Institute of Business and Economic Research

Fisher Center for Real Estate and Urban Economics

PROGRAM ON HOUSING AND URBAN POLICY

CONFERENCE PAPER SERIES

CONFERENCE PAPER NO. C07-003

URBAN EXTREMISM

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February 2007

UNIVERSITY OF CALIFORNIA, BERKELEY

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February, 2007

Abstract

A current majority in some city, seeking to increase the probability that it will set policy in the following period, may initially adopt extremist policies that are particularly unattractive to the minority, leading some members of the minority to emigrate. The paper develops a model to illustrate this idea, while providing examples that illustrate its relevance.

Urban Extremism

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Jan K. Brueckner and Amihai Glazer*

1. Introduction

Public policies that affect the welfare of current residents may also induce emigration or immigration, altering the future composition of the population and thus the future policy preferences of voters. A dramatic example arose in Quebec, where the French majority adopted policies that hurt the English-speaking minority. These policies appeared to encourage the emigration of Anglophones and to discourage their immigration into Quebec.

In 1974, the Quebec government implemented Bill 22, which declared French the official language of Quebec and required that all arriving immigrants be enrolled in French-language schools. The language law favoring French was strengthened in 1977 by Bill 101, which made French the only official language of Quebec and established a schedule for making it the dominant language of work. Bill 101 required all public signs (including road signs) and commercial advertising to be exclusively in French. Eton's and Ogilvy's department stores were even required to remove the apostrophes from their names.

In view of these anti-English activities, it is not surprising that, between 1966 and 1996, Quebec lost 405,000 residents to interprovincial migration, with twice as many Anglophones leaving as Francophones (Lo and Teixeria (1998)). From 1961 to 1991, the proportion of the Quebec population with English as the mother tongue fell from 13.3 per cent to 9.2 per cent (McRoberts (1997)). While implementing the new language laws, Quebec consciously sought power over immigration. It established its own Ministry of Immigration in 1968, and in 1991 the Accord Canada-Quebec consolidated Quebec's role in the selection of immigrants.

Undoubtedly, emigration reduced the political power of Anglophones, and it nearly led to a dramatic effect on political decisions. In 1995 Quebec held a referendum on separation from Canada; it narrowly failed, receiving 49.4 percent of the vote. While nearly 60 per cent of

Francophones voted Yes, about 95 per cent of non-Francophones voted No. With only slightly greater Anglophone emigration, the referendum could have passed.

In this paper, rather than looking at migration as an unanticipated consequence of government policies, we instead show how anticipated impacts on migration may guide policy choices. Our analysis may be especially relevant in regions like Quebec that exhibit sharp language or ethnicity divisions. Belgium, with its Francophone/Flemish split, and Catalonia, which seeks separation from Spain, are other examples that come to mind. But policy choices designed to induce emigration may occur in other, more familiar, contexts. For example, suppose a city consists of a majority of parents with young school-age children and a minority without children. Parents want high spending on schools both now and in the future. Not guaranteed that their majority status will persist, parents may vote for excessive school spending now to make the city less attractive to childless voters, who may emigrate, thus raising the likelihood that parents retain their majority status in the future.[1] Or liberal voters in Santa Monica, California may favor generous treatment of the homeless not only out of sympathy for them, but also because the current liberal majority may want to induce emigration of conservative residents who find the presence of the homeless especially uncomfortable. Such emigration solidifies the political power of the initial majority, ensuring that future homeless policies agree with their preferences. Orthodox voters in Jerusalem may want to close all places of entertainment on the Sabbath, including those they will never frequent, because such closure makes the city less attractive to secular people, ensuring that future policies will also be strict. A Long Island suburb may impose high property taxes and impose large minimum-lot requirements not only because the current residents value schools and low density, but also because the residents want few poor people, who could affect future policy as voters, to live there.

We shall illustrate these ideas in a simple two-period model with two types of voters, who differ in their preferences over the level of a governmental policy variable. After the vote outcome in period 0, people may emigrate. The cost of emigration differs across residents, which means that the number of migrants unhappy with the policy choice rises continuously as the policy becomes more unfavorable. Because random voter turnout makes future vote outcomes uncertain even with fixed population shares, each group has an incentive to generate

emigration of the other type through the policy it could adopt in period 0. We shall see that this incentive can lead to extreme policies. If the policy is public-good spending, then high demanders will favor spending beyond the level that would maximize their utility in the current period; low demanders will favor less spending.

2. Literature

Several previous papers closely relate to our work. Using static models, Wilson (1998) and Hoyt and Lee (2003) show that consumers in high-income communities who want to encourage exit of the poor will overprovide public goods. In contrast to our model, however, the poor are expelled to reduce the current burden of subsidizing their public consumption, rather than to shape the composition of the future electorate. Thus, our paper gives a different perspective on extremism by offering an explicitly dynamic model based on electoral uncertainty, where initial policies affect the future outcomes via emigration.

Like Wilson (1998) and Hoyt and Lee (2003), Epple and Romer (1991) present a static model where voters who choose local policies consider how policies affect the intercommunity migration equilibrium. Their model focuses on intracommunity redistribution, not public-good provision, and so the notion of extremism does not arise.[2]

The simplicity of their static models allows these papers to consider general equilibrium effects. The complications of a dynamic model force us instead to take a partial equilibrium approach: we focus on incentives within a single community without fully treating the intercommunity equilibrium. Another paper on extremism that considers dynamics in a partial equilibrium model is Glaeser and Shleifer (2005). That paper discusses Mayor Curley of Boston, who used wasteful redistribution to his poor Irish constituents and incendiary rhetoric to encourage richer citizens to emigrate from the city, thereby shaping the electorate in his favor. Curley won elections, but Boston stagnated. Our model resembles Glaeser and Shleifer's in considering how current policy affects migration and thus future policy, but it differs in several ways. Whereas they focus on the incentives of vote-maximizing incumbent officials, we consider the preferences of residents, and so can apply our model to referenda.[3] Whereas Glaeser and Shleifer consider redistribution, we allow for a broader range of policies, showing

how rational citizens may prefer a policy more extreme than the one which, absent migration, they would prefer. Lastly, whereas Glaeser and Shleifer consider redistribution that necessarily benefits the favored group, we show that the majority may favor a policy that hurts all citizens in the short run, including its own members.[4]

We also build on previous work that shows how a current majority attempts to affect future policy. Incumbents may favor budget deficits [Alesina and Tabellini (1988), Tabellini and Alesina (1990)] or inefficient tax systems [Cukierman, Edwards, and Tabellini (1992)] to limit a future government's ability to adopt policies the current government opposes. Glazer (1989) argues that collective choices will show a bias towards durable projects, partly because durability ensures that the current majority can obtain the services it prefers in future periods when a different policymaker may be in power. A survey of this literature is provided by Alesina and Perotti (1995).

Extremism can also arise when a party reflects the preferences of its activists, who are more extreme than other voters or party members (see Aldrich (1983)). Extremism can also serve electoral purposes. Glazer, Gradstein, and Konrad (1998) consider an incumbent who creates a cost to voters of changing the party in power by setting a policy so extreme that the challenger would change it despite the heavy cost of making the change. But swing voters may be more concerned than politicians about these costs, while having more moderate policy preferences. Those who expect the challenger to implement the costly policy change and want to avoid it will therefore support the incumbent.

Lastly, our paper relates to the behavior of religious groups, which may require strict observances with the aim of discouraging free riders (people who enjoy the religious fervor of others but show little themselves) from joining the group.[5]

3. The Model

3.1. Basic assumptions

To illustrate the effects we have in mind, the model must have two types of voters and two time periods. Emigration must occur in period 0, affecting the composition of the population in period 1 and hence the vote in that period, and the extent of emigration must depend on

the policy adopted in period 0.

In particular, let the city contain two types of voters, denoted a and b. The types prefer different levels of a government policy variable, denoted z. Preferences for the two types are represented by the strictly concave utility functions $u_a(z)$ and $u_b(z)$.[6] The public policy could represent the level of a public good. Alternatively, z could represent non-budgetary policies, such as the strength of affirmative action, the stringency of building codes, the years of schooling in a language, and so on. We do assume, however, that utility from the government policy is independent of the city's population size.

The model has two time periods, 0 and 1. In each period, two citizen-candidates, one from each voter type, compete in an election.[7] The policy in a given period accords with the preferences of the winning candidate, who attracts voters of his type.

If the winning candidate always belonged to the majority type in the population, then the majority in period 1 would have no incentive to induce emigration by members of the minority. The model is therefore interesting only if the election outcome is not deterministically dependent on the population composition. We therefore suppose that voter turnout is random, with the probability that a type-i candidate wins increasing with the proportion of the city's population that belongs to his type. Let θ^0 denote the proportion of a-types in the city's population in period 0 and θ^1 denote the proportion in period 1. Then, the probability that the a-type candidate wins in period i is given by $g(\theta^i)$, for $i = 0, 1$. Letting π^i, $i = 0, 1$, denote these probabilities,

$$\pi^0 \;=\; g(\theta^0); \qquad \pi^1 \;=\; g(\theta^1). \tag{1}$$

The function g naturally satisfies $g'(\cdot) \geq 0$. Thus, as the population share of the a-types increases in a given period, the probability that an a-type wins the election in that period rises (or stays constant). Moreover, as θ^i approaches 1, $g(\theta^i)$ also approaches 1. However, g could reach unity while θ^i is still well below 1, indicating that the type-a candidate is almost certain to win once θ^i is sufficiently large.

Although θ^0, the proportion of a-types in period-0, is exogenous, the proportion θ^1 in period 1 can be affected by emigration from the city. Such emigration is in turn determined

by the policy adopted in period 0. Thus, each voter type sets its proposed z level in period 0 with an eye toward this emigration, attempting to increase its chances of winning the election in period 1.

3.2. The objective function

It is useful to first consider the objective function for an individual of a particular type (an a-type), then turning to the type-b emigration decision. Observe that, since period 1 is the terminal period, a type-i candidate will favor a z level in period 1 to maximize the utility his type in period 1. In other words, the type-a candidate will propose the period-1 policy that maximizes $u_a(z_a)$. The resulting policy, denoted z_a^*, satisfies $u_a'(z_a^*) = 0$, and we call it the type-a voter's ideal point. Since each type proposes its ideal point in period 1, the expected utility of a type-a voter in that period is then

$$\pi^1 u_a(z_a^*) \ + \ (1-\pi^1)u_a(z_b^*), \tag{2}$$

where $u_a(z_b^*)$ is the utility of a type-a person when the type-b candidate wins in period 1.

To write the overall objective function, let the policy proposed by a type-a candidate in period 0 be z_a^0. Then, conditional on winning in period 0, an a-type's discounted expected utility in this period is

$$V_a \ \equiv \ u_a(z_a^0) \ + \ \delta[\pi^1 u_a(z_a^*) \ + \ (1-\pi^1)u_a(z_b^*)], \tag{3}$$

where $\delta \leq 1$ is the intertemporal discount factor, which is common across types.[8]

3.3. Emigration

If the b-types are unhappy with the period-0 policy, they may emigrate. The level of z_a^0 can thus affect the population proportion θ^1 and hence the probability π^1 that the a-types win in period 1. To see how, let $\overline{u}_b$ denote the utility available to b-types outside the city in each period, which can be enjoyed if the individual emigrates from the city. We assume that people can emigrate only in period 0, immediately after the election reveals the chosen government policy. Emigrating, however, entails a moving cost of m_b, whose magnitude is specific to the

individual. Thus, after emigrating, discounted utility for a b-type is $(1+\delta)\overline{u}_b - m_b$. An individual b-type will then emigrate if

$$u_b(z_a^0) \;+\; \delta[\pi^0 u_b(z_a^*) \;+\; (1-\pi^0)u_b(z_b^*)] \;\;<\;\; (1+\delta)\overline{u}_b \;-\; m_b, \tag{4}$$

or if

$$m_b \;\;<\;\; \tau_b \;-\; u_b(z_a^0), \tag{5}$$

where τ_b equals $(1+\delta)\overline{u}_b$ minus the second expression on the left-hand side of (4).[9] Thus, emigrants are people with low moving costs. In deriving (4), we suppose for simplicity that a b-type does not foresee emigration by others in computing the post-election utility from remaining in the city. Thus, in the left-hand side expression in (4), the probability that the a-types win in period 1 remains at π^0, its period-0 value.[10]

Let $f(\cdot)$ denote the density of moving costs, which is common to both types. Then, using (5), the fraction of b-types emigrating is

$$\int_{\underline{m}_b}^{\tau_b - u_b(z_a^0)} f(m_b)dm_b \;\;=\;\; F[\tau_b - u_b(z_a^0)], \tag{6}$$

where $\underline{m}_b$ is the minimal m_b value and $F(\cdot)$ is the cumulative distribution function corresponding to $f(\cdot)$. In order to ensure that emigration will be responsive to the level of z_a^0, we make the following assumption: (A1) *some, but not all, b-types emigrate when z_a^0 is set at z_a^* (the ideal point of a type-a voter).* Given (6), this assumption requires satisfaction of the inequalities

$$\underline{m}_b \;\;<\;\; \tau_b \;-\; u_b(z_a^*) \;\;<\;\; \overline{m}_b, \tag{7}$$

where $\overline{m}_b$ is the maximal m_b value. Note that (7) implies $f[\tau_b \;-\; u_b(z_a^*)] > 0$.

3.4. The effect of z_a^0 on π^1

As a prelude to analyzing the choice of z_a^0, we must explore the effect of this policy variable on π^1, the probability that the a-types win the period-1 election. This effect arises through z_a^0's effect on the population proportion θ^1. To derive the connection between θ^1 and z_a^0, let n_a^0 and n_b^0 denote the type-a and type-b populations in period 0. Recognizing that the period-1 type-b population equals $(1-F)n_b^0$, it follows that

$$\theta^1 \;=\; \frac{n_a^0}{n_a^0+(1-F)n_b^0} \;=\; \frac{n_a^0}{n_a^0+n_b^0}\;\frac{n_a^0+n_b^0}{n_a^0+n_b^0-Fn_b^0} \;=\; \frac{\theta^0}{1-(1-\theta^0)F}, \tag{8}$$

where the arguments of F from (6) are suppressed. Next, (8) is substituted into (1), which gives π^1, the probability that the a-types win in period 1, as a function of z_a^0:

$$\pi^1 \;=\; g\left[\frac{\theta^0}{1-(1-\theta^0)F[\tau_b-u_b(z_a^0)]}\right]. \tag{9}$$

Again, to ensure that the a-types have an incentive to induce emigration, we make a second assumption about the probability that the a-types win the period-1 election: (A2) *when $z_a^0 = z_a^*$, π^1 remains sufficiently small so that an a-type is not assured of winning.* Formally, this assumption means that, when g in (9) is evaluated at $z_a^0 = z_a^*$, $\pi^1 < 1$ holds. Note that this assumption implies that $g' > 0$ is satisfied when $z_a^0 = z_a^*$.

Differentiating(9) shows how π^1 depends on z_a^0:

$$\begin{aligned}\frac{\partial\pi^1}{\partial z_a^0} \;&=\; g'\frac{\partial\theta^1}{\partial z_a^0}\\ &=\; -g'f\frac{\theta^0(1-\theta^0)}{[1-(1-\theta^0)F]^2}u_b'(z_a^0)\\ &\equiv\; -h(z_a^0)u_b'(z_a^0)\end{aligned} \tag{10}$$

where $h \geq 0$ refers to the first three terms in the second line of (10), which depend on z_a^0 via g', f, and F.

To explore the sign of (10), suppose (without loss of generality) that the a-types are the high demanders of the government policy, so that $z_a^* > z_b^*$. Then, consider values of z_a^0 greater than z_b^*. At such values, which are natural candidates for the type-a optimum, $u_b'(z_a^0)$ is negative. If $h(z_a^0)$ is positive, then $\partial\pi^1/\partial z_a^0$ is also positive. The probability that the a-type candidate wins therefore increases with z_a^0. The reason, of course, is that an increase in z_a^0 pushes the government policy farther away from the ideal point of the b-types, leading to more emigration and fewer remaining members of this group in the period-1 population.

As stated above, assumptions (A1) and (A2) ensure that f and g' are positive when $z_a^0 = z_a^*$. As a result, $h(z_a^*) > 0$ holds, implying that $\partial\pi^1/\partial z_a^0$ is positive when $z_a^0 = z_a^*$, a conclusion that holds by continuity in a neighborhood of z_a^*. For other values of z_a^0, however, this derivative can be zero.[11]

3.5. Choosing z_a^0

The choice problem for the a-types can now be solved by choosing z_a^0 to maximize (3), taking into account the effect on π^1. Using (10), the first-order condition is

$$\begin{aligned} \frac{\partial V_a}{\partial z_a^0} &= u_a'(z_a^0) + \delta[u_a(z_a^*) - u_a(z_b^*)]\frac{\partial \pi^1}{\partial z_a^0} \\ &= u_a'(z_a^0) - \delta[u_a(z_a^*) - u_a(z_b^*)]h(z_a^0)u_b'(z_a^0) = 0, \end{aligned} \tag{11}$$

where $u_a(z_a^*) - u_a(z_b^*) > 0$ is the type-a utility gain from winning in period 1. Eq. (11) says that, when z_a^0 is optimal, the period-0 utility change from a marginal increase in z_a^0 equals the discounted benefit from the greater likelihood of electoral victory in period 1.

To derive the implications of (11), note first that since z_a^0 is below the type-a ideal point when $z_b^* < z_a^0 < z_a^*$, $u_a'(z_a^0)$ is positive in this range, while $u_b'(z_a^0)$ is negative. It then follows from (11) that V_a increases over this range of z_a^0 values.[12] Next, observe that since $h(z_a^*) > 0$ holds under (A1) and (A2), $\partial V_a/\partial z_a^0$ is positive at $z_a^0 = z_a^*$, where $u_a' = 0$. Since values in the range $(z_b^*, z_a^*]$ therefore cannot be optimal, the preferred z_a^0 level must lie above z_a^*, at some point where both $u_a'(z_a^0) < 0$ and $h(z_a^0) > 0$ hold and (11) is satisfied. Thus, in the period-0 election, the type-a candidate proposes an *extreme* policy, higher than his already-high ideal point.

Our argument can be restated in simpler intuitive terms. Starting at the type-a ideal point, consider a small increase in the policy variable. Because z_a^* is the type-a optimum, this change has only a second-order effect on the utility of an a-type. But the move away from z_a^* has a first-order effect on the utility of a b-type (whose ideal point differs from z_a^*), inducing some b-types to emigrate. Thus, the type-a ideal point, which would be optimal in a one-period model, cannot be optimal a two-period model with emigration; the a-types instead prefer an extreme policy.

We can repeat this argument for the b-types to obtain an analogous conclusion. In particular, the policy level proposed by the type-b candidate is also extreme, lying below z_b^*, his already-low ideal point. It is important to note that, because the type-a optimality condition (11) does not involve z_b^0, the type-a choice is independent of the proposed policy of the b-types. Since an analogous conclusion holds for the type-b choice, interaction between the types plays no role in their extreme choices. Summarizing yields

Proposition 1. *Extremism characterizes policy proposals. The policy proposed by the high-demand candidate lies above his type's ideal point; the policy proposed by the low-demand candidate lies below his type's ideal point.*

A final point is that the optimal z_a^0 must yield incomplete emigration of the b-types. To see this conclusion, note that, since complete b-type emigration yields an h value of zero while requiring $z_a^0 > z_a^*$ and hence $u_a'(z_a^0) < 0$, the optimality condition (11) cannot be satisfied under these circumstances. Intuitively, at the optimum, a-types must enjoy some marginal gain from increasing z_a^0 to balance the loss from distorting consumption in period-0. If all the b-types emigrate, such gains are exhausted, indicating that z_a^0 has been increased too far.[13]

4. Intercommunity Analysis

Although emigration is the crucial element in our model, the preceding analysis has said little about the destinations of the emigrants or about the functioning of the entire system of cities. It is not our goal to provide a complete equilibrium model, but some discussion of these issues can be provided.

A particularly simple picture emerges if we imagine that the economy contains many homo-

geneous type-a and type-b cities, along with a set of heterogeneous cities like those considered in the analysis. Since the residents of the homogeneous cities would have no incentive to induce emigration of any of their residents, each would set policy at the ideal point for their type (z_a^* or z_b^*) in both periods. In such a setting, emigrants from a heterogeneous city would relocate to a homogeneous city inhabited by individuals of their type. Note the outside type-b utility level appearing in (4) would then satisfy $\overline{u}_b = u_b(z_b^*)$, the utility achieved at the ideal point.

Random voter turnout in each heterogeneous city would determine which type wins the period-0 election and thus the identities of the emigrants subsequently leaving the city. Depending on the vote outcome, some cities would generate type-a emigrants and some would generate type-b emigrants, with both groups relocating to homogeneous cities for their type. Because inducement of complete emigration is not optimal, each heterogeneous city would remain so in period 1, although its population would show an increase in the share of the winning group from period 0.

This scenario is, of course, incomplete because it does not explain why some cities are initially homogeneous and some initially heterogeneous. But it does suggest that emigration induced by extremist policies may push the economy toward a more-homogeneous collection of cities.

In a fuller analysis, the initial collection of cities would exhibit arbitrary population compositions, with all cities possibly heterogeneous. People may then migrate from one heterogeneous city to another, so that a representative city might both generate emigrants and receive incoming migrants following the election in period-0. However, since our model is not set up to handle this possibility, major changes would be required to provide the requisite analysis. Such a task is left for future work.

We have not yet discussed the welfare implications of extremist policies. Two externalities are involved: the majority group does not care about the minority group's utility loss from an unfavored policy, nor does it care about the group's migration costs. While it is therefore not obvious whether extreme policies increase or reduce aggregate welfare relative to the case where the chosen policy corresponds to the ideal point of one voter type, welfare could decline under some conditions. For example, suppose the majority adopts a policy near its ideal point,

so that it suffers only a small decrease in period-0 utility. Furthermore, suppose that the intertemporal discount factor δ is small, so that the present value of the majority's expected gain in utility in period 1 is small. While the majority would therefore gain little from its extremist policy, members of the minority could experience more-substantial negative effects. They suffer from a worse policy if they do not move, a loss that could be relatively large since the utility slope far from the ideal point may be steep, and they incur moving costs if they do emigrate. Therefore, aggregate welfare could be lower than in the case where the majority sets the policy at its ideal point. More general consideration of welfare issues, however, would require a richer model than presented in this paper.

5. Further applications

Our essential idea is that a voter may favor a policy that hurts him in the current period if it hurts others more, thereby inducing some people to emirate, and thus making it more likely that the policy in the future is close to the voter's preferences. The general principle is powerful, predicting that, when current policy can affect future policy, the majority in the current period will never favor a policy at its ideal point.

The analysis can be extended from one dimension to consider policies in multiple dimensions. In the spatial model, a voter has an ideal point, with utility decreasing for any movement away from that point. Then, in the initial period, a voter would favor a policy that lies away from his ideal point and induces emigration of people with ideal points different from his. The direction of movement away from the ideal point would be chosen to maximize emigration for a given reduction in the voter's own utility.

Though our model focuses on the choice of a government policy, the general idea can apply much more broadly. For example, union members may favor labor contracts that appeal to certain types of people but not others. Thus, if the current members have large families, the union membership may favor fringe benefits given to children over a cash payment that could be even larger than the cost of the benefits. Such a compensation package will induce workers who also have large families to join the union while causing unmarried workers to find its jobs unattractive. Such a change of composition in the union membership could lead the union to

favor family-oriented benefits in the future.

Our approach can apply not only to policies that cause emigration of residents, but also to policies that expel particular industries from a city. For example, residents may fear that polluting firms exert excessive political influence in the choice of environmental standards. By adopting stringent environmental policies in the current period, policies more stringent than those that would maximize current utility, voters may encourage some of the polluting firms to exit the city. This change will reduce the industry's political influence in the future, benefiting the residents. Thus, while a stringent policy may appear to result from strongly pro-environmental groups or voters, the policy may actually indicate a desire to reduce anti-environmental pressures in the future.

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Footnotes

[1]Property-value considerations, however, may weaken the incentives of childless voters to limit spending on schools. Knowing that good schools raise house resale values, such voters may acquiesce to spending measures that they would otherwise oppose. See Brueckner and Joo (1991) for an analysis.

[2]Since low-income voters prefer full expropriation of the rich while high-income voters prefer zero redistribution, an interior ideal point that can be used as a reference point for extremism does not exist.

[3]Nastassine (2005) considers a citizen-candidate model, exploring how mobility affects a person's willingness to run for office and showing how increased mobility can shift the policy outcome towards the preferred policy of the less mobile citizens.

[4]Although the majority benefits from the government policy in Glaeser and Shleifer's model, the authors argue elsewhere in their paper that the entire population ultimately loses from punitive redistribution and the resulting emigration, which harms the economic vitality of the city.

[5]For a survey of the relevant work, see Iannacone (1997).

[6]Suppose that z is a publicly-provided private good z produced at unit cost c, which is consumed along with a conventional private good x bought on the market. Then, $u_a(z) \equiv \widetilde{u}_a(y - cz, z)$, where $\widetilde{u}_a(\cdot)$ gives type-a preferences for x and z consumption, and y is income.

[7]Since we have only two types of voters, our model greatly simplifies the citizen-candidate models introduced by Osborne and Slivinski (1996) and Besley and Coate (1997)).

[8]Eq. (3) gives the relevant portion of a broader type-a objective function, which gives expected utility prior to the period-0 election. That function is

$$\pi^0 \cdot (\text{discounted expected utility} \mid a\text{-types win in period 0}) +$$

$$(1 - \pi^0) \cdot (\text{discounted expected utility} \mid b\text{-types win in period 0})$$

Since the second-half of this expression is independent of z_a^0 and π^0 is a constant, (3) is the relevant objective function.

[9]Note that a different timing of emigration would disrupt the model. In particular, if the

b-type moved at the end, rather than the beginning, of period 0, then the RHS of (4) would include a $u_b(z_a^0)$ term, which would cancel the term on the LHS, leaving no effect for z_a^0.

[10]While voters thus behave myopically in computing the expected utility from not emigrating, an alternative approach based on rational expectations could be implemented as follows. The probability π^0 in (4) would be replaced by π^1, the actual probability of a type-a period-1 victory; the inequality in (4) would be replaced by an equal sign; m_b on the RHS would be replaced by $\widehat{m}_b$, which denotes the value of m_b where a b-type is indifferent between staying and emigrating. Then, the argument of F in equation (9) below would be replaced by $\widehat{m}_b$. The new version of (4) defines $\widehat{m}_b$ conditional on π^1 and the new (9) says that π^1 is consistent with $\widehat{m}_b$. The two equations would then jointly determine the values of π^1 and $\widehat{m}_b$, and the analysis following (9) would require different computations of the key derivatives. In the interest of simplicity, the simpler myopic approach embodied in (4) is used instead.

[11]For example, if z_a^0 assumes a value such that $\tau_b - u_b(z_a^0) < \underline{m}_b$, then no b-types emigrate and a marginal increase in z_a^0 has no effect on π^1 (the relevant z_a^0 values lie close to z_b^*). Conversely, if $\tau_b - u_b(z_a^0) > \overline{m}_b$ holds (requiring a z_a^0 value well above z_a^*), then all the b-types emigrate, and an increase in z_a^0 again has no effect on π^1. In both cases, f and hence h equals zero (see (7)), so that $\partial\pi^1/\partial z_a^0 = 0$.

[12]Observe that this conclusion obtains regardless of whether $h(z_a^0)$ and hence $\partial\pi^1/\partial z_a^0$ equals zero, so that it holds even at z_a^0 values near z_b^* where no one emigrates.

[13]Comparative-static analysis could focus on how the parameters θ^0, τ_b, and δ affect the choice of z_a^0. Only the last of these effects is unambiguous, with an increase in δ raising z_a^0. Since the benefits from future victory increase with δ, z_a^0 is pushed farther above the ideal point.