Decentralization, Development Assistance
and the Danger of Secession

A Simple Model and Some First Results

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Abstract

The paper suggests a model set in a spatial "Hotelling-world" to analyse the stability of states where existing regions can vote for secession and raises the question of the potential effects international aid money to poor countries can have in this context. It is shown that secessions may take place even where they reduce overall welfare, but that prudent decentralization policies can support the country's stability. Moreover, first steps are taken towards the derivation of policy recommendations for the international donor community.

I Introduction

Instability in Iraq as well as the unpredictable future of Afghanistan are two prominent cases bringing back to our mind that in recent years, the breaking-up of formerly stable and powerful nation states as well as the rise of nationalistic movements calling for secession of provinces the outside world had never heard of in almost all parts of the world has not only made us study the difference between, say, Adsharia and Abkhasia, but it has also raised many theoretical questions about what keeps states together and how secessions might be explained[1].

The model I elaborate on the following pages is a contribution to this debate. Like many other papers published in this context, it draws heavily from the framework provided by Alesina and Spolaore in their groundbreaking 1997 article. There are two important variations, however, concerning the way a secession takes place. Firstly, Alesina/Spolaore, who study the

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[1] For a discussion of the literature cf. Alesina/Spolaore (2003).

initial formation of countries, assume, that *any* group of (geographically connected) citizens can secede and form a country of their own[2]. In the more "mature" world investigated here, however, internal as well as external boundaries are seen as historically fixed, shifting the question from "who might secede" to "will they (a *given* regional entity) secede". This leads to a second variation of Alesina/Spolaore's framework: As in their world, borders are tailored to people's needs, only those willing to secede do so, and the new border is drawn – endogenously – between them and those who prefer to stay; secession is a matter of *consensus*. With exogenously fixed borders as assumed here, on the other hand, it may well happen that some inhabitants of a province want to become independent while others don't, and the decision is made by *majority rule*.[3] In this context I show that it is possible for a secession to take place although it may be inefficient in the sense that it reduces all-over welfare. Moreover, I look into the possibility of allowing the initial country to make a majority decision on decentralization.

Bearing the first result in mind, the paper is investigating a second question: If aid to poor countries is to be spent in a welfare maximizing way, how can it avoid the danger of triggering an inefficient secession? – Or, in a more general way: Which consequences follow for development policies of multilateral donors like e.g. the World Bank if secessions are to be avoided?

At the moment, this paper is work in progress, and especially on the second leading question only some straight-forward ideas are presented at the time being, which are still to be pursued more thoroughly. It is organized as follows: Part II lays out the basic model and shows the conditions for inefficient secessions to take place. Part III sheds light on the decision making process if a majority can opt for decentralization in the wake of a secession threat. Part IV draws lessons for donors who want to prevent secessions (and, first of all, who want to identify regions which are likely to secede). Part V is not a conclusion but an intermediate assessment on what has been achieved already and which further steps are to be taken in this investigation.

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[2] Cf. Alesina/Spolaore (1997) and Alesina/Spolaore (2003), p 44f.

[3] Many secessions of recent times have been subject to democratic decision making, for example the secessions of Ukraine and Slovakia in 1992 or the proposed one of Quebec, which in 1995 was dismissed only by a majority of 51 per cent. This often has led to fragmented new states, Ukraine (comprising "Russian" Charkiv and Crimea) and Croatia (including initially Serbian dominated East Slavonia and Krajina) being striking examples. – For an interesting analysis of this minority issue see Olofsgård (2003).

II The basic model

As widely accepted in the literature, let us assume a correlation between regional and political assignment of citizens – in other words: Within a country, citizens with similar political interests tend to live together, and more radical ones have the potential to propose a secession (usually because they live along the borders). This may not always be true, but there definitely is evidence of such a correlation at least for some political issues at least in some countries.

As in Alesina/Spolaore (2003), the world is modelled as a one-dimensional segment of length 1. World population has mass s and is distributed evenly along the "world". For the sake of simplicity of the model, all citizens have similar utility, which they derive from a private good x (that they can purchase at price 1 per unit) and a public good g, which the government provides at price k. To pay for the public good (which is identified here – again as in Alesina/Spolaore (2003) – with "government" in a very general sense), a proportional tax $\tau = k/sy$ is levied on citizens' income y. Finally, (immobile) citizens incur a "disutility of distance" al proportional to their distance l from the location of the public good. Therefore, utility of citizen i living in a unitary state of size s is given as

$$U_i^s = g - al_i + \left(1 - \frac{k}{sy}\right)y \tag{1}$$

Now let's imagine that the world is divided into two regions A and B of size z and s-z respectively, A is assumed to be the smaller region ($z<s/2$), and – for now – citizens receive the same income y, no matter where they live. If a majority of region A's citizens derives higher utility from splitting the region off and founding a new state, region A will secede at per capita cost of σ. Afterwards, "policy" (here: the location of the public good) is decided upon by majority vote either in the world as a whole or, in case of secession, in each of the separated regions, and it is assumed that each region will have to provide a full public good of its own[4].

It is straightforward that the public good will be located in the middle of any state, either at s/2 or at z/2 and (s-z)/2.

While for the voters between z/2 and z a secession is less favourable than for the potentially new median voter (as they gain less in terms of distance reduction), it is important to note that

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[4] This is in line with Alesina/Spolaore's model who argue that every country needs one government; cf Alesina/Spolaore (2003), p 33.

all voters between 0 and $z/2$ go along with the voter at $z/2$ in their secession decision, as their utility differs from his only by the constant $az/2 - i$, whether the secession takes place or not. Let in the following be $s=1$. The voter at $z/2$ (and half the region with him) opts for secession if (and only if)

$$U_{\frac{z}{2}}^{s=1} = g - a\left(\frac{1}{2} - \frac{z}{2}\right) + \left(1 - \frac{k}{y}\right)y < U_{\frac{z}{2}}^{z} = g + \left(1 - \frac{k}{zy}\right)y - \sigma \tag{2}$$

which leads to the secession constraint

$$\frac{a}{2} > \frac{k}{z} + \frac{\sigma}{1-z} \tag{3}$$

For simplicity, let's assume for now that $\sigma=0$. In this case, equation (3) can easily be rearranged to

$$2\frac{k}{a} < z \tag{3'}$$

If equation (3') holds, region A opts for secession. Is that good news or bad news? – From a welfare maximizing standpoint, there is no general answer. If average utility increases, a secession is favourable, in formal language if

$$\overline{U}^{s=1} = g - \frac{a}{4} + y - k \le \overline{U}^{z;1-z} = g - \frac{a}{4}\left(1 - 2z + 2z^2\right) + y - 2k \tag{4}$$

So here's the *efficient* secession constraint:

$$2\frac{k}{a} \le z - z^2 \tag{5}$$

As $z>0$, any efficient secession will take place, but *not any secession that is approved by majority vote is necessarily efficient*. There may be many reasons why international policy makers try to stabilize states and to keep countries together. As we have just seen, in some

cases at least one reason may be that over-all welfare would decrease in the event of a secession.

III Income inequalities and the possibility of decentralization

Let us make a little modification to our basic assumptions now and allow for differences in income across regions. Utility in general changes to

$$U_i^s = g - al_i + \left(1 - \frac{k}{zy_A + (s-z)y_B}\right)y_j; j = A, B \qquad (6)$$

The voter at z/2 will now opt for secession if and only if

$$U_{\frac{z}{2}}^{s=1} = g - a\left(\frac{1}{2} - \frac{z}{2}\right) + \left(1 - \frac{k}{zy_A + (1-z)y_B}\right)y_A < U_{\frac{z}{2}}^z = g + \left(1 - \frac{k}{zy_A}\right)y_A - \sigma \qquad (7)$$

and the secession constraint becomes

$$\frac{a}{2} > \frac{k}{z + z^2\left(\frac{y_A}{y_B} - 1\right)} + \frac{\sigma}{1-z} \qquad (8)$$

or, if secession cost σ is kept at 0,

$$2\frac{k}{a} < z + z^2\left(\frac{y_A}{y_B} - 1\right) \qquad (8')$$

It is obvious that region A is more likely to secede as it becomes wealthier relative to region B – the reason for this is the inter-regional redistribution taking place through the tax system. This being kept in mind, in a next step decentralization can take place: the public good is split into two parts which add up to g, but while the first part, θg, is still provided at the federal (or "world") level, the second part, $(1-\theta)g$, is taken care of by each region, where it is produced as a local public good. While the public good level consumed by every citizen remains fixed, the

disutility from distance is reduced. On the other hand, however, the over-all production of the public good must increase as its decentralized share must be provided twice.

For a given level of θ, region A's median voter now asks himself whether

$$U_{\frac{z}{2}}^{s=1} = g - \theta a\left(\frac{1}{2} - \frac{z}{2}\right) + \left(1 - \theta \frac{k}{zy_A + (1-z)y_B} - (1-\theta)\frac{k}{zy_A}\right)y_A < U_{\frac{z}{2}}^z = g + \left(1 - \frac{k}{zy_A}\right)y_A - \sigma \quad (9)$$

(note that he doesn't incur any disutility from his distance from the local public good, as he is free to position it just where he himself is located).

This consideration leads to a second secession constraint with respect to θ: A secession is to be expected as soon as the first secession constraint (8) holds and

$$\theta > \theta^* = \frac{\sigma}{a\left(\frac{1}{2} - \frac{z}{2}\right) + k\left(\frac{y_A}{zy_A + (1-z)y_B} - \frac{1}{z}\right)} \quad (10)$$

In other words, by decentralizing (or: decreasing θ) any gathering secession threat can be dealt with. To avoid the somehow contradictory outcome of $\theta=0$, however, which would equal a secession without secession cost, it is assumed that θ can not fall beyond a fixed θ_{min}, which equals the plausible assumption that any federal state requires a minimum level of federal institutions. Therefore, any $\theta^*<\theta_{min}$ could trigger a secession.

But is a secession-preventing decentralization going to be put in place if θ is decided upon by majority rule? To answer this question, we have to look at a three-stage game. First, the level of decentralization is set at the federal level. Second, region A votes on secession, and – third – the positions of the public goods are determined.

Stage three has a straight-forward solution: any public good is going to be where the median voter is, which is in the middle of the area concerned. Knowing this, voters will check whether $\theta>\theta^*$. However, if this knowledge will lead a majority at the federal level to decentralize instead of triggering a secession is less straight-forward. To analyse this problem, the community of voters can be divided in seven sections:

A1	A2	A3	B1	B2	B3	B4
z/2		z	s/2		(s-z)/2	

Voters in section A1 agree with their median voter at $z/2$. If that voter is better off under secession than even at $\theta_{\min}$, he can secede in stage two anyway, so decentralization doesn't matter. Otherwise, he (and with him section A1) prefers $\theta_{\min}$ to any θ that would trigger a secession. Voters in section A2 are closer to $z/2$ than to $s/2$, so they might gain under secession, but always less than their region's median voter. So, if he prefers $\theta_{\min}$ to a secession, they will even more do so. Section A3 is closer to $s/2$ than to $z/2$, so for its voters there is no trade-off between an economic loss (through higher taxes) and a political gain (because of being closer to the public good), as their distance to the public good would grow under secession: in any case a secession makes them worse off, so they'd prefer $\theta_{\min}$ to any θ that might lead to a break-up of the country. The same holds true for inhabitants of sections B1 and B2, who would have to face a public good at $(s-z)/2$ if region A happened to disintegrate. As these five sections necessarily comprise more than half the population[5], as long as the median voter of region A does not plan to secede anyway, any "too high" level of centralization that would make the country fall into pieces is strictly dominated by $\theta_{\min}$. Therefore, as long as the potential for decentralization is sufficiently high, in the setting of the model proposed here any secession will be prevented by democratic decision-making[6].

IV Lessons for those who want to bring money in

So what can be learned for the international community in its attempt (which is assumed to be existent here) to make the world a better place? – Let's consider two basic ways aid can materialize: it can either increase income y in one of the regions (or both), as any subsidy to private goods does (from emergency food supply to the building of sewerage or the provision of books for local schools) or it can subsidize the price k of public goods, making "government" cheaper.

Equation (8) can be rearranged easily to look at how changes in these variables influence the likelihood of a secession:

$$k < \left(\frac{a}{2} - \frac{\sigma}{1-z} \right) \left[z + z^2 \left(\frac{y_A}{y_B} - 1 \right) \right] \tag{8''}$$

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[5] Dependent on the value of z, section A3 does not necessarily exist. This, however, does not influence the result of the considerations put forth here.

[6] This is in line with the results of Panizza (1998) who uses a model with a different utility function. Note that the results hold even in the case of a secession that would be welfare enhancing, so the outcome is not necessarily efficient (as is the case in LeBreton/Weber (2003), who study compensation schemes at the national level to prevent secessions).

As *a* and *z* are strictly positive, any increase of region *A*'s income which is not paralleled by an increase in *B*'s income by the same factor is making a secession more likely (if secession costs are not prohibitive, i.e. if $\sigma < \frac{a}{2}(1-z)$). Therefore, it is not helpful (in the context of this model at least) to try to calm secessionist movements by pouring money into the region in question. The result the most straightforward, however, is that, *ceteris paribus*, a reduction of *k* (which is equivalent to governments receiving unconditional aid money) makes a secession more likely.

Is help in sight? – As we learned from the discussion of decentralization in the presence of secession costs, decentralizing government activity is a strong means to get separatists under control, even if this means spending more money to achieve the public good level *g*. Although we derived that a majority of citizens will take this step on its own, in practice implementation of such policies might face difficulties not modelled here. Therefore, our considerations provide an additional rationale for international donors to support decentralization: More decentralization leads to more stability.

V Instead of a conclusion

The previous pages have outlined a model to study the probability of secessions in the context of the current economic discussion on state formation. Many points need further investigation, especially the ways in which international aid works are to be modelled much more precisely; relaxing the assumption of an evenly distributed population might also lead to more relevant results. Moreover, the fact that in the real world not every secession is prevented by willingly decentralizing national governments could not yet be explained in a satisfactory way. Therefore, it is probably worthwhile to assume that decentralization is costly – and that another policy option for donors is to sponsor these costs. Another interesting question might be whether inefficiencies caused by e.g. a lack of institutional congruency in the federal system affect the likelihood of a secession.

I hope that even at this early stage the ideas put forth have been worth taking the reader's time and raise interest for the problem discussed.

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