Endogenous discrimination, migration prospects, and the protection of ethnic minorities

Frédéric DOCQUIER, Hillel RAPOPORT*

ABSTRACT. – We consider an ethnically-divided developing country, where education is the only investment outlet and the minority is subject to governmental discrimination. We endogenize ethnic discrimination in a political economy framework, and investigate how it is affected by migration prospects. We show that the possibility of emigration tends to protect the minority from excessive rent-extraction, but may paradoxically turn out to be a curse for its remaining members when migration costs are sufficiently low.

Discrimination endogène, perspectives de migration et protection des minorités ethniques

RÉSUMÉ. – Nous nous intéressons à un pays en développement divisé sur le plan ethnique, où l'éducation est le seul investissement possible, et où la minorité est sujette à une discrimination de la part du gouvernement. Dans un cadre d'économie politique, nous endogénéisons la discrimination ethnique et analysons l'effet sur celle-ci des perspectives de migration. Nous montrons que les possibilités d'émigration tendent à protéger la minorité contre une discrimination excessive mais peuvent paradoxalement se révéler être défavorable pour ceux de ses membres demeurant au pays lorsque les coûts de migration sont suffisamment faibles.

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Corresponding author: Hillel Rapoport, Department of Economics, Bar-Ilan University, 52900 Ramat Gan, Israel. Email: hillel@mail.biu.ac.il. We thank Karine Tremblay for fruitful discussions and for the reference to her own work.

1 Introduction

It is striking that in most Western countries, ethnic discrimination is largely a market phenomenon, whereas in many developing countries, it is rather government-mandated. A classical example of ethnic discrimination policy is the *bumiputera* (son of the soil) movement in Malaysia and Indonesia, directed mainly against the Chinese minority; other well-known examples include the official restrictions faced by the Tamils in Sri Lanka, the Indians in Fiji, or the generalized instrumentalization of tribalism in African politics. All this is quite well documented in the sociopolitical literature on ethnic conflicts (*e.g.*, HOROWITZ [1985] and [1998], GURR [1993]). More often than not, local governments try to justify these steps under labels such as "preferential" or "affirmative actions" policies, aiming, it is argued, at correcting historical injustice inherited from the colonial period or the previous ethnic rule. Economic studies, on the other hand, tend to focus on the consequences of discrimination on education, occupation, and migration patterns of minorities (BRENNER and KIEFER [1981], EPSTEIN, HILLMAN and URSPRUNG [1999]; TREMBLAY [2000], KATZ and RAPOPORT [2001], FANG and NORMAN [2001]). In literature, ethnic discrimination is generally treated as an exogenous variable, whose extent depends mainly on moral norms and values reflected in the country's political culture. In many instances indeed, ethnic discrimination appears like if it were guided by passions such as hatred and envy, resulting in intergroup hostility (CARLTON [1995], AZAM [2000]). In such a process, one group (the majority) is ready to give up some of its resources in individual or collective actions that aim at depriving the other group (the minority), making both groups worse off in terms of real wealth. Even in that case, however, there seems to be "method in the madness" (BARDHAN [1997]), an observation that is consistent with the political-economy premise according to which ethnic discriminations and conflicts are, at least partly, rationally organized for appropriation and redistributive purposes (CONGLETON [1995], BENABOU [1996], OSBORNE [2000], ROWLEY [2000]).[1]

In keeping with this approach, we consider a society divided between a ruling majority and a discriminated-against minority, and where education is the only investment outlet: people with similar labor-market attributes are rewarded equally in the marketplace, but their education-generated net income may differ as a result of differences in the way they are treated by the government. Such discriminative treatment is of course unlikely to be achieved directly (*i.e.*, through the imposition of an official "ethnic tax"); but in practice, many indirect extortion techniques can yield the same results: the tax structure can be distorted and penalize activities where ethnic minorities are overrepresented (alternatively, privileges can be granted to the government's ethnic constituency through fiscal exemptions, reserved access to public jobs and subsidies, etc.); besides, minority members can be repeatedly victims of financial extortion, or forced to use bribes or majority name lenders

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1. See also EASTERLY [2001], Chapter 13.

to circumvent ethnic restrictions.[2] Education, therefore, has a lower return for the minority; at the same time, education provides its owners with extended migration opportunities (CARRINGTON and DETRAGIACHE [1998], KATZ and RAPOPORT [2001]).

In this paper, we investigate how migration prospects affect the level of domestic discrimination experienced by the minority group. Our approach has some similarities to that of EPSTEIN *et al.* [1999], TREMBLAY [2000], and DOCQUIER and RAPOPORT [2003]. As distinct from EPSTEIN *et al.* [1999] and TREMBLAY [2000], where individual productivity is given, in our setting, productivity depends on education decisions and is therefore endogenously determined. As a result, the pressure put on the minority is limited by an internal Laffer effect even when there are no exit options. By contrast to DOCQUIER and RAPOPORT [2003], who assumed discrimination to take the form of proportional taxation, and emigrants to positively self-select within a pool of potential candidates, ethnic discrimination is formalized as a lump-sum tax levied on each educated minority member, and migrants are assumed to be picked up randomly by immigration authorities in the receiving countries. These assumptions, which are discussed and justified below, induce a number of specific theoretical predictions; notably, by contrast to the above cited studies, our model generates the intriguing result that increased migration opportunities may well increase the equilibrium level of domestic discrimination.

The remainder of this paper is organized as follows. Section 2 presents the model and discusses its main assumptions. In Section 3, we characterize the benchmark closed economy solution, *i.e.*, we determine the degree of discrimination that is seen as optimal by the dominant group when there is no possibilities of emigration. We then investigate in Sections 4 and 5 how migration prospects affect the level of domestic discrimination experienced by the remaining members of the minority. We find the intuitive result that migration prospects have a protective effect for the minority, while this needs not be the case in any circumstances. More precisely, this is true only if migration costs stand at intermediate levels; in this case, the fiscal pressure put on the minority is inversely proportional to the cost of migration and, in addition, no migrations are observed at equilibrium (*i.e.*, emigration remains potential). Below a critical threshold for migration costs, however, this is reversed: lower migration costs induce higher levels of discrimination, and migration outflows are effectively observed at the politico-economic equilibrium. Section 6 summarizes the results and offers concluding remarks.

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2. Malaysia seems to be a laboratory where the full set of discrimination policies is displayed. TREMBLAY [2000] documents the generalized use of indigenous name-lenders by ethnic Chinese, as well as the biased allocation of public jobs, education subsidies and other publicly-provided goods in Malaysia. For that same country, FANG and NORMAN [2001] document and explore the impact of job discrimination in the public sector on ethnic inequality in a signalling model of education investment. In the same vein, BARDHAN [1997: 1394] writes: "the preferential policy for business permits and contracts are easily bypassed with appropriate deals and bribes: in Malaysia and Indonesia these deals are called Ali-Baba combinations, Ali being the Muslim frontman and Baba the Chinese businessman. In general the preferential policy… has largely resulted in a substantial transfer of rent to the politically well-connected. …The ultimate rationale behind preferential policies in civil service jobs, etc., has to do …with institutionalized rent-sharing."

2 The model

Consider a small open economy whose population is divided between a majority group (denoted by M) and a minority group (denoted by m). Ethnic affiliation is an inherited trait that can not be changed and is identifiable at no cost. The demographic share of the minority is μ, and that of the majority is $1 - \mu$. The minority is defined by the very fact that it is discriminated against, even if it is demographically dominant. Agents live two working periods and start their life with an initial level of human capital that is identical for all and normalized to unity:

$$h_{i,t}^1 = 1 \; \forall i.$$

During the first period, each agent can allocate a "take it or leave it" share e of his or her time to education. If no investment in education is undertaken, the agent's stock of human capital is unchanged. For a non educated agent, therefore:

$$h_{i,t+1}^2 = 1.$$

If the investment in education is undertaken, the agent stock of human capital is increased in a way that depends on his or her individual ability to transform the time spent for acquiring education into valuable productive skills. Individuals' abilities are assumed to be distributed uniformly on the interval $[\overline{a}, \underline{a}]$ and are identically distributed across groups. For an educated agent i, the individual stock of human capital at the beginning of the second period can therefore be written as:

$$h_{i,t+1}^2 = 1 + a_i.$$

In this economy, the minority is subject to a discriminative treatment that we formalize as a lump-sum penalty T levied on each educated minority member. The reason for this is that we assume education to be a signal of ability-to-pay the ethnic tax, while non-educated agents are assumed to remain at the subsistence level, thus escaping taxation. It is a lump-sum penalty because in societies with such a political culture, discriminated-against people are rightly cynical about government and resist paying taxes; hence, individual incomes are imperfectly observable, and taxation is introduced arbitrarily, according to observable traits (ethnicity, and education). Since we are not interested in the fate of the majority elite, or in the growth effects of discriminations, we assume for analytical convenience that redistribution benefits every member of the majority, educated or not. The individual transfer received by each member of the majority is denoted by θ.

Agents have the possibility to migrate and export their human capital abroad, to a discrimination-free country. To neutralize the effect of intercountry wage differentials on migration decisions, the return to human capital is

assumed to be the same in the source and the destination country. In this setting, it is clear that non-educated individuals, as well as the members of the majority group regardless of their education level, have no incentive to emigrate. Educated members of the minority, by contrast, compare the cost of emigration to that incurred if they remain is the home country.[3]

Our model may be interpreted as a repeated dynamic game with complete information. At each period of time, young minority members make their education decisions according to the expected return on education, net of the expected ethnic tax. From the majority viewpoint, at each period, ethnic discrimination yields a tax revenue that depends on the number of educated among the minority, *i.e.*, on education decisions made during the previous period. For the sake of simplicity, we exclusively derive long-run solutions by assuming: (i) that the ex-post ethnic tax is perfectly anticipated by minority members and, (ii) that the government selects the level of tax taking account of the induced effects on education. In other words, we treat our dynamic game as a static problem; in a pure dynamic setting, the intertemporal consistency of our long-run solution should ideally be based on reputation mechanisms and credibility constraints.

The education decision is taken under uncertainty regarding possible future migration. Indeed, education buys its owner the option to emigrate at a given probability of migration due to the presence of restrictions raised by immigration authorities in the destination country. The two main parameters of this model, therefore, are the probability of migration, denoted by p, and the fixed migration cost, denoted by c.

3 The closed economy solution

In the economy without any migration opportunity, agents decide whether to invest in human capital by comparing their life-time income with and without education.

The investment conditions for a member a_i^m of the minority and for a member a_i^M of the majority are, respectively:

$$1 - e + \frac{1 + a_i^m - T}{1 + r} > 1 + \frac{1}{1 + r}$$

and

$$1 - e + \frac{1 + a_i^M + \theta}{1 + r} > 1 + \frac{1 + \theta}{1 + r}$$

where r denotes the private discount rate. The investment in education will be undertaken if agent i's ability is higher than a critical value, *i.e.*, if, for minority and majority members respectively:

(1)
$$a_i^m > a_c^m \equiv e(1 + r) + T$$

and

(2)
$$a_i^M > a_c^M \equiv e(1 + r)$$

To concentrate on interior solutions, we assume that $e(1 + r) < \bar{a}$, that is, a positive proportion of the majority always opts for education. Since $a_i^m > a_i^M$ for any $T > 0$, it is straightforward that, in average, the minority will be poorer than the majority for two reasons: because of the discriminative transfer, and because of the negative effect of this transfer on human capital formation within the minority.

The majority government is exclusively concerned by the discounted sum of discriminative transfers to its ethnic constituency (consisting of current and future generations). At the steady state, maximizing this discounted sum involves maximizing the annual flow of discriminative revenues. In addition, since we do not explore the redistributive impact of transfers within the majority, we assume that each majority member receives an identical amount of transfer, θ. This implies the following budget constraint relating the financial transfer per majority member to the ethnic tax per educated minority member:

$$\theta = \frac{\mu}{(1 - \mu)} T \int_{a_c^m}^{\bar{a}} U(a) da$$

Developing the integral and using (1) gives:

(3)
$$\theta = \frac{\mu}{1 - \mu} T \left[\frac{\bar{a} - e(1 + r) - T}{\bar{a} - \underline{a}} \right]$$

The optimal discrimination penalty is obtained by maximizing this second order polynomial with respect to T. The first order condition is:

$$\frac{\partial \theta}{\partial T} = \frac{\mu}{(1 - \mu)(\bar{a} - \underline{a})} [\bar{a} - e(1 + r) - 2T] = 0$$

This gives the optimal penalty from the majority's perspective in the economy closed to emigration, denoted T_{cl}^*, and which corresponds to the top of the Laffer curve:

$$（4） \qquad T_{cl}^* = \frac{\overline{a} - e(1+r)}{2}$$

Substituting this result into the budget constraint gives the individual transfer received by each member of the majority in the closed economy: [4]

$$（5） \qquad \theta_{cl}^* = \frac{\mu}{1-\mu} \frac{[\overline{a} - e(1+r)]^2}{4(\overline{a} - \underline{a})}$$
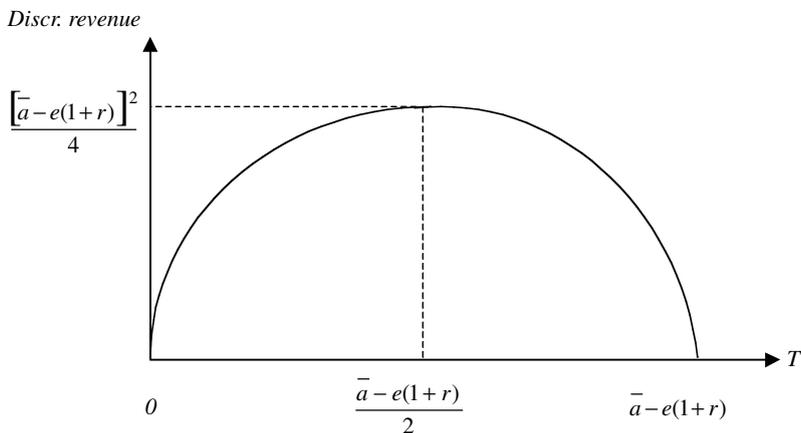
Moreover, substituting T_{cl}^* in (1) gives the ability of the critical minority agent in the closed economy:

$$a_{cl}^m \equiv \frac{\overline{a} + e(1+r)}{2}$$

which is indeed superior to the critical ability within the majority.[5]

The optimal discriminative tax inflicted on the minority when the economy is closed to emigration is represented in Figure 1:

FIGURE 1
Laffer Curve in a closed economy

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4. Obviously, since redistribution is lum-sum and benefits all majority members equally, maximizing the transfer received per majority member and maximizing total revenue are equivalent.
5. That is, the proportion of educated is lower for the minority. Note that redistribution does not influence education decisions for the majority since the transfer received is not conditioned upon educational requirements.

4 Discrimination in the open economy

We now turn to the economy opened to migrations and study the effects of migration prospects and costs on equilibrium outcomes. As mentioned above, emigration is not a relevant option for majority members since there are no inter-country wage differentials. For minority members, on the contrary, migration prospects affect the expected return to education and, hence, impinge on education decisions. As we detail below, migration decisions essentially depend on the sign of $T - c$. Hence, two Laffer curves have to be distinguished when there is an exit option. The first curve, called $L1$, is relevant for $T - c < 0$ and is exactly the same as that obtained in the closed-economy. The second curve, called $L2$, is relevant for $T - c > 0$ and may be derived for any given migration probability. The combination of these two curves yield the global Laffer curve, which exhibits a discontinuity at $T = c$ (see Figure 2).

Formally, we proceed in two steps. We first characterize the two Laffer curves $L1$ and $L2$ separately, and then combine them.

STEP1: DERIVATION OF L1 AND L2.

As noted above, the optimal discrimination rate in the closed-economy may be lower than the migration cost $(T - c \leqslant 0)$; in this case, the relevant Laffer curve, denoted $L1$, corresponds to the case of a closed-economy. It is given by equation (3) and is the same as that represented in Figure 1. In words, minority members are assumed to stay put if the ethnic tax exactly equals to the size of migration costs.[6]

If, however, $T - c > 0$, migration prospects may have an impact on domestic discrimination. This is reflected by the Laffer curve $L2$: when $T - c > 0$ and migration opportunities arise at a given probability p, a minority member i would choose to invest in education if such an investment allows him to increase his expected lifetime income, that is, if and only if:

$$1 - e + \frac{(1 - p)(1 + a_i^m - T) + p(1 + a_i^m - c)}{1 + r} > 1 + \frac{1}{1 + r}$$

This condition may be expressed in terms of critical ability, *i.e.*, if agent i's ability is higher than a critical value:

(6) $$a_i^m > a_c^m \equiv e(1 + r) + pc + (1 - p)T$$

Using the same manipulations as above, the optimal penalty in the economy with migrations is obtained by maximizing the following expression:

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6. This is clearly not a restrictive assumption. In the case where minority members would opt for (total or partial) migration when $T = c$, the majority government should compare discriminative revenues with and without migration, i.e for $T > c$ and for $T = c - \varepsilon$ with $\varepsilon > 0$, a sufficiently small real number.

$$(7) \qquad \theta_{em} = \frac{\mu}{1 - \mu}(1 - p)T\left[\frac{\overline{a} - e(1 + r) - pc - (1 - p)T}{\overline{a} - \underline{a}}\right]$$

This yields:

$$(8) \qquad T^*_{em} = \frac{\overline{a} - e(1 + r) - pc}{2(1 - p)}$$

Plugging this expression into (7) gives the optimal individual transfer received by each member of the majority in the economy with migrations:

$$(9) \qquad \theta^*_{em} = \frac{\mu}{1 - \mu}\frac{[\overline{a} - e(1 + r) - pc]^2}{4(\overline{a} - \underline{a})}$$

STEP 2: COMBINATION OF L1 AND L2.

The majority's optimization problem in the presence of migration prospects combines the curves $L1$ and $L2$. The global curve corresponds to $L1$ for $T < c$, and to $L2$ for $T > c$, thus exhibiting a discontinuity at $T = c$. The optimal choice for the majority is the top of that discontinuous global Laffer curve. Since both $L1$ and $L2$ have the traditional concave shape, a rent-maximizing government must compare the revenues obtained for the following three possibilities: the top of $L1$, the top of $L2$, and the discontinuity point. Note that at the discontinuity point ($T = c$), the transfer received by each majority member is given by:

$$(10) \qquad \theta^*_{dc} = \frac{\mu}{1 - \mu}c\left[\frac{\overline{a} - e(1 + r) - c}{\overline{a} - \underline{a}}\right]$$

In general terms, the optimal discrimination tax may be defined as follows:

> DEFINITION 1: *The optimal discrimination penalty is given by $T = T^*_{cl}$ iff $\theta^*_{cl} = \max\{\theta^*_{cl}; \theta^*_{em}; \theta^*_{dc}\}$ and $T^*_{cl} < c$, $T = c$ iff $\theta^*_{dc} = \max\{\theta^*_{em}; \theta^*_{dc}\}$ and $T^*_{cl} > c$, and by $T = T^*_{em}$ otherwise.*

The next section offers a graphical and analytical interpretation of each possible configuration.

5 Results and graphical interpretation

We first characterize the shape of the two Laffer curves sketched above and then compute the optimal discrimination rate to show how it is influenced by the parameters p and c.

We find the following results:

PROPOSITION 1: Comparing the Laffer curves $L1$ and $L2$, one obtains (i) $T^*_{em} > T^*_{cl}$ iff $\bar{a} - e(1+r) > c$ and (ii) $\theta^*_{em} < \theta^*_{cl}$ $\forall p,c > 0$.

PROOF: From (4) and (8), $T^*_{em} > T^*_{cl}$ implies $\dfrac{\bar{a} - e(1+r) - pc}{2(1-p)} >$ $\dfrac{\bar{a} - e(1+r)}{2}$ which gives $\bar{a} - e(1+r) > c$. The top of the Laffer curves $L2$ and $L1$ are respectively given by $\theta^*_{em} = \dfrac{\mu}{1-\mu} \dfrac{[\bar{a} - e(1+r) - pc]^2}{4}$ and $\theta^*_{cl} = \dfrac{\mu}{1-\mu} \dfrac{[\bar{a} - e(1+r)]^2}{4}$. It follows that $\theta^*_{em} < \theta^*_{cl}$ $\forall p,c > 0$
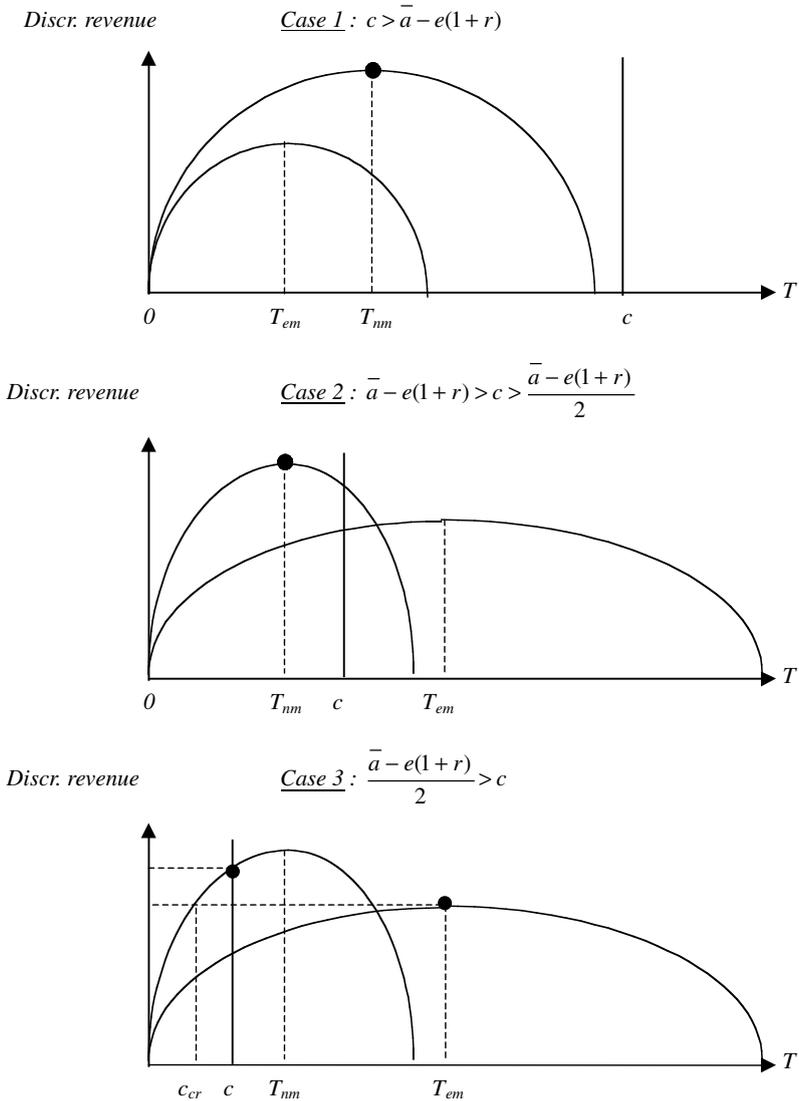
Part (*i*) of Proposition 1 implies that the optimal penalty in the migration case is higher than in the non-migration case if the migration cost is sufficiently low. It should however be noted that the critical migration cost involved $(a - (1+r)e)$ corresponds to the right bound of the closed-economy Laffer curve. Part (*ii*) of Proposition 1 means that the maximal discrimination revenue is always higher in the closed-economy than in the economy with actual migration. This implies:

COROLLARY 1: *If $T^*_{cl} \leqslant c$, the optimal penalty with migration prospects corresponds to the closed-economy solution: $T^* = T^*_{cl} = \dfrac{\bar{a} - e(1+r)}{2}$.*

The above corollary simply states formally that when the optimal penalty in the closed-economy is lower than the migration cost, migration prospects have no effects on discrimination policy; this is of course quite intuitive.

These results are apparent on Figures 2.1 and 2.2. In Figure 2.1, the migration cost is higher than the critical value given in Proposition 1. The closed-economy Laffer curve thus lies entirely at the left of the migration cost threshold. The global Laffer curve with migration prospects, hence, corresponds to the closed-economy curve (there is no discontinuity point), and the optimal penalty is not affected by migration prospects. In Figure 2.2, the migration cost is lower than $a - e(1+r)$, but higher than the optimal closed-economy solution $\left(\dfrac{a - e(1+r)}{2}\right)$. In this case, the global Laffer curve is discontinuous at $T = c$. The $L1$ curve applies for $T \leqslant c$ and the $L2$ curve applies for $T > c$. Given Proposition 1, the top of the closed-economy curve is higher than the top of the curve with actual migration outflows, so that the optimal penalty with migration prospects is still identical to the closed-economy solution. As expected, therefore, migration prospects are likely to influence the extent of discrimination only if migration costs are sufficiently low, *i.e.* lower than the closed-economy optimal penalty. In this case, as shown in Figure 2.3, the discontinuity threshold lies at the left of the closed-economy solution, on the increasing part of the closed-economy Laffer curve.

FIGURE 2
Laffer Curves with migration prospects

Discr. revenue   <u>*Case 1*</u> $: c > \bar{a} - e(1 + r)$

0 T_{em} T_{nm} c T

Discr. revenue   <u>*Case 2*</u> $: \bar{a} - e(1 + r) > c > \dfrac{\bar{a} - e(1 + r)}{2}$

0 T_{nm} c T_{em} T

Discr. revenue   <u>*Case 3*</u> $: \dfrac{\bar{a} - e(1 + r)}{2} > c$

c_{cr} c T_{nm} T_{em} T

In this case, indeed, the majority must compare two alternatives (see definition 1): to fix the penalty rate as high as the migration cost (thus making educated minority members indifferent between migrating or staying put), or choose the optimal penalty with actual migration flows.

Such a comparison can be made in terms of individual transfer received by each majority member. This procedure gives the following result:

PROPOSITION 2: *If $T_{cl}^* > c$, there exists a critical migration cost, c_{cr}, below which the optimal penalty corresponds to the top of the Laffer curve with actual migrations and above which the optimal penalty corresponds to the level of the migration cost:* $\exists c_{cr} \mid c < c_{cr} \Longrightarrow T^* = T_{em}^*$ *and* $c \geqslant c_{cr} \Longrightarrow T^* = c$.

PROOF: If $c < \dfrac{a - e(1 + r)}{2}$, $\theta_{cl}(c)$ is monotonically increasing in c while the optimal revenue with actual migrations is θ_{em}^*. If $\theta_{cl}(c) < \theta_{em}^*$, it is optimal for the majority to choose $T^* = T_{em}^*$ while if $\theta_{cl}(c) \geqslant \theta_{em}(T_{em}^*)$, it is optimal to choose $T^* = c$.

Figure 2.3 depicts the case where the migration cost is higher than the critical threshold c_{cr}. Levying a penalty that exactly corresponds to the migration cost offers a higher revenue than the maximal revenue that could be realized with actual emigration. It is thus beneficial for the majority to limit the penalty at the current level of the migration cost, thus preventing emigration. For migration costs lower than c_{cr}, however, it is in the majority's interest to select T_{em}^*.

These results may be summarized in the following extension of definition 1:

COROLLARY 2: *The optimal penalty in the presence of migration opportunities is given by $T^* = T_{em}^*$ if $c < c_{cr}$, $T^* = c$ if $c_{cr} \leqslant c < \dfrac{a - e(1 + r)}{2}$ and $T^* = T_{cl}^*$ if $\dfrac{a - e(1 + r)}{2} \leqslant c$.*

The domestic level of discrimination is therefore strongly dependent on the magnitude of migration costs. As apparent from Figure 3, where the bold line represents the optimal penalty, it is maximal when migration costs equal to zero. Indeed, for any migration cost between 0 and c_{cr}, some emigration will always take place (unless there is no discrimination at all), and the optimal penalty is inversely proportional to the migration cost, as we know from (8). The higher the migration cost, the lower the top of the $L2$ curve. The interpretation of this result is straightforward: with reduced migration costs, preventing emigration through lowered levels of domestic discrimination simply becomes too costly (in terms of foregone revenues) for the majority. If this is the case, then the pressure on the remaining minority members may be increased up to a maximum that is limited only by the internal education constraint. By contrast, for migration costs comprised between c_{cr} and $\dfrac{a - e(1 + r)}{2}$, the $L2$ curve is dominated by the constrained closed-economy curve, so that in this case, the optimal penalty is proportional to the migration cost. Finally, for higher migration costs, the closed economy solution applies.

Two important results may now be enounced. First, migration prospects do protect minority members against ethnic discriminations when migration costs stand at intermediate levels, *i.e.*, are not too low (above a critical thresh-

FIGURE 3
Optimal discrimination penalty and migration costs
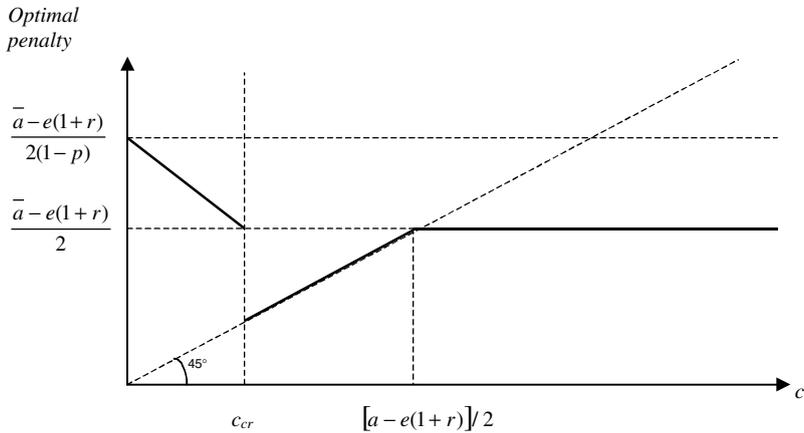
old that is endogenized hereafter) and not too high (below the individual penalty that would be imposed in the closed-economy). On the one hand, if migration costs are too low, preventing emigration is too costly for the majority, which is therefore inclined to increase the level of discrimination above its closed-economy reference level. On the other hand, if migration costs are too high, emigration is not a relevant option for the minority, so that the closed-economy solution applies. Second, the protection of the minority group does not imply actual emigration flows: on the contrary, the case for a protective effect of migration prospects is associated with the absence of actual migrations: emigration remains potential, with minority members ready to leave in case of over-taxation. To summarize, migration prospects do have a protective effect for the minority if migration costs are above a critical threshold, while below that threshold, discrimination becomes harsher when migration opportunities are introduced. The determination of that critical threshold, c_{cr}, is therefore central to our analysis. As explained above, we define c_{cr} as the migration cost for which $\theta_{cl}(c) = \theta_{em}^* = \theta_{em}(T_{em}^*)$. Formally, this problem is complex since T_{em}^* is itself depending on c. This is apparent from Figure 4, where the increasing curve represents the optimal discrimination revenue in the absence of migrations while the decreasing curve represents the optimal discrimination revenue in the presence of migration. The increasing curve corresponds to the left part of the closed-economy Laffer curve when the migration cost constraint is binding. It becomes horizontal at

$$T = T_{cl}^* = \frac{[\overline{a} - e(1 + r)]^2}{4}$$ in the unconstrained problem. Using (9), the

optimal discrimination revenue with migration is a convex and decreasing

function of the migration cost. It becomes negative when $c > \dfrac{\overline{a} - e(1 + r)}{p}$.

The critical value of the migration cost, as mentioned above, is given at the intersection of the two curves.

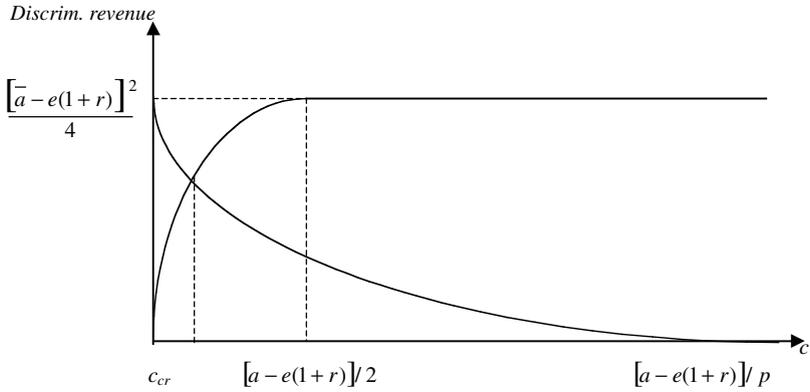FIGURE 4
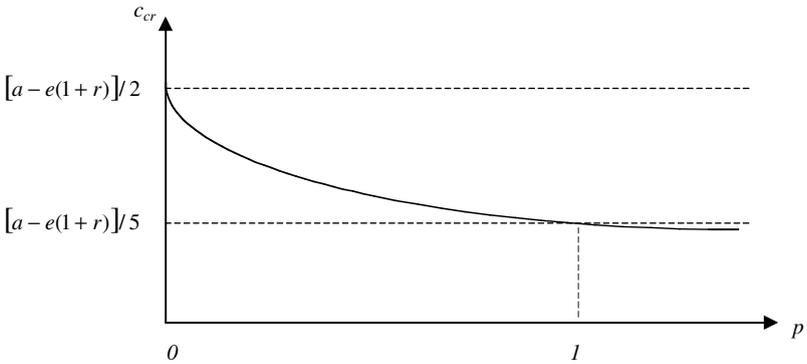**Optimal discrimination revenue and migration costs**

FIGURE 5
Critical migration costs and migration probability

Formally, using (9)(10), the critical migration cost is the lower root of the equality:

$$\frac{[\bar{a} - e(1 + r) - pc]^2}{4} = c\,[\bar{a} - e(1 + r) - c]$$

After straightforward manipulations, it is given by:

$$c_{cr}(p) = [\bar{a} - e(1 + r)]\,\frac{4 + 2p - 4\sqrt{p}}{2(4 + p^2)}$$

As apparent from the above expression, the critical migration cost is a decreasing function of the migration probability, p. It starts from $c_{cr}(0)$ $= \dfrac{a - e(1 + r)}{2}$ when the migration probability is zero, and ends at $c_{cr}(1)$

$= \dfrac{a - e(1+r)}{5}$ when the migration probability is one (see Figure 5). Obviously, $c_{cr}(0)$ corresponds to the optimal penalty in the closed-economy. As p increases, the interval $\left[c_{cr}, T_{cl}^* \right]$, for which migration prospects do have a protective effect, becomes larger; in other words, the critical migration cost decreases, thus increasing the scope for protective migration prospects.

6 Conclusion

The scope of our analysis is restricted to ethnic discriminations and conflicts that are rationally organized for redistributive purposes; moreover, to be relevant, the analysis also requires that the source from which the income transfer is extracted cannot be separated from its owner, as is the case for human capital. With these limitations, we endogenized ethnic discrimination, and compared the level of discrimination when minority members have a given probability of emigration to a discrimination-free country to that observed when such a possibility is absent. To avoid distorting our results with the additional effects of wage differentials, we assumed wages to be identical in the two countries, and formalized discrimination as a lump-sum penalty levied on the educated fraction of the minority, with equal redistribution within the majority. With migration probabilities and costs being the main parameters of the model, we found (quite intuitively) that when migration costs stand at intermediate levels, migration prospects tend to protect ethnic minorities, *i.e.*, decrease the equilibrium level of domestic discrimination. In addition, for these intermediate values, the degree of protection was shown to be inversely proportional to the migration cost; moreover, equilibrium levels of discrimination were shown to be such that minority members are indifferent as to whether to emigrate, meaning that emigration remains potential and serves as a deterrence mechanism that protects the minority from excessive taxation. By contrast, if migration costs are relatively low (*i.e.*, below a critical threshold), we obtained the intriguing result that the exit option is not a blessing anymore, but rather a curse, for the remaining members of the minority group: the level of discrimination rises above its closed-economy level and becomes inversely proportional to the migration cost; in this case, migrations are observed at equilibrium, and the remaining members of the minority are in fact penalized by the emigration of their brothers. In short, all the results obtained for the case of intermediate migration costs are reversed.

These results differ from those obtained in a closely-related study (DOCQUIER and RAPOPORT [2003]), where restrictive immigration policies set by receiving countries were shown to spark emigration from among the minority's ranks and migration prospects could only soften ethnic discrimination in the sending country. By contrast, as explained, the present framework generates the possibility of increased discrimination after migration prospects are introduced (for sufficiently low migration costs), and a politico-economic equilibrium without emigration obtains under imperfect international labor

mobility (for sufficiently high migration costs). Both studies, however, share the common prediction that international migration tend to exert a protective effect on the minority, and the higher the degree of international mobility, the higher the protection offered. Even in the "pessimistic" scenario detailed above, where emigration by some members of the minority may be seen as a curse for its remaining members, recall that the critical threshold for migration costs required for such a scenario to apply is a decreasing function of the migration probability; this suggests that effective protection may always be offered to discriminated-against ethnic minorities by granting such groups with preferable access to immigration. This also suggests that, alongside more traditional aid and sanction mechanisms, immigration policy represents an additional tool in the hands of the international community to tame oppressive governments (AZAM [2000]) and protect ethnic minorities from excessive discrimination at home. ▼

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