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Incentives for secession in the presence of mobile ethnic groups

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Abstract

This paper presents a model on secessions and nationalism, with special emphasis on the role of imperfectly mobile ethnic minorities. Individuals trade off political benefits of homogeneity against economic costs from increasing returns to scale in production. The main findings are: (i) Mobility decreases the political motivation for independence, because increased competition for labour forces the ethnic majorities in the separating countries to accommodate their policy. (ii) The impact of mobility depends on whether separation is politically or economically motivated. (iii) Increased mobility leads to a less accommodated policy in case of no separation.

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1. Introduction

The last decade has witnessed an increase in separatism across the world. The motives for separatism movements may vary, but ethnic nationalism has clearly been important in many cases. For instance, Bookman (1997, p. 153) argues that: '. . . most of the cases of secessionist activity that characterize the world in the 1990s are cases in which ethno-nationalism has taken on elements of ethnic

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separatism', and Gurr (2000) identifies 41 politically active groups that demand sovereign states on the grounds of a common nationality in 1998. To understand why a common nationality constitutes the foundation for separatism, note that a secession may be perceived as the only possibility for a politically dominated ethnic minority to freely practice its religion, use its mother tongue as the official language and officially make a claim on 'historical truth'. That is, independence is an instrument for the minority to gain the political power to decide on what is here labeled as 'nationalistic' policy.[1]

However, as pointed out by Horowitz (1985, p. 589): '. . . the only thing secession and partition are unlikely to produce is ethnically homogenous or harmonious states.' That is, separation is likely to create ethnic minorities within the new borders, and potentially a diaspora outside the borders. A natural question then is if the existence of these minorities and diasporas affects the incentives for separation in the first place. In this paper, I claim that their existence does indeed matter, and I build my argument on two assumptions. The first assumption is that there are economic benefits of a large population. This is an integral part of the recent economic literature on secessions, in which a trade-off between the political benefits of a better policy and the economic costs of a smaller population is decisive in the decision to separate. The origin of the economic costs has been modelled in different ways. For instance, Alesina and Spolaore (1997), assume that the economic costs are due to the existence of pure public goods, Bolton and Roland (1997) model the cost as a general loss of efficiency, while Alesina et al. (2000) assume barriers to trade in a framework with region-specific production of factor inputs and decreasing returns to scale in the production of the final good.[2] This paper assumes that labour benefits from increasing returns to scale in production, which creates a direct positive link between the size of the population and per capita production.

Increasing returns to scale create incentives against separation, but they do not in themselves give any role to the existence of ethnic minorities. The additional assumption that labour is mobile is therefore required. Differences across countries in policy, productivity and population size will motivate migration, with different groups potentially moving in different directions due to different policy preferences. Mobility gives raise to competition over labour input, so that citizens in the regions will try to attract more labour. Since this paper focuses on ethnic groups, individuals are assumed to be identical in preferences and endowments, except with respect to nationalistic policy. It follows that the only disposable instrument for attracting labour is the choice of this policy. Thus, if separation generates a

[1]The term nationalistic policy reflects that the divergence in preferences are mainly due to differences in ethnic origin, rather than differences in income, factor endowments, or any other dimension.

[2]For other contributions to the economic literature on secessions, see, for instance, Buchanan and Faith (1987), Casella (1992), Ellingsen (1998) and Le Breton and Weber (2000).

significant minority group, policy must be accommodated towards their preferences to prevent economically detrimental emigration. However, accommodation will decrease the political benefit of separation, thereby creating a direct link between the existence of mobile minorities and the probability of separation. On the other hand, separation may also create a diaspora in the rest of the country, that may be attracted by a more extreme policy. That is, in the presence of both a minority and a diaspora, the implications of mobility on the benefits of independence are less obvious a priori.[3]

The implications of mobile factors of production on the probability of separation have previously been explored in a seminal paper by Bolton and Roland (1997). In their paper, people's preferences vary over the optimal linear tax and transfer scheme, due to differences in wealth and labour skills. They consider the two polar cases of no mobility and perfect mobility of capital and labour, and find that differences across countries are smoothed out if both factors of production are perfectly mobile, thereby eliminating any incentives for separation. In this paper, I analyze the intermediary case with imperfect mobility, generating equilibria in which part of the minorities migrate while the rest remain in the diaspora. The benefit of this approach is that it generates interior equilibria in the migration stage and thereby allows for a comparative statics analysis of the consequences of marginal changes in the exogenous variables.

The paper is outlined as follows. Section 2 describes the setup of the model. Section 3 solves the model and discusses the comparative statics results in a framework where secession creates a minority in only one of the two countries. In Section 4, I allow for the possibility of a minority of each group in each country, and once again study the consequences of the choice of policy and the incentives for separation. In Section 5, I analyze the choice of nationalistic policy within the unified country, when the majority can avoid separation by accommodating the policy towards the preferences of the minority. In Section 6 some empirical predictions are highlighted and discussed in the context of the disintegration of the former Soviet Union, and Section 7 summarizes the major findings of the paper and briefly discusses its limitations.

2. The model

Consider a country with two regions, region A and region B, separated by a well-defined border. The total population is given by n, and is divided into two ethnic groups. Group a is initially concentrated in region A (subgroup n_a^A) and group b in region B (subgroup n_b^B), but part of each group lives as a minority in the

[3]For instance, as a consequence of the countries' break-ups, approximately 20 million Russians live outside Russia in the other newly independent states of the former Soviet Union, and approximately one third of the Serb population lives outside its home country.

other region (subgroup n_a^B and n_b^A, respectively). It is assumed that $n_a > n_b$. To simplify the modelling of politics, I assume that the minorities are 'small' relative to the majorities in each region, and that members of the majorities are immobile. Members of the minority groups are imperfectly mobile, with finite and heterogeneous migration costs (z) distributed according to the continuous uniform distributions $F_k(z)$, for $k \in \{a, b\}$, with positive support on the interval $[0, \gamma_k]$.[4] The parameter γ is a measure of mobility that affects the density at each point of the distribution for a given group size. A greater γ_k implies that both the mean value and the variance of the migration costs increase, and is therefore interpreted as a reduction in mobility.

Individuals in the model care about consumption of a composite private good, and the choice of nationalistic policy. The latter is modeled as a single-dimensional public good, with different groups preferring different types of policy, while the quantity is fixed.[5] The utility of the public good is specified as a decreasing function of the metric distance between the most preferred policy of the respective group, X_k, and the actual policy, X, according to $-(X_k - X)^2$. Without loss of generality, it is assumed throughout that $X_a > X_b$.

In order to treat mobility seriously, but still keep the model tractable and intuitive, I model the production technology in a very simple way. There is only one good in the economy, and labour is the only factor input. All individuals are endowed with one unit of labour which they supply inelastically, and the production technology exhibits increasing returns to scale. Wage income is given by the per capita production. Aggregate production in the unified country is given by $y(n)^2$, which gives a per capita income of yn, whereas aggregate production in case of separation is given by $y^J(n^{J*})^2$, which gives a per capita income of $y^J n^{J*}$, where $J \in \{A, B\}$. The region-specific productivity term y^J implies that labour productivity may differ across countries in case of separation. It follows that separation may be driven by economic concerns, if $y^k > y$, as well as political concerns.[6] Throughout the paper, the notation n^{J*} is used to represent the size of the population in country J, i.e. after migration decisions, whereas n^J is used to represent the size of the population in region J. The important consequence of the

[4]The migration literature offers a number of reasons why there are migration costs, and why these are heterogenous, such as differing opportunity costs, risk attitudes, the availability of migration networks or travel costs. The source of heterogeneity is not specified in this model, but what is important is that it is independent of the other variables in the model.

[5]This is also the approach in Alesina and Spolaore (1997). A difference though is that I do not specify the financing of this good, which means that I implicitly set the cost to zero. It is therefore, strictly speaking, more accurate to think of this as a publicly provided private good, since there would be an additional benefit from country size if it was a pure public good with a strictly positive cost.

[6]The specific case when $y^k > y > y^{-k}$ can indicate that there are implicit income equalizing tax and transfer schemes across regions. Separatism can then be motivated by the desire to stop transfers from the more productive region. This has for instance been the motivation behind separatism movements in Italy and Belgium.

increasing returns to scale technology is that per capita production increases with the size of the labour force, which implies that there is an economic cost to separation.

The model is a one-shot game and individuals live for one period only, which implies that consumption of the private good is equal to income. The utility function is assumed to be quasi-linear, and the utility of a member of group k is given by:

$$U_k = -(X_k - X)^2 + yn$$

in the case of no separation, and by:

$$U_k^J = -(X_k - X^J)^2 + y^J n^{J*}$$

in the case of separation.

The model is a sequential game, and has the following timing. First, there are two simultaneous referendums, one in each region, where individuals vote for or against secession. Actual separation is implemented if that alternative gains a majority of the votes in any of the two regions. Second, the individuals vote again, but this time on political candidates proposing a nationalistic policy. The electoral game is made simple by the assumptions that the minorities are small and the majorities immobile. Assuming the possibility of credible policy announcements and office motivated candidates is sufficient to guarantee that the optimal policy is implemented, from the perspective of the majority members.[7] Finally, the members of the minority groups decide whether to migrate or not.[8]

3. Incentives for secession when $n_b^A = 0$

In this section I analyze the case when $n_b^A = 0$, i.e. when no member of group b initially lives in region A. From the perspective of the majority of group b members in region B, this means that they cannot expect any immigration of co-nationals in case of separation. The results will then be contrasted to the case with mobile minorities in both regions, analyzed in the next section.

[7] The simple political structure ignores the possibility of constitutional arrangements, such as regional representation or minority quotas in legislatures, which guarantees some political power of minority groups or regions. These types of arrangements are common throughout the world and likely to decrease the incentives for separation. See, for instance, Panhde (1998) for empirical evidence of the impact of minority quotas on policy in India.

[8] An implicit assumption embedded in the timing of the model is that a majority in the separating countries can commit to an ex ante optimal policy with credibility. To find the outcome in the non-credibility case, the timing with respect to migration and voting on nationalistic policy is reversed. Which specification is the appropriate is an empirical question, but the timing I have chosen to present contains a much richer set of potentials and therefore I consider it to be more interesting.

3.1. Migration

In the case of a single country, policy and income are independent of the region of residence. Hence, there are no incentives for migration, and the attention can be restricted to the migrational effect of separation. By definition, we have a Nash equilibrium in the migration stage, when no individual finds it profitable to migrate unilaterally. Relative income across countries will depend on aggregated migration decisions, due to increasing returns to scale. Together with heterogeneity, this implies that the individual migration decision will depend on the expectations of all others decisions. To find an equilibrium, we define a threshold migration cost, denoted $\tilde{z}_a$, as the cost making a member of the mobile minority group n_a^B indifferent between migrating or not:[9]

$$\tilde{z}_a(n^{B*}, n^{A*}, \cdot) = U_a^A(X^A, y^A, n^{B*}, n^{A*}) - U_a^B(X^B, y^B, n^{B*}, n^{A*}) \tag{1}$$

The threshold is of course not certain to fall within the range $[0, \gamma_a]$. If $\tilde{z}_a(\cdot) > \gamma_a$ then all members of the minority will migrate. If $\tilde{z}_a(\cdot) < 0$, then nobody will migrate. I will here concentrate on the most interesting case, when $\tilde{z}_a(\cdot) \in [0, \gamma_a]$, which puts some restrictions on the parameter values.

The equilibrium populations are given by:

$$n^{A*} = n^A + n_a^B F_a(\tilde{z}_a(n^{A*}, n^{B*}, \cdot))$$

$$n^{B*} = n - n^{A*}$$

Solving for the threshold level in Eq. (1), it can be defined as:

$$\tilde{z}_a = (X_a - X^B)^2 - (X_a - X^A)^2 + y^A n^{A*} - y^B(n - n^{A*})$$

The uniform distribution implies that $F_a(\tilde{z}_a) = \frac{\tilde{z}_a}{\gamma_a}$, if $\tilde{z}_a \in [0, \gamma_a]$. Substituting for the cumulative distribution function and solving for n^{A*} yields:[10]

$$n^{A*} = \frac{n^A + \frac{n_a^B}{\gamma_a}((X_a - X^B)^2 - (X_a - X^A)^2 - y^B n)}{\left[1 - \frac{n_a^B}{\gamma_a}(y^A + y^B)\right]}$$

[9] See, for instance, Epple and Romer (1991), Wellisch (1994) and Cukierman et al. (1997) for other applications of this approach to migration.

[10] It is straightforward to show that $n^{A*} > n^A$ as long as $\tilde{z}_a(n^B, n^A, \cdot) > 0$.

$$n^{B*} = \frac{n^B - \frac{n_a^B}{\gamma_a}\left((X_a - X^B)^2 - (X_a - X^A)^2 + y^A n\right)}{\left[1 - \frac{n_a^B}{\gamma_a}(y^A + y^B)\right]}$$

To get an equilibrium where $n^{A*} \in [n^A,\ n^A + n_a^B]$, it is necessary, though not sufficient, to assume that $\frac{n_a^B}{\gamma_a}(y^A + y^B) < 1$.

3.2. Voting on nationalistic policy

The policy most favoured by the group in majority will be implemented, following the simple structure of politics in the model. In case of a unified country, group n_a^A is in majority by assumption. The winning policy can then be derived by maximizing the utility of a representative member of that group. In this case, the choice of policy has no implications on consumption of the private good, so policy is given by $X^* = X_a$.

In case of separation, X^{J*} is attained by maximizing the utility of a representative member of the majority group in each country. In general, optimal policies equate the marginal benefit of a better policy with the marginal cost in terms of decreasing consumption of the private good from a decrease in population size, as given by:

$$2(X_a - X^{A*}) + y^A \frac{dn^{A*}(\cdot)}{dX^A} = 0$$

$$2(X_b - X^{B*}) + y^B \frac{dn^{B*}(\cdot)}{dX^B} = 0$$

In country *A*, there is no minority, so that members of group n_a^A will only take the possibility of inflow of members of group n_a^B into account when deciding on their policy. The preferences of the diaspora are identical to those of the majority so that $\frac{dn^{A*}(\cdot)}{dX^A} > 0$, as long as $X^{A*} < X_a$, i.e. the optimal policy is given by $X^{A*} = X_a$. In country *B*, the majority must consider the preferences of the minority when deciding the policy. Too extreme a policy, that is, a policy too distant from the preferences of the members of the minority, will cause a substantial emigration with detrimental consequences for the economy. Solving for $\frac{dn^{B*}(\cdot)}{dX^B}$ and plugging this into the first-order condition yields:

$$X^{B*} = (1 - \varpi)\, X_b + \varpi X_a$$

where $\varpi = \frac{y^B \frac{n_a^B}{\gamma_a}}{\left(1 - y^A \frac{n_a^B}{\gamma_a}\right)}$. Optimal policy is accommodated and given by a convex combination of the first-best policies of the respective group in order to prevent excessive emigration of minority members. Hence, individual mobility and

increasing returns to scale in production together constitute a limitation to the degree of nationalism. Comparative statics results are presented below in Proposition 1.

Proposition 1. *The comparative statics results for the choice of nationalistic policy in region B when* $n_b^A = 0$ *are*: (*i*) $\frac{\partial X^{B*}}{\partial n_a^B} > 0$, $\frac{\partial X^{B*}}{\partial \gamma_a} < 0$, (*ii*) $\frac{\partial X^{B*}}{\partial y^A} > 0$, $\frac{\partial X^{B*}}{\partial y^B} > 0$, (*iii*) $\frac{\partial X^{B*}}{\partial X_a} > 0$.

Part (i) of Proposition 1 shows the impact of changes in the size or mobility of the minority group. As expected, policy becomes more accommodating when the minority grows in size or becomes more mobile. What matters for the comparative statics results is the density of individuals at the equilibrium threshold cost, which increases with the size and mobility of the group. It is thus not sufficient that the minority is large in size, it must also be mobile to have a significant impact on the choice of policy. Part (ii) of Proposition 1 shows first of all that policy becomes more accommodating if labour productivity increases in country *A*. A decline in relative productivity means that members of the mobile group will turn to country *A*, so to reduce the economic loss, the majority will modify its policy to keep parts of the minority group within the country. Policy also becomes more accommodating if productivity increases in the home country, which may be somewhat surprising. The intuition for this is that higher labour productivity means that an additional worker contributes more to per capita income, i.e. the cost of 'pushing' the minority out of the country through means of nationalistic policy becomes greater. Together, these two results indicate that increased productivity will lead to a more accommodating policy in general, a finding that seems in line with causal observations. Finally, part (iii) shows that an increase in cultural distance will also lead to a more accommodated policy in equilibrium.

3.3. Voting on secession

At this stage, there are two simultaneous referendums on the issue of secession, one in each region. Individuals anticipate the outcome of the elections on nationalistic policy as well as the migration equilibrium and on this basis they decide how to vote in the referendum. The median voter is a representative member of the non-mobile majority in the respective region. It thus follows that region *A* will separate if $U_a^A(X^{A*}(\cdot),\ y^A,\ n^{A*}(\cdot)) > U_a(X_a,\ y,\ n)$, which can be developed as:

$$y^A n^{A*}(\cdot) - yn > 0$$

Policy in region *A* is given by $X^{A*}(\cdot) = X_a$ when $n_b^A = 0$, so that there is neither a political gain nor a loss from separation for the members of group n_a^A in this case. Only economic motives are thus considered when evaluating a possible separation,

and the equation tells us that separation occurs when the productivity advantage outweighs the economic loss from a decrease in population size.

The second possibility, the one on which I will focus, is that region *B* opts for a secession. Following the same logic as above, a majority in region *B* will vote for a separation if $U_b^B(X^{B*}(\cdot), y^B, n^{B*}(\cdot)) > U_b(X_a, y, n)$, which can be developed as:

$$(X_a - X_b)^2 - (X^{B*}(\cdot) - X_b)^2 > yn - y^B n^{B*}(\cdot) \quad (2)$$

The important difference from the previous case is that separation infers a political gain, the left-hand side of Eq. (2), for the majority in region *B*. It follows that the region dominated by the overall minority group may opt for secession, even if this entails an economic cost. This occurs when the prospect of self-determination is valuable enough, in effect, when $X^{B*}(\cdot)$ is sufficiently smaller than X_a.

Some straightforward results can be drawn from the equations above. First, migration has a direct impact through its influence on labour income, when there are increasing returns to scale. It follows that regions that expect to gain (lose) in population size will generally be more (less) inclined to vote for secession. Second, the existence of different ethnic groups may give rise to politically motivated migration to the 'home' country. These migration flows may be somewhat counteracted by the accommodation of nationalistic policy towards minority preferences, but the act of accommodation in itself decreases the political motives for independence. Regions with large and mobile minorities are therefore in general less likely to separate both on economic and political grounds.

A related question is whether the impact of the existence of a minority differs depending on the motive for separation. For this purpose, first consider the effect of an increase in y^B. Increased productivity will increase the per capita income in case of separation for any given population size. This will attract more individuals, so that the positive income effect will be reinforced by a net inflow of labour. However, as shown in the previous section, higher productivity means a more accommodating policy, and thus the political gain from separation actually declines. This is an optimal adjustment to the higher productivity of labour though, and the population size will increase even if policy remains unchanged. Hence, incentives for separation will unambiguously increase, and the effect is reinforced by the existence of a mobile minority.

If the motive for secession is the right to political self-governance, then the existence of a mobile minority has the opposite effect. An increase in cultural distance, measured as an increase in X_a, will increase the political motives for separation of region *B*, but it will also increase the incentives for members of the minority to migrate. Policy in region *B* will be accommodated to reduce the outflow, but there is still a direct negative effect. As shown in the Appendix, the positive political effect dominates the negative economic effect though, so that an increase in cultural distance will still always increase the incentives for separation,

but the impact is reduced by the existence of a mobile minority. These results are summarized in Proposition 2 below, the calculations are in Appendix A.

Proposition 2. (*i*) *An increase in relative productivity increases the economic incentives for separation. The presence of a mobile minority will reinforce these economic incentives by increasing the equilibrium population size.* (*ii*) *An increase in the cultural distance increases the political incentives for separation, but, in the presence of a mobile minority, it decreases the economic incentives by causing a smaller equilibrium population size. The positive political effect dominates though.*

4. Incentives for secession when $n_b^A > 0$

In this section I analyze the case when there is also a minority in region *A*. First of all, this implies that the majority in both regions must consider the potential economic deterioration caused by the outflow of members of the minority in response to an extreme policy. It also implies that there is now both a minority and a diaspora to keep track off, i.e. an accommodated policy may avoid emigration of members of the minority, but it may also make immigration of members of the diaspora less likely. Optimal policy must thus consider these counteracting forces, and the incentives for separation may therefore be different in this case.

4.1. Migration

In this case, the population in the respective country is given by $n^{A*} = n_a^{A*} + n_b^{A*}$ and $n^{B*} = n_a^{B*} + n_b^{B*}$, where $n_b^{A*} = n_b - n_b^{B*}$ and $n_a^{B*} = n_a - n_a^{A*}$. This implies that any population configuration must now be described in terms of two endogenous variables, n_a^{A*} and n_b^{B*}. A threshold cost is defined for each group, as:

$$\begin{aligned} \tilde{z}_a(n_b^{B*}, n_a^{A*}, \cdot) &= U_a^A(X^A, y^A, n_b^{B*}, n_a^{A*}) - U_a^B(X^B, y^B, n_b^{B*}, n_a^{A*}) \\ \tilde{z}_b(n_b^{B*}, n_a^{A*}, \cdot) &= U_b^B(X^B, y^B, n_b^{B*}, n_a^{A*}) - U_b^A(X^A, y^A, n_b^{B*}, n_a^{A*}) \end{aligned} \tag{3}$$

As in the previous case, $\tilde{z}_k(\cdot) \in [0, \gamma_k]$ is assumed for both k in equilibrium, to guarantee an interior equilibrium. The equilibrium in the migration game can be defined as the pair of the two subgroups, $\{n_a^{A*}, n_b^{B*}\}$, which simultaneously satisfies the following equation system:

$$n_a^{A*} = n_a^A + n_a^B F_a(\tilde{z}_a(n_a^{A*}, n_b^{B*}, \cdot))$$

$$n_b^{B*} = n_b^B + n_b^B F_b(\tilde{z}_b(n_b^{B*}, n_a^{A*}, \cdot))$$

The migration equilibrium is thus more complex in the case with two mobile

minority groups, and it is given by a fix-point in (n_a^{A*}, n_b^{B*}) space. Solving for the threshold levels in Eqs. (3), these can be defined as:

$$\tilde{z}_a = (X_a - X^B)^2 - (X_a - X^A)^2 + y^A(n_a^{A*} + n_b - n_b^{B*}) - y^B(n_b^{B*} + n_a - n_a^{A*})$$

$$\tilde{z}_b = (X^A - X_b)^2 - (X^B - X_b)^2 + y^B(n_b^{B*} + n_a - n_a^{A*}) - y^A(n_a^{A*} + n_b - n_b^{B*})$$

The uniform distributions imply that $F_k(\tilde{z}_k) = \frac{\tilde{z}_k}{\gamma_k}$, if $\tilde{z}_k \in [0, \gamma_k]$. Substituting for the cumulative distribution function and solving for n_k^{j*} yield

$$n_a^{A*} = \frac{\frac{n_a^B}{\gamma_a}\left((X_a - X^B)^2 - (X_a - X^A)^2 + y^A n_b - y^B n_a - (y^A + y^B)\, n_b^{B*}\right) + n_a^A}{\left[1 - \frac{n_a^B}{\gamma_a}(y^A + y^B)\right]} \tag{4}$$

$$n_b^{B*} = \frac{\frac{n_b^A}{\gamma_b}\left((X^A - X_b)^2 - (X^B - X_b)^2 + y^B n_a - y^A n_b - (y^A + y^B)\, n_a^{A*}\right) + n_b^B}{\left[1 - \frac{n_b^A}{\gamma_b}(y^A + y^B)\right]} \tag{5}$$

Eqs. (4) and (5) show that the simultaneous equation system characterizing the equilibrium is linear in (n_a^{A*}, n_b^{B*}) space. It is straightforward to verify the following lemma. All proofs are presented in Appendix A.

Lemma 1. *If* $(y^A + y^B) \neq \frac{1}{\left(\frac{n_a^B}{\gamma_a} + \frac{n_b^A}{\gamma_b}\right)}$, *there always exists a unique Nash equilibrium in the migration stage, and if* $(y^A + y^B) < \frac{1}{\left(\frac{n_a^B}{\gamma_a} + \frac{n_b^A}{\gamma}\right)}$, *the equilibrium is stable.*

Eqs. (4) and (5) show that the subgroup sizes are strategic substitutes. This is a consequence of the increasing returns to scale technology which implies that individual income increases with the size of the population. Emigration of the minority group will therefore make immigration of members of the majority group in the diaspora less likely. The equations also show that the marginal impact on n_a^{A*} of a change in n_b^{B*} becomes greater if productivity increases in any of the regions, since this will make population size more important for relative per capita income.

4.2. Voting on nationalistic policy

The difference from the previous case is that members of both majority groups now stand the risk of net emigration of individuals if they choose too extreme a

policy. The first-order conditions still define the optimal policies as those equating the marginal benefit of a better policy with the marginal cost in terms of decreasing consumption of the private good from a decrease in population size, given by

$$\begin{aligned} 2\left(X_a - X^{A*}\right) + y^A \frac{\mathrm{d}n^{A*}(\cdot)}{\mathrm{d}X^A} &= 0 \\ 2\left(X_b - X^{B*}\right) + y^B \frac{\mathrm{d}n^{B*}(\cdot)}{\mathrm{d}X^B} &= 0 \end{aligned} \tag{6}$$

To find an explicit expression for X^{B*}, it must be evaluated how the equilibrium population in nation B is affected by a change in policy, for some given value of X^A.[11] This time there are two mobile groups, so that $\frac{\mathrm{d}n^{B*}(\cdot)}{\mathrm{d}X^B} = \left(\frac{\mathrm{d}n_b^{B*}(\cdot)}{\mathrm{d}X^B} - \frac{\mathrm{d}n_a^{A*}(\cdot)}{\mathrm{d}X^B}\right)$. To calculate the net effect, the impact on both the minority group within the country, and the diaspora must be considered. As shown in Eqs. (4) and (5), $n_b^{B*}(\cdot)$ is a function of $n_a^{A*}(\cdot)$, which is in turn, a function of $n_b^{B*}(\cdot)$. The total effect of a change in policy on the respective group will thus consist of a direct effect, and an indirect effect through the reaction of the other group, which is given by:

$$\frac{\mathrm{d}n_b^{B*}(\cdot)}{\mathrm{d}X^B} = \frac{\partial n_b^{B*}(\cdot)}{\partial X^B} + \frac{\partial n_b^{B*}(\cdot)}{\partial n_a^A}\frac{\mathrm{d}n_a^{A*}(\cdot)}{\mathrm{d}X^B}$$

$$\frac{\mathrm{d}n_a^{A*}(\cdot)}{\mathrm{d}X^B} = \frac{\partial n_a^{A*}(\cdot)}{\partial X^B} + \frac{\partial n_a^{A*}(\cdot)}{\partial n_b^B}\frac{\mathrm{d}n_b^{B*}(\cdot)}{\mathrm{d}X^B}$$

By solving for $\frac{\mathrm{d}n_a^{A*}(\cdot)}{\mathrm{d}X^B}$ and $\frac{\mathrm{d}n_b^{B*}(\cdot)}{\mathrm{d}X^B}$ and plugging in the derivatives of Eqs. (4) and (5), the total impact on population size of a marginal change in policy is obtained. Plugging this into the first-order conditions in Eq. (6) and solving for optimal policy yield:

$$X^{A*} = \left(1 - \varpi^A\right) X_a + \varpi^A X_b$$

and

$$X^{B*} = \left(1 - \varpi^B\right) X_b + \varpi^B X_a$$

where $\varpi^A = \frac{y^A \frac{n_b^A}{\gamma_b}}{\left(1 - y^B\left(\frac{n_b^A}{\gamma_b} + \frac{n_a^B}{\gamma_a}\right)\right)}$ and $\varpi^B = \frac{y^B \frac{n_a^B}{\gamma_a}}{\left(1 - y^A\left(\frac{n_b^A}{\gamma_b} + \frac{n_a^B}{\gamma_a}\right)\right)}$. Optimal policies are accommodated in both countries, and given by convex combinations of the first-best policies.[12] Comparative statics results are presented below in Proposition 3. The

[11] An explicit expression for X^{A*} is, of course, obtained in the same way.

[12] The result that optimal policy in one country is unaffected by the choice of policy in the other country follows from the uniform distributions of migration costs.

results for the choice of policy in region *B* are displayed and the results for region *A* are symmetric.

Proposition 3. *The comparative statics results when* $n_b^A > 0$ *for the choice of nationalistic policy in region B are*: (*i*) $\frac{\partial X^{B*}}{\partial n_b^A} > 0$, $\frac{\partial X^{B*}}{\partial n_a^B} > 0$, $\frac{\partial X^{B*}}{\partial \gamma_b} < 0$, $\frac{\partial X^{B*}}{\partial \gamma_a} < 0$, (*ii*) $\frac{\partial X^{B*}}{\partial y^A} > 0$, $\frac{\partial X^{B*}}{\partial y^B} > 0$, (*iii*) $\frac{\partial X^{B*}}{\partial X_a} > 0$.

Part (i) of Proposition 3 shows the impact of changes in the size or mobility of the minority and diaspora, respectively. As in the previous section, a greater or more mobile minority group leads to a more accommodating policy, since a more extreme policy then causes a greater outflow of minority members in absolute terms. It might be more surprising that the same is also true for the diaspora. Intuitively, a more extreme policy could be expected to attract members of the diaspora, and if their size or mobility increases, then this net gain of people would increase. However, $\frac{dn_b^{B*}(\cdot)}{dX^B}$ is actually negative when evaluated in (a stable) equilibrium, indicating that the negative economic impact of emigration of the minority outweighed the positive political impact of a 'better' policy for members of the diaspora. It follows that a greater and more mobile diaspora will increase the economic cost of a more extreme policy, and not decrease them as may be expected. This is also clear when comparing the degree of accommodation with and without a diaspora. Once again, policy could be expected to become more extreme, as a consequence of the existence of a diaspora, but rather the opposite, I find that $\varpi^B > \varpi$. Optimal policy thus becomes more accommodating, when a diaspora is introduced into the model.

In part (ii) of Proposition 3, I find that policy becomes more accommodating if labour productivity increases in any of the countries; a result in line with the previous section. Higher labour productivity in the home country means that an additional worker contributes more to per capita income, i.e. the cost of 'pushing' the minority out of the country through means of nationalistic policy increases. A productivity increase in country *A* means that members of both mobile groups will turn to the other country, and thus, to reduce the economic loss, the majority will modify their policy to keep parts of the minority group within the country. Finally, part (iii) shows that an increase in cultural distance will lead to more accommodating policy in equilibrium also in this case.

4.3. Voting on secession

At this stage, there are two simultaneous referendums on the issue of secession, one in each region. The majority in region *A* will be in favour of separation if $U_a^A(X^{A*}(\cdot), y^A, n^{A*}(\cdot)) > U_a(X_a, y, n)$, which can be developed as:

$$y^A n^{A*}(\cdot) - yn > (X_a - X^{A*}(\cdot))^2 \tag{7}$$

The difference from the previous section is that separation incurs a political cost

for the overall majority group in this case, since $X^{A*} < X_a$. Separation creates an outside option for members of the minority, which forces the majority to accommodate its policy to avoid a massive outflow of labour. The left-hand side of Eq. (7) corresponds to the economic gains from separation, while the right-hand side corresponds to this political cost. Region A will thus separate if the productivity advantage is sufficiently large to outweigh both the economic loss from a smaller population and the political cost of separation.

A majority in region B will vote for separation if $U_b^B(X^{B*}(\cdot),\ y^B,\ n^{B*}(\cdot)) > U_b(X_a,\ y,\ n)$, which can be developed as:

$$(X_a - X_b)^2 - (X^{B*}(\cdot) - X_b)^2 > yn - y^B n^{B*}(\cdot)$$

This expression is identical to that in Section 3, i.e. separation infers a political gain for the majority in region B which implies that the overall minority group may opt for secession, even if that creates an economic cost. However, the $X^{B*}(\cdot)$ and $n^{B*}(\cdot)$ functions will respond differently to changes in the exogenous variables.

Once again, let's consider the impact of the mobile groups on the incentives for separation in region B, when separation is motivated by an increase in productivity and an increase in cultural distance, respectively. An increase in y^B will have two additional effects when there is a diaspora in addition to the minority. The first effect is that members of the diaspora will also be attracted by the productivity increase, which further reinforces the positive economic effect. However, there is also a counteracting effect since the majority in country A now will accommodate its policy, to prevent emigration. The increase in y^B will make the population size more sensitive to changes in policy, i.e. $\frac{\partial^2 n^J*}{\partial X^J* y^j} > 0$, which means that policy in country A may be modified to the extent that population size actually decreases in country B. In contrast to the previous case, I cannot with complete confidence claim that increased productivity leads to increased incentives for separation, when there is also a diaspora, even though this seems very likely. The exception is when there are no preference differences, in which case region A lacks an instrument to mitigate the outflow of labour so that the effect is unambiguous.

If the motive for secession is the right to political self-governance, then the existence of a mobile diaspora, in addition to the minority group, leads to an additional effect that speaks in favour of separation, if there is a marginal increase in X_a. This is due to the fact that policy in country A will become more distant from X_b, which will increase the inflow of the diaspora. These findings are summarized in Proposition 4 below, the calculations are in Appendix A.

Proposition 4. (*i*) *An increase in relative productivity is likely to increase the economic incentives for separation by attracting members of both groups. However, in the presence of a mobile diaspora, policy in country A will be accommodated to reduce or eliminate the net outflow. The overall effect of these*

two counteracting forces depend on parameter values. (ii) An increase in cultural distance increases the political incentives for separation, while the economic consequences depend on the relative flows of immigration from members of the diaspora and emigration of members of the minority group. The existence of a diaspora thus mitigates, or eliminates, the negative economic consequences in the presence of only a minority group.

5. Nationalistic policy under the threat of secession

In the previous section, the overall majority group (group n_a^A) lacked the ability to credibly commit to an accommodating nationalistic policy to avoid secession from the minority group concentrated in region *B*. In this section, I analyze the case when a credible commitment technology exists. The specific questions addressed are whether and when the majority will take this opportunity and the implications of mobile minorities and diasporas on the incentives for accommodation within the unified country.

The first observation is that, even if separation could be avoided, it would not always be optimal for the members of group n_a^A to take advantage of this possibility, since they may themselves prefer to secede if region *A* has a significant advantage in productivity. Equivalently, if region *B* has a significant advantage in productivity, members of group n_b^B may vote for separation, irrespective of the degree of accommodation of policy within the union. Hence, the model will still predict secessions in equilibrium for some parameter values.

Second, to avoid separation, the policy within the unified country must leave the members of both groups n_a^A and n_b^B worse off by separation. Analyzing voting behavior can therefore be reduced to studying two 'participation' constraints; a representative member of group n_b^B will vote against separation, if and only if, X^* satisfies:

$$-(X^* - X_b)^2 + yn \geq -\left(X^{B*} - X_b\right)^2 + y^B n^{B*} \tag{8}$$

By solving Eq. (8) with equality, the highest value on X^* satisfying the constraint can be defined as $X^{\max}$, given by:

$$X^{\max} = X_b + \sqrt{\left(X^{B*} - X_b\right)^2 + yn - y^B n^{B*}}$$

Equivalently, a representative member of group n_a^A will vote against separation, if and only if, X^* satisfies

$$-(X_a - X^*)^2 + yn \geq -\left(X_a - X^{A*}\right)^2 + y^A n^{A*}$$

The lowest value on X^* satisfying this constraint is defined as $X^{\min}$, and given by:

$$X^{\min} = X_a - \sqrt{\left(X_a - X^{A*}\right)^2 + yn - y^A n^{A*}}$$

From the equations above, it is straightforward to establish the following lemma:

Lemma 2. *A necessary and sufficient condition to avoid separation is that* $X^{\max} \geq X^{\min}$. *If this condition is satisfied, then* $X^* = \min\{X^{\max}, X_a\}$.

The intuition behind Lemma 2 is most easily visualized in a figure showing how the utility under unification depends on X^*. The choice of policy, X^*, is plotted on the horizontal axis and the utility of a representative member of each majority group, in case of a unified country, is plotted on the vertical axis. The dotted lines show the utility of the respective group in separation, which is independent of X^*. $X^{\max}$ is given by the displayed intersection of the utility in case of a unified country, with the utility in case of separation for a representative member of group n_b^B. Equivalently, $X^{\min}$ is given by the intersection of the two utility functions of a representative member of group n_a^A. It is clear from the figure that if $X^{\max} < X^{\min}$, then there exists no policy satisfying both constrains. Fig. 1 shows a situation with an interval of policies satisfying both constraints, henceforth referred to as the set of feasible policies. Furthermore, Fig. 1 also shows that if this set is non-empty, then members of group n_a^A will vote on $X^{\max}$ as long as $X^{\max} \leq X_a$, since this is the feasible policy maximizing their utility.

The expressions for $X^{\max}$ and $X^{\min}$ show that an accommodating policy unambiguously increases the range of feasible policies in both directions. The intuition is that accommodation makes separation less politically attractive, with the implication that the majorities in both regions will be willing to accept a less beneficial policy and still remain in the union. Larger and more mobile minorities will thus, in general, make separation less likely and less attractive, through the accommodating effect of labour competition on policy, which means that nationalistic policy in the unified country becomes more extreme, since $X^{\max}$ tends

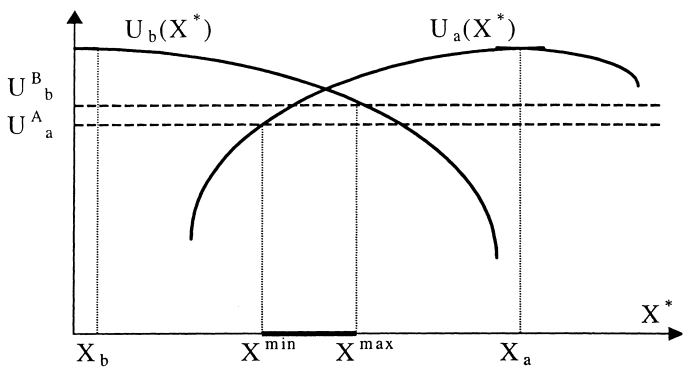

Fig. 1. The set of feasible policies.

to increase. Larger and more mobile minorities thus lead to a more extreme policy within the unified country, because it leads to the opposite in case of separation.

The size and mobility of the minorities will also affect the incentives for separation through the impact on the equilibrium population size. This population effect will hit the two countries in opposite ways, since what one country gains the other will lose. The country whose population size will decrease will unambiguously accept a less favorable policy under unification when minorities are mobile. For the other country, this will depend on which of the two effects dominates. The most important findings in this section are summarized in Proposition 5.

Proposition 5. *An increase in the size and mobility of the minority groups generally increases the set of feasible policies, making separation less 'likely' when the overall majority group can accommodate policy to avoid separation. The accommodating effect on policies in the separating countries also implies that increased mobility leads to a more extreme nationalistic policy in the unified country.*

6. Empirical implications

The model outlined in this paper emphasizes some of the challenging issues raised by the disintegration of countries, with particular focus on the role of mobile minorities. The model stresses the importance of both economic and cultural incentives in understanding migration patterns between separating countries. It also stresses the impact of migration on the choice of nationalistic policy, and its influence on the incentives to separate to begin with. The history is ripe of examples in which separation has caused massive migration of ethnic groups between the newly created countries. In many of these examples, migration has been triggered by violent ethnic conflicts, think for instance of the cases of the disintegration of British India and the former Yugoslavia. However, there also exist peaceful secessions in which the cultural and economic motives for migration are easier to detect. A prime example is the disintegration of the former Soviet Union.

Robertson (1996) presents data on the ethnic composition of migration between Russia and the other newly independent states of the former Soviet Union in 1991 and 1992. These data reveal that: (1) With the exception of Ukraine and Belarus, there has been net immigration of Russians into Russia from the newly independent states. At the same time, a clear majority of the other states have received net immigration of their titular population from Russia. (2) Generally, ethnic migration flows in both directions are smallest between the East-Slavic nations of Russia, Belarus and Ukraine, while they are somewhat larger between Russia and the Christian Baltic states and Moldova, and greatest between Russia

and Muslim Central Asia. These data should be interpreted with care, but they clearly indicate that there is something else than just economic motives that drives migration flows. Greater cultural differences seem to imply more migration in both directions, an observation in line with nationalistic policy induced migration as suggested by the model above.

The outflow of ethnic Russians from the Muslim Central Asia has been substantial during the 1990s, averaging around 5% a year of the total Russian population from Kazakhstan, Kyrgyzstan, Turkmenistan and Uzbekistan. In the mean time, it is widely reported that ethnic Russians suffer from a sense of marginalization as the societies they live in become increasingly Kazak, 'Uzbekified', or the equivalent. That this is an important reason for the substantial emigration seems plausible, and the hypothesis gains support in a poll conducted in Kazakhstan, asking the Russian population about their motivations for migrating. 31.9% of the respondents answered that they migrated due to 'ethnic reasons', the highest number in the poll, while 31.4% answered that they migrated due to 'economic reasons' (CSCE, 1998).

On the other hand, it is clear that the governments of these countries face difficult trade-offs in their choice of policy, between the establishment of a new national identity, economic viability, and the relationship to the Russian ethnic minority. The Russian minority constitute a crucial part of the labour force, occupying central positions in the urban industry, as well as in administration and services, and being relatively highly educated on average. There is thus a clear economic cost emanating from the emigration of ethnic Russians. On the other hand, governments face a pressure from the titular majorities to establish a new national identity, often based on language and religion. The outcome of this trade-off is a policy of accommodation in which nationalistic policy catering for the titular majority, is mixed with statements of the equal rights of all ethnic groups, 'flexible national policy' (Kyrgyzstan) and dual citizenship (Turkmenistan) (Simonsen, 1997).

The outflows of ethnic Russians from the Central Asian republics can be contrasted with the case of the Baltic republics, in which the initial outflow of Russians (as reported by Robertson, 1996) has more or less died off. The explanation for this is partly due to the fact that the initially very aggressive nationalistic policy has been partially modified, but the major explanation is probably the relatively positive economic prospects of the Baltic countries. This is also the most important explanation for the different stands taken by countries in these two regions in the disintegration of the Soviet Union. While the Baltic countries where among the first and most vigorous separatists, it is unclear if the Central Asian countries wanted separation at all (Bookman, 1997). To summarize, the example of the disintegration of the Soviet Union seems to fit well into the picture of the interaction between political and economic factors in explaining migration decisions, policy decisions and secession as outlined in the model above.

7. Concluding remarks

This paper analyzes the role of ethnic groups and labour mobility in the formation of jurisdictions. Ethnic belonging determines your preferences over nationalistic policy, modeled as a unidimensional policy variable. The analysis is based on two presumptions: (i) that secessions create heterogenous countries, and (ii) that there are economic benefits of a larger population, due to increasing returns to scale in production. It follows that ethnic majorities will have incentives to modify the nationalistic policy somewhat towards the preferences of the minority group, in order to limit economically detrimental emigration.

This simple model cannot, of course, catch all relevant factors in the very complex question of ethnic groups and country formation. In particular, there is no struggle for political power in the model, since decisions are assumed to be taken democratically and the majority group is always well defined. This means that the model cannot explain the tragic real world phenomenon of ethnic cleansing or, in general, the abundance of military conflicts in cases of secessions.[13] Furthermore, even if decisions are taken democratically, migration and differences in natality across ethnic groups may be expected to shift the political power in the future, something that has been important for the separatist movements in Estonia and Latvia.[14]

Nevertheless, the analysis offers some potentially useful insights. In particular, I find that larger and more mobile minority groups, both inside and outside the borders, decrease the political incentives for separation, by an accommodating effect on nationalistic policy in equilibrium. The reason for this is that increased mobility increases the competition for labour, and nationalistic policy is used as an instrument in this competition. I also find that the existence of mobile minorities and diasporas affect the probability of separation somewhat differently depending on whether separation is driven by political or economic concerns. Finally, I find that the relationship between minority size and mobility and policy is reversed in the unified country. By making separation less politically attractive, the ethnic majority can get away with a less accommodating policy when the ethnic groups are more mobile.

[13]There exists a quite extensive political and economic literature on ethnic civil wars, as reflected in the World Bank's research programme: 'The Economics of Crime and Violence'. Two examples of papers dealing explicitly with ethnic wars and country formation are Sambanis (2000) and Azam and Hoeffler (2000).

[14]Bookman (1997) thoroughly discusses the different means through which ethnic groups try to increase their power by the use of demographic engineering, i.e. different ways of increasing the relative size of their group within a region or country. Note that the idea that each group wants to maximize the relative size of its own group within its borders is consistent with the findings in this paper, as long as the absolute size of the population is not reduced.

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Appendix A

A.1. Proof of Lemma 1

Part (i) (existence and uniqueness)

The linear equation system can be rewritten in matrix form as below:

$$\begin{bmatrix} 1-\frac{n_a^B}{\gamma_a}(y^A+y^B) & \frac{n_a^B}{\gamma_a}(y^A+y^B) \\ \frac{n_b^A}{\gamma_b}(y^A+y^B) & 1-\frac{n_b^A}{\gamma_b}(y^A+y^B) \end{bmatrix} \begin{bmatrix} n_a^{A*} \\ n_b^{B*} \end{bmatrix} = \begin{bmatrix} K_a \\ K_b \end{bmatrix}$$

The K_i expressions are constants and given by:

$$K_a = \frac{n_a^B}{\gamma_a}\left((X_a - X^B)^2 - (X_a - X^A)^2 + y^A n_b - y^B n_a\right) + n_a^A$$

$$K_b = \frac{n_b^A}{\gamma_b}\left((X^A - X_b)^2 - (X^B - X_b)^2 + y^B n_a - y^A n_b\right) + n_b^B$$

From linear algebra it is known that there exists a unique solution to the linear equation system if the first matrix, matrix A, is invertible. This is equivalent to requiring that $\det(A) \neq 0$, i.e. that:

$$1 - (y^A + y^B)\left(\frac{n_a^B}{\gamma_a} + \frac{n_b^A}{\gamma_b}\right) \neq 0$$

Rearranging terms yields the condition in Proposition 1:

$$(y^A + y^B) \neq \frac{1}{\left(\frac{n_a^B}{\gamma_a} + \frac{n_b^A}{\gamma_b}\right)}$$

Part (ii) (stability)

The equilibrium is stable if the product of the slopes of the two aggregated best-reply functions is less than one. These slopes can be derived as:

$$\frac{\partial n_a^{A*}}{\partial n_b^{B*}} = \frac{-\frac{n_a^B}{\gamma_a}(y^A + y^B)}{\left[1 - \frac{n_a^B}{\gamma_a}(y^A + y^B)\right]}$$

$$\frac{\partial n_b^{B*}}{\partial n_a^{A*}} = \frac{-\frac{n_b^A}{\gamma_b}(y^A + y^B)}{\left[1 - \frac{n_b^A}{\gamma_b}(y^A + y^B)\right]}$$

By rearranging terms, the condition for stability can be written as in Proposition 1:

$$(y^A + y^B) < \frac{1}{\left(\frac{n_a^B}{\gamma_a} + \frac{n_b^A}{\gamma_b}\right)}$$

A.2. Proof of Proposition 2

Part (i)

The condition for members of group n_b^B to prefer separation is given by:

$$(X_a - X_b)^2 - (X_b - X^{B*}(\cdot))^2 - yn + y^B n^{B*}(\cdot) > 0$$

Differentiating the condition with respect to y^B yields:

$$\left[2(X_b - X^{B*}(\cdot)) + y^B \frac{\partial n^{B*}(\cdot)}{\partial X^{B*}(\cdot)}\right] \frac{\partial X^{B*}(\cdot)}{\partial y^B} + n^{B*}(\cdot) + y^B \frac{\partial n^{B*}(\cdot)}{\partial y^B}$$

where the effect of y^B is decomposed into a direct and an indirect effect (through the impact on $X^{B*}(\cdot)$). The expression within brackets is the first-order condition of the policy optimization, and thus equal to zero. The direct effect on the population is given by:

$$\frac{\partial n^{B*}(\cdot)}{\partial y^B} = \frac{\frac{n_a^B}{\gamma_a} n^{B*}(\cdot)}{\left[1 - \frac{n_a^B}{\gamma_a}(y^A + y^B)\right]}$$

which is unambiguously positive. The total effect thus becomes positive, and is given by:

$$n^{B*}(\cdot) + y^B \frac{\frac{n_a^B}{\gamma_a} n^{B*}(\cdot)}{\left[1 - \frac{n_a^B}{\gamma_a}(y^A + y^B)\right]}$$

Part (ii)

The condition for members of group n_b^B to prefer separation is given by:

$$(X_a - X_b)^2 - (X_b - X^{B*}(\cdot))^2 - yn + y^B n^{B*}(\cdot) > 0$$

Differentiating the condition with respect to X_a yields:

$$2(X_a - X_b) + \left[2(X_b - X^{B*}(\cdot)) + y^B \frac{\partial n^{B*}(\cdot)}{\partial X^{B*}(\cdot)}\right] \frac{\partial X^{B*}(\cdot)}{\partial X_a} + y^B \frac{\partial n^{B*}(\cdot)}{\partial X_a}$$

Once again, the expression within brackets is the first-order condition of the policy optimization, and thus equal to zero. The direct effect on the population is given by:

$$\frac{\partial n^{B*}(\cdot)}{\partial X_a} = -\frac{2\frac{n_a^B}{\gamma_a}(X^{A*}(\cdot) - X^{B*}(\cdot))}{\left[1 - \frac{n_a^B}{\gamma_a}(y^A + y^B)\right]}$$

which is negative since $X^{A*}(\cdot) > X^{B*}(\cdot)$. $(X^{A*}(\cdot) - X^{B*}(\cdot)) = (X_a - X_b)(1 - \varpi)$, which can be rewritten as:

$$(X_a - X_b)\frac{\left[1 - \frac{n_a^B}{\gamma_a}(y^A + y^B)\right]}{\left[1 - \frac{n_a^B}{\gamma_a} y^A\right]}$$

This yields the total effect as:

$$2(X_a - X_b)\left[\frac{\left[1 - \frac{n_a^B}{\gamma_a}(y^A + y^B)\right]}{\left[1 - \frac{n_a^B}{\gamma_a} y^A\right]}\right]$$

which is positive since $\frac{n_a^B}{\gamma_a}(y^A + y^B) < 1$ must hold.

A.3. Proof of Proposition 4

Part (i)

The condition for members of group n_b^B to prefer separation is given by:

$$(X_a - X_b)^2 - \left(X_b - X^{B*}(\cdot)\right)^2 - yn + y^B n^{B*}(\cdot) > 0$$

Differentiating the condition with respect to y^B yields:

$$\left[2\left(X_b - X^{B*}(\cdot)\right) + y^B \frac{\partial n^{B*}(\cdot)}{\partial X^{B*}(\cdot)}\right] \frac{\partial X^{B*}(\cdot)}{\partial y^B} + n^{B*}(\cdot) +$$

$$y^B \left[\frac{\partial n^{B*}(\cdot)}{\partial X^{A*}(\cdot)} \frac{\partial X^{A*}(\cdot)}{\partial y^B} + \frac{\partial n^{B*}(\cdot)}{\partial y^B}\right]$$

The expression within the first brackets can be set to zero. The additional effects compared to the case with only a minority are the impact of the choice of policy in country *A*, and the impact of the existence of a diaspora on migration decisions. $\frac{\partial n^{B*}(\cdot)}{\partial X^{A*}(\cdot)}$ is equal to $-\frac{\partial n^{A*}(\cdot)}{\partial X^{A*}(\cdot)}$, which must be positive from the first-order condition in the policy stage. Straightforward comparative statics show that $\frac{\partial X^{A*}(\cdot)}{\partial y^B} < 0$, which implies that the accommodating effect of policy in country *A* indeed has a negative impact on population size, and thereby the incentives for separation, in country *B*. The direct effect on the population is now given by:

$$\frac{\partial n^{B*}(\cdot)}{\partial y^B} = \frac{\frac{n_b^A}{\gamma_b}\left(n_a - n_a^{A*}\right) + \frac{n_a^B}{\gamma_a}\left(n_a + n_b^{B*}\right)}{\left[1 - \left(\frac{n_a^B}{\gamma_a} + \frac{n_b^A}{\gamma_b}\right)\left(y^A + y^B\right)\right]}$$

which is unambiguously positive and shows that the effect is reinforced by immigration of the diaspora. However, the net impact of these two counteracting forces is uncertain.

Part (ii)

The condition for members of group n_b^B to prefer separation is given by:

$$(X_a - X_b)^2 - \left(X_b - X^{B*}(\cdot)\right)^2 - yn + y^B n^{B*}(\cdot) > 0$$

Differentiating the condition with respect to X_a yields:

$$2(X_a - X_b) + \left[2\left(X_b - X^{B*}(\cdot)\right) + y^B \frac{\partial n^{B*}(\cdot)}{\partial X^{B*}(\cdot)}\right] \frac{\partial X^{B*}(\cdot)}{\partial X_a} +$$

$$y^B \left[\frac{\partial n^{B*}(\cdot)}{\partial X^{A*}(\cdot)} \frac{\partial X^{A*}(\cdot)}{\partial X_a} + \frac{\partial n^{B*}(\cdot)}{\partial X_a}\right]$$

The first expression within brackets can once more be set to zero. A change in X_a will have no direct effect, apart from the indirect impact of the choice of policy on the migration decisions of the diaspora (group n_b^A). The direct effect is therefore the same in this case as in the previous one. The only difference from the result in the proof of Proposition 2 is therefore the additional term due to a change in policy in country A, so it is sufficient to show that this effect is positive to guarantee an overall positive effect. Once again, $\frac{\partial n^{B*}(\cdot)}{\partial X^{A*}(\cdot)}$ is equal to $-\frac{\partial n^{A*}(\cdot)}{\partial X^{A*}(\cdot)}$, which must be positive from the first-order condition in the policy stage, and it is straightforward to verify that $\frac{\partial X^{A*}(\cdot)}{\partial X_a} > 0$. It follows that the additional effect is indeed positive.

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