "force" has less impact on outcomes, decentralization is more likely to imply *more stable* polities. This can be interpreted in terms of a key role for the political and institutional environment where a potential secession may occur: an increase in decentralization is more likely to have a *positive* effect on country stability in societies in which political institutions and societal characteristics ensure that conflict capabilities are less effective at determining national borders. Moreover, for given effectiveness of capabilities, an increase in decentralization is more likely to have a stabilizing effect in societies that are already highly decentralized, whereas it may have a centrifugal effect in more centralized societies.[15]

While the specifics of these results depend on highly simplifying assumptions and functional forms, the message of the analysis is quite general: the effects of decentralization on country stability are analytically ambiguous because decentralization has two opposite effects: it reduces the net payoff from a secession, but, on the other hand, it may increase the probability of success should a secession be attempted. In general, the net outcome will depend on the complex interplay of those different forces, and it is possible that, especially at *low* levels of decentralization, the destabilizing effect may dominate the stabilizing effect, with the critical threshold depending on the political-institutional setting in which conflict takes place.

4.3 Federalism and country stability: what do the data say?

As our highly simplified model illustrates, the effects of decentralization on country stability are ambiguous. In general, the relationship between decentralization and country stability may go either way, depending on the interplay between centripetal and centrifugal effects in different societal, political and institutional environments. This makes it even more urgent to study these issues from an historical and empirical perspective. What do the data say? Are more decentralized countries and federations more or less stable? Unfortunately these are not easy questions to address empirically, because of several practical and conceptual issues that arise when we attempt to measure the relevant variables and interpret their links.

A first problem is how to define and measure decentralization. As Bird (1993) notices, "decentralization seems often to mean whatever the person using the term wants it to mean." Different studies use a vast range of definitions and measures for decentralization, devolution, and degree of federalism. Secondly, it is even harder to come up with good measures of "country stability." Actual breakups and secessions, while not infrequent, are relatively rare. Moreover, secessions per se do not necessarily reflect an institutional failure, if the redrawing of borders is peaceful, consensual and efficiency-enhancing. Measures of "negative" outcomes (armed conflict, rebellions, protests) associated with ethnic and civil conflict may capture more directly some of the costs usually associated with border instability. More generally, as we have seen, the ability to mediate conflict within countries and to reduce potential heterogeneity costs is associated with the general effectiveness of political institutions, which can be measured in terms of orderly transfer of power, protection of political rights, etc.

Even if decentralization and country stability were to be measured appropriately and unambiguously, a third issue would be how to identify causality. For example, a positive correlation between having a more decentralized regime and observing ethnic conflict would *not* demonstrate that decentralization causes ethnic conflict, or vice versa. In fact, consistently with a political-economy approach to national borders, more heterogenous societies are likely to be more decentralized (because of higher demand for autonomy) and also more prone to ethnic conflict (because of higher heterogeneity and higher demand for additional sovereignty), without a necessary causal link going directly from decentralization to ethnic conflict. Historically, while several countries that eventually broke up were indeed federations (e.g. the Soviet Union and Yugoslavia), did they break up *because* they were federations, or were they shaped as federal systems because they were formed by heterogeneous regions and groups to start with? Given the endogeneity of the institutional system and the complexity of circumstances associated with successful or unsuccessful secessions and breakups, it is intrinsically difficult to disentangle the causal links between decentralization and the stability of federations.

A very interesting attempt to assess the relation between decentralization and ethnic conflict is provided by Bakke and Wibbels (2006), who focus on differences across federal states. Intriguingly, they find that fiscal decentralization increases the likelihood of ethnic conflict when there are wide disparities in income across regions. This is consistent with the view that heterogeneity of preferences and differences in income interact as sources of potential country instability, and may offset the beneficial effects of decentralization. However, these results do not imply that governments faced with high ethnic heterogeneity and economic inequality across regions should move *away* from decentralization and federalism. On the contrary, the positive correlation between decentralization and ethnic conflict in the presence of income inequality may reflect the fact that economically diverse federations prone to ethnic conflict may indeed *need* more decentralization, the same way that individuals prone to disease need and use more doctors and medicine. Taking decentralization away from those countries may be as unwise as taking doctors and medicine away from patients because those variables (medicines and doctors) are usually observed in conjunction with sick people and disease!

A recent empirical analysis of the effects of federalism that attempts to control for endogeneity is provided in Inman (2008). In this study Inman compares 73 federal and non-federal countries, and finds positive economic and political effects of federalism in democracies, but not in dictatorships. The positive effects of federalism include more orderly transfer of executive power, better protection of civil and political rights, and less corruption (see also Fisman and Gatti, 2002). Inman attempts to address the issue of endogeneity and causality by using instrumental variables (country land area, number of provinces, and provincial representation to the central government), and by limiting the sample to countries whose current constitutions were established before 1950. As one may expect, it is very difficult to find appropriate instruments that are both exogenous and affect the dependent variables (in this case, various measures of political and economic performance) only through federalism. One may indeed take issue with the validity of those instruments - for instance, the number of provinces itself is probably endogenous, and one could argue that the characteristics that determined which countries adopted federal constitutions before 1950 may also affect political and economic outcomes of interest today. Nonetheless, Inman's analysis is a valuable first step towards assessing the causal effects of federalism on important political and economic variables, and sheds insight on the positive correlation between democratic federalism and a range of important outcomes. However, a comprehensive empirical analysis of the effects of federalism and decentralization on the stability of states and federations remains an important task for future research.

5 Conclusions

In this chapter we have reviewed some ideas and results from the recent economic literature on the formation and breakup of sovereign states. We have shown how the political-economic analysis of national borders points to a potentially stabilizing role for interregional redistribution and decentralization. However, we have also discussed several reasons why, in practice, we should be skeptical about the extent to which interregional transfers can actually reduce regional conflict and potential separatism, especially when there are large "heterogeneity costs" across regions, because of cultural, linguistic and/or economic differences. In fact, actual income–based regional redistribution, especially when interacting with ethnic and cultural diversity, is likely to increase interregional conflict and separatism. We have also argued that federalism and decentralization raise the periphery's benefits from political union, but also its ability to secede, with ambiguous effects on country stability. Empirically, decentralization within federal states is associated with more ethnic conflict when economic inequality is high across regions. However, the evidence also suggests an overall positive effect of federalism and decentralization on political and economic outcomes, when accompanied by strong democratic institutions.

Notes

[1] For instance, according to Dillinger (1994), 63 out of 75 developing countries with population greater than 5 million claimed to be transferring fiscal authority from central to local governments.

[2] For example, see the references in Dahl and Tufte (1973).

[3] See Alesina and Wacziarg (1998) and Alesina and Spolaore (2003, chapter 10).

[4] See Alesina, Spolaore and Wacziarg (2000; 2004) and Spolaore and Wacziarg (2005).

[5] See Alesina and Spolaore (2003, chapter 4) and Le Breton and Weber (2003).

[6] See also Lake and O'Mahony (2004).

[7] For instance, see Inman and Rubinfeld's (2006) analysis of democratic federalism in South Africa. I thank the discussant, Massimo Bordignon, for this reference.

[8] For example, see Roeder (1991) and Suny (1993).

[9] For simplicity we abstract from the level of provision, and assume that all public goods are provided in fixed amounts.

[10] For simplicity, here we assume that the parameters g, h and k are identical across all public goods. The model could be extended to allow for different public goods to provide different net utilities in terms of benefits, heterogeneity costs and economies of scale, as in Alesina and Spolaore (2003, chapter 2)..

[11] If $U_f \geq U_\delta$, the periphery would have nothing to lose should the secession fail, and would always attempt to secede, no matter how small π.

[12] For simplicity, we assume that C is exogenous and does not depend on δ.The model could be extended to allow for C to depend on δ (for example, if a failed secession were to bring about a reduction in the degree of decentralization, compared to the *status quo ante*).

[13]This specification, discussed in Hirshleifer (1989), is commonly used in the economic literature on conflict and appropriation. An alternative specification, based on ratios, would be $\pi = \dfrac{F_p^\phi}{F_p^\phi + F_c^\phi}$. For a discussion of alternative specifications to model separatist conflict see Spolaore (2008).

[14]For simplicity, we assume that F_{c0} and F_{p0} are exogenous. However, in general the center and the periphery might invest resources to increase their capabilities (as in Spolaore, 2008), in addition to the resources that come from control of public-good provision. Such extension is left for further research.

[15]Of course this is under the assumption that the degree of decentralization δ is given. An interesting extension would involve endogenizing δ, either as a decision of the center, or as the outcome of a political game between the center and the periphery. Even in that more complex setting, we should expect that decisions regarding δ would be affected by the balance between decentralization's centrifugal and centripetal effects.

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