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A Note on Brain Gain and Brain Drain: Permanent Migration and Education Policy*

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Abstract

In this note, we present a novel channel for a brain gain. Students from a developing country study in a developed host country. A higher permanent migration probability of these students appears to be a brain drain for the developing country in the first place. However, it induces the host country to improve its education quality, as a larger share of the generated benefits accrue in this host country. A higher education quality raises in turn the human capital of the returning students. As long as the permanent migration probability is not too large, this positive effect causes both aggregate and per-capita human capital to increase in the developing country. Thus, a brain gain occurs.

Keywords: Brain gain; education policy; human capital; return migration.

JEL classification: F22; I28; J61; O15.

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1 Motivation

The recent literature on international migration emphasises that the mobility of skilled workers can lead to a brain gain for developing countries. Empirical studies show that although substantial numbers of skilled workers have left developing countries, human capital stocks in these countries may have increased (e.g., Beine et al., 2008). Standard explanations for this outcome focus on the impact of mobility on private investments in higher education. As skilled wages are higher in the rich world, the prospect of emigrating to a developed country raises the expected private returns to human capital even in remote and poor corners of the world. Therefore, more natives of developing countries invest in their education. Despite the temptations of the rich world, many students from developing countries end up staying in, or returning to, their home country. Consequently, developing countries enjoy a brain gain if the private incentive effect is sufficiently strong (e.g., Mountford, 1997; Stark et al., 1997, 1998; Vidal, 1998; Beine et al., 2001; Stark and Wang, 2002; Mayr and Peri, 2009; Eggert et al., 2010).

This paper suggests a fundamentally different channel through which a brain gain can result. In contrast to the existing literature, we focus on the impact of mobility on the education policy of a rich host country where natives of a developing country study. The rich host country can benefit from these foreign students not only because they pay tuition fees, but also because, if they continue to reside in the host country upon graduation, their human capital exhibits a positive externality.

We analyse specifically the implications of an increase in the permanent migration probability (i.e., the probability that a student from a developing country stays and works in a rich host country after graduation). This increase may result from technological developments, such as better communication and transportation technologies. These developments allow expatriates to keep in touch with family and friends left behind more easily and at lower costs, and thus softens the downside of permanent migration. Also, permanent migration may increase because of institutional and political changes, such as more liberal immigration laws and measures to promote access to the host country's labour market (e.g., Chaloff and Lemaitre, 2009).

No matter what the causes are, an increase in the permanent migration probability makes it more attractive for the host country to invest in education quality, as a larger benefit from the human capital externality accrues to the host country. A higher education quality, in turn, boosts the human capital of all students, including those who ultimately return to the developing country. As a result of this quality effect, aggregate human capital in the developing country increases with the permanent migration probability as long as this probability is not too large. Once the permanent migration probability exceeds a critical level, however, a further increase depresses aggregate human capital in the developing country.

The remainder of the paper is organised as follows: in the next section, we present our model. Section 3 characterises the optimal education policy of the rich country, and analyses how this optimal policy responds to an increase in the permanent migration probability. In section 4, we present our key conclusion on brain gain and brain drain. Section 5 summarises our results.

2 The Model

There are two countries, Poor P and Rich R. Rich hosts a university, called the University of Rich (UoR). The government of Rich controls, directly or indirectly, the quality of education q, $q \geq 0$, and tuition fee t. An improvement in education quality increases both variable costs per student $c(q) = \alpha q$ and fixed costs $F(q)$, with $F(0) = 0$, $F'(q) \geq 0$ and $F''(q) > 0$. The elasticity of marginal fixed costs with respect to quality (i.e., $\varepsilon := F''q/F'$) is constant; a case in point is a quadratic cost function.

There is no university in Poor; however, UoR is open to natives of Poor. Those individuals from Poor who enrol and study at UoR stay on and work in Rich after graduation with probability m, $m \in [0, 1]$, and return to and work in Poor with probability $(1 - m)$. The returning individuals are randomly drawn from the set of

Poor's natives who have graduated at UoR. We refer to m as permanent migration probability.

If individual k studies at UoR, she acquires human capital $a_k q$ and, upon graduation, earns wage $w_k(q) = a_k q$. That is, individual human capital $a_k q$ and wage w_k increase with k's innate ability, denoted by a_k, and the quality of her university education q. Individuals differ in their ability a_k, $a_k \in [0, 1]$, and ability is uniformly distributed across Poor's population, whose size is normalised to one. Importantly, human capital $a_k q$ exhibits a positive externality $ba_k q$, $b > 0$, in the country where, after graduation, individual k resides and works. If an individual does not study at UoR, she does not acquire human capital and receives only a basic wage. For convenience, we set the basic wage to zero.

The timing of decisions is as follows: Rich chooses its education quality q in the first stage and its tuition fee t in the second stage. It maximises the expected human capital externality accruing to Rich and the net financial contributions of foreign students (i.e., aggregate tuition fees minus education costs), as detailed in objective function (3) below. In the third stage, the natives of Poor decide whether they study at UoR or whether they do not. They maximise their disposable income, i.e., wage income minus tuition fee. All other actions occur 'automatically'. Students complete their education. They continue to stay in Rich with permanent migration probability m or return to Poor with probability $(1 - m)$. Graduate k earns wage $w_k(q)$ and causes externality $ba_k q$ in her final country of residence. To state our key conclusion as sharply as possible, we ignore students from Rich in our analysis. Hence, fee t is to be interpreted as the tuition fee levied on foreign students.

3 Education and Permanent Migration

In the third stage, each native of Poor decides whether she studies at UoR, which yields disposable income $w_k(q) - t = a_k q - t$, or stays at home, which leads to disposable income $w_k = 0$. Only individuals whose ability a exceeds the threshold value

$$\hat{a} = \frac{t}{q} \tag{1}$$

find it beneficial to study abroad and pay tuition fees. They can convert education quality q into a higher wage aq very effectively, and thus at least recoup the initial private education costs.

As ability is distributed uniformly, aggregate ability of the individuals who study at UoR is

$$A = \int_{\hat{a}}^{1} a \; da = \frac{1}{2}(1 - \hat{a}^2). \tag{2}$$

In the second stage, Rich chooses its tuition fee t. It maximises the net contribution of foreign students to the welfare of Rich:

$$W_R = \underbrace{bmAq}_{\text{externality}} + \underbrace{(1-\hat{a})t}_{\text{tuition fees}} - \underbrace{[(1-\hat{a})\alpha q + F(q)]}_{\text{education costs}}. \tag{3}$$

The first term on the RHS captures the positive externality of the foreign students who continue to stay in Rich. This externality increases with aggregate human capital Aq, permanent migration probability m and externality parameter b. The second and third term show aggregate tuition fees and education costs, respectively. The sum of these two terms captures the net financial contribution, or burden, of foreign students to Rich.

A higher tuition fee per student has ambiguous effects on aggregate tuition fees, as the payment per student goes up while the number of students falls. Moreover, the decline in the number of students in response to a higher fee reduces the human capital externality and aggregate education costs. Balancing the positive and negative effects gives the optimal tuition fee t° and the resulting threshold level $\hat{a}^{\circ}$:

$$t^{\circ} = \frac{1+\alpha}{2+mb} q \qquad \text{and} \qquad \hat{a}^{\circ} = \frac{1+\alpha}{2+mb}, \tag{4}$$

which follow directly from the first-order condition $\partial W_R / \partial t = 0$ in combination with

(1) and (2).[1] To avoid tedious discussions of boundary solutions, we assume that $\alpha \in [0, 1)$ holds. Then an interior solution $\hat{a}^\circ \in (0, 1)$ is guaranteed for all $m \in [0, 1]$ and $b > 0$ (see (4)).

In the first stage, Rich chooses the optimal education quality q°. Inserting tuition fee (4) into objective function (3) and maximising the resulting expression with respect to q yields the first-order condition

$$\frac{\partial W_R}{\partial q} = bmA + (1 - \hat{a}^\circ)\frac{\partial t^\circ}{\partial q} - (1 - \hat{a}^\circ)\alpha - \frac{\partial F}{\partial q} = 0. \tag{5}$$

On the one hand, a higher education quality boosts the human capital externality in Rich and enables the government of Rich to raise the tuition fee (first and second term of the derivative). On the other hand, it increases both variable and fixed costs (third and fourth term). In the optimum, the government balances the marginal benefits and marginal costs of improving the quality of education.

Both education quality and enrolment depend on the permanent migration probability. These relationships are summarised in the following lemma.

Lemma *The quality of education at UoR and the number of Poor natives who study at UoR increase with the permanent migration probability. That is,* $dq^\circ/dm > 0$ *and* $d\hat{a}^\circ/dm < 0$.

Proof. Using (2) and (4) to rearrange (5) yields

$$\frac{\partial W_R}{\partial q} = (1 + \alpha)\frac{(1 - \hat{a}^\circ)^2}{2\hat{a}^\circ} - \frac{\partial F}{\partial q} = 0. \tag{6}$$

The reformulated derivative (6) helps us to calculate the second derivatives

$$\frac{\partial^2 W_R}{\partial q \partial m} = \frac{b}{1 + \alpha}\frac{1 + \hat{a}^\circ}{1 - \hat{a}^\circ}\hat{a}^\circ\frac{\partial F}{\partial q} > 0 \quad \text{and} \quad \frac{\partial^2 W_R}{\partial q^2} = -\frac{\partial^2 F}{\partial q^2} < 0, \tag{7}$$

where we used (5) to evaluate $\partial^2 W_R / (\partial q \partial m)$ at the optimal quality level q°. Using

[1] In this paper, all second-order conditions are fulfilled.

(6) and (7), we apply comparative statics, which yields

$$\frac{dq^\circ}{dm} = -\left(\frac{\partial^2 W_R}{\partial q \partial m}\right) \Big/ \left(\frac{\partial^2 W_R}{\partial q^2}\right) = \frac{b}{1+\alpha}\frac{1+\hat{a}^\circ}{1-\hat{a}^\circ}\hat{a}^\circ\frac{\partial F/\partial q}{\partial^2 F/\partial q^2} > 0. \tag{8}$$

Finally, $d\hat{a}^\circ/dm < 0$ follows directly from (4). ■

The intuition for these results is straightforward. Human capital causes a positive externality in the country where the graduates who have acquired human capital finally reside. An increase in the probability of permanent migration m means that a larger share of this positive externality accrues in Rich. Consequently, the benefits to Rich of both educating more foreign students and providing a higher education quality increase. Rich invests more in education and offers a higher quality q°.[2] Also, Rich lowers the quality-adjusted tuition fee t°/q° to attract more foreign students.[3] Hence the number of Poor students at UoR $(1-\hat{a}^\circ)$ grows.

The incentive to align education quality and tuition fee to a higher permanent migration probability of foreign students might be particularly strong in host countries for which student migration is an important channel for recruiting high-skilled workers. A case in point is Australia, where international students make up nearly 20% of total tertiary enrolments in 2007 (OECD, 2009, p. 308), and where about 20% of all high-skilled immigrants in 2005-2006 had indeed initially come to Australia as foreign students and then continued to stay there as skilled workers after their graduation (Chaloff and Lemaitre, 2009, p. 25).[4]

[2] This result is not an artifact of the simple market structure. Haupt et al. (2010) find a similar effect in a model where two potential host countries compete for talented students from a third country. In contrast to the current paper, Haupt et al. (2010) focuses on the welfare in the host countries and the potential inefficiency of international competition.

[3] Tuition fee t can fall or rise. More precisely, we can show that $dt^\circ/dm \gtreqless 0 \Leftrightarrow 1/\varepsilon \gtreqless (1-\hat{a}^\circ)/(1+\hat{a}^\circ)$, where ε is the elasticity of marginal fixed costs, as defined above.

[4] In many programmes in English speaking countries, particularly at the postgraduate level, foreign students constitute the overwhelming majority of participants. Furthermore, universities specifically invest in the quality of the education that foreign students receive by setting up support programmes. Measures include, for instance, tutorials for students from specific countries and transition courses to bridge the gap between the education system of the students' home country and of their host country. Many countries, particularly those outside the English speaking world, have set up specific international programmes in English geared towards the needs of foreign students. Thus, the presence of international students indeed shapes educational decisions, such as the choice of education quality.

4 Brain Drain or Brain Gain?

We can now analyse whether a rise in the permanent migration probability causes a brain gain or brain drain. In this context, we define brain gain (brain drain) as an increase (decrease) in the aggregate human capital stock in Poor after return migration has taken place. Recall that only those Poor citizens who study at UoR build up human capital. Thus, the human capital stock in Poor is given by

$$HC_P = (1-m)Aq^{\circ}. \tag{9}$$

Then, the impact of a marginal increase in the permanent migration probability m on human capital HC_P is

$$\frac{dHC_P}{dm} = -Aq^{\circ} + (1-m)\underbrace{\frac{dA}{d\hat{a}}\frac{d\hat{a}^{\circ}}{dm}}_{(+)}q^{\circ} + (1-m)A\underbrace{\frac{dq^{\circ}}{dm}}_{(+)}. \tag{10}$$

This derivative shows three different effects of a higher permanent migration probability m on aggregate human capital in Poor. The first term captures that a higher probability m means less return migration, and thus a lower human capital stock in Poor. The second term reflects that, in response to the changes in education policy, more individuals from Poor study at UoR. This effect increases human capital in Poor, as some student migrants return. Finally, the third term captures the positive effect of the permanent migration probability on the quality of education in Rich, and thus on the human capital of return migrants.

We can now state our key result in the following proposition.

Proposition *Human Capital in Poor after Return Migration.*
Suppose that externality b is sufficiently large. Then, human capital HC_P increases (decreases) with permanent migration probability m if and only if probability m is below (strictly above) a unique threshold level $\widetilde{m} \in (0,1)$. That is,

$$\frac{dHC_P}{dm} \lesseqgtr 0 \quad \Leftrightarrow \quad m \gtreqless \widetilde{m}. \tag{11}$$

Proof. First, we evaluate derivative (10) at the maximum permanent migration probability $m = 1$, which yields $dHC_P/dm|_{m=1} = -Aq^\circ < 0$.

Second, we evaluate derivative (10) at the minimum permanent migration probability $m = 0$. Using (2), (4) and (8), we start by reformulating (10):

$$\frac{dHC_P}{dm} = q^\circ \underbrace{\left[-\frac{1-\hat{a}^{\circ 2}}{2} + (1-m)\left(\frac{b}{1+\alpha}\hat{a}^{\circ 3} + \frac{b}{2(1+\alpha)\varepsilon}\hat{a}^\circ(1+\hat{a}^\circ)^2\right)\right]}_{G(m;\alpha,b):=}. \tag{12}$$

Further note that $\hat{a}^\circ|_{m=0} = (1+\alpha)/2$ and thus

$$G(0;\alpha,b) = -\frac{1}{2} + \frac{(1+\alpha)^2}{8} + \frac{b}{2}\left[\frac{(1+\alpha)^2}{4} + \frac{(3+\alpha)^2}{8\varepsilon}\right]. \tag{13}$$

Since $\partial G(0;\alpha,b)/\partial\alpha > 0$, $G(0;\alpha,b)$ reaches its minimum for $\alpha = 0$ (recall that $\alpha \in [0,1)$), with

$$G(0;0,b) = -\frac{3}{8} + \frac{b}{2}\left(\frac{1}{4} + \frac{9}{8\varepsilon}\right) \gtreqless 0 \quad \Leftrightarrow \quad b \gtreqless \frac{6}{2+9/\varepsilon}. \tag{14}$$

That is, if $b > 6/(2+9/\varepsilon)$, then $G(0;\alpha,b) > 0$, and thus $dHC_L/dm|_{m=0} > 0$, for all α.

Third, $\partial^2 HC_P/\partial m^2 < 0$ follows from differentiating (12).

Since $\partial^2 HC_P/\partial m^2 < 0$, $dHC_P/dm|_{m=1} < 0$ and, for $b > 6/(2+9/\varepsilon)$, $dHC_P/dm|_{m=0} > 0$ for all α, the intermediate value theorem implies that, for $b > 6/(2+9/\varepsilon)$, there exists a unique $\widetilde{m} \in (0,1) : dHC_P/dm \lesseqgtr 0 \Leftrightarrow m \gtreqless \widetilde{m}$ for all α. ■

This proposition establishes a non-monotonic relationship between the human capital stock in Poor and the permanent migration probability. An increase in the permanent migration probability indeed causes a brain gain, but only if this probability is not too large. Once the permanent migration probability exceeds a critical level, a further rise has the opposite effect and leads to a brain drain. Let us explore the intuition for this conclusion.

From the perspective of Poor, there is a quantity-quality trade-off. If the permanent migration probability is low (i.e., $m < \widetilde{m}$), many students return from Rich to Poor upon graduation, but their human capital is rather low. In this situation, Poor can benefit from stronger incentives for Rich to improve the quality of education, and an increase in the permanent migration probability makes it indeed more attractive for Rich to invest in its education quality. The resulting increase in the human capital of returning students more than compensates Poor for the loss of skilled workers due to less return migration. Overall, an increase in the permanent migration probability m leads to a brain gain.

By contrast, if the permanent migration probability is high (i.e., $m \geq \widetilde{m}$), the host country already provides a high education quality. Thus, the acquired human capital of the students who return from Rich is also already large, and Poor cannot benefit that much from a further increase in the education quality abroad. Instead, the human capital stock in Poor will suffer substantially if even fewer students return. Under these circumstances, a further increase in the permanent migration probability m causes a brain drain.[5]

To understand the novelty of this result, recall that a change in probability m has no *direct* effect on the decisions of the students. For a given education policy (t, q), variations in m have no impact on the students' incentives to acquire education and study abroad, and thus leave threshold (1) unaltered. The probability of permanent migration affects human capital only via its impact on the education policy of Rich. This mechanism distinguishes our paper from the previous literature (for instance, Stark et al., 1997, 1998).

We could have considered average human capital in Poor instead of aggregate human capital, with no changes to our conclusions. If a higher permanent migration probability leads to a greater (smaller) aggregate human capital stock in Poor, then

[5] This non-monotonous welfare effect is somewhat reminiscent of Haupt and Janeba (2009). They analyse changes in the education and redistribution policy of a relatively poor country when the threat of skilled emigration grows, i.e., when migration costs fall. Starting from high migration costs, a decline in migration costs initially raises welfare in Poor while, once migration costs are below a critical level, a further fall in migration costs decreases welfare.

it also leads to a higher (smaller) human capital per capita. However, there is one qualification to be made. A brain gain can only arise if the human capital externality b is sufficiently strong. Otherwise, Rich cannot significantly benefit from permanent migration, and has no incentive to sufficiently enhance its education quality, as probability m increases. Consequently, Poor cannot sufficiently benefit from better educated students who return from Rich. Formally, $\widetilde{m} = 0$ would result in this case.[6]

5 Summary

This note presents a novel channel for brain gain. Considering individuals from a developing country who study in a rich host country, we argue that a higher permanent migration probability induces the host country to improve its education quality. A higher education quality raises the human capital of the students returning to the developing country. As long as the permanent migration probability is not too large, this positive quality effect increases both aggregate and per capita human capital in the developing country. This mechanism is novel because the brain gain is not driven by private incentives for Poor's population to acquire human capital, but by incentives for the rich country to change its education policy.

References

Beine, M., Docquier, F. and H. Rapoport (2001). Brain Drain and Economic Growth: Theory and Evidence, *Journal of Development Economics* 64, 275–89.

Beine, M., Docquier, F. and H. Rapoport (2008). Brain Drain and Human Capital Formation in Developing Countries: Winners and Losers, *Economic Journal* 118, 631–652.

Chaloff, J. and G. Lemaitre (2009). Managing Highly-Skilled Labour Migration: A

[6] A sufficient, but not necessary, condition for $\widetilde{m} > 0$ is $b > 6/(2 + 9/\varepsilon)$ (see (14)).

Comparative Analysis of Migration Policies and Challenges in OECD Countries, OECD Social, Employment and Migration Working Paper 79, Paris.

Eggert, W., Krieger, T. and V. Meier (2010). Education, Unemployment and Migration, *Journal of Public Economics* 94, 354–362.

Haupt, A. and E. Janeba (2009). Education, Redistribution and the Threat of Brain Drain, *International Tax and Public Finance* 16, 1–24.

Haupt, A., Krieger, T. and T. Lange (2010). Competition for the International Pool of Talents: Education Policy with Student Mobility, Hitotsubashi University CCES Discussion Paper 31.

Mayr, K. and G. Peri (2009). Brain Drain and Brain Return: Theory and Application to Eastern-Western Europe, *B.E. Journal of Economic Analysis & Policy* 9 (Contributions), Article 49.

Mountford, A. (1997). Can a Brain Drain be Good for Growth in the Source Economy?, *Journal of Development Economics* 53, 287–303.

OECD (2009). Education at a Glance, OECD, Paris.

Stark, O., Helmenstein, C. and A. Prskawetz (1997). A Brain Gain with a Brain Drain, *Economics Letters* 55, 227–234.

Stark, O., Helmenstein, C. and A. Prskawetz (1998). Human Capital Depletion, Human Capital Formation and Migration, a Blessing or a 'Curse'? *Economics Letters* 60, 363–367.

Stark, O. and Y. Wang (2002). Inducing Human Capital Formation: Migration as a Substitute for Subsidies, *Journal of Public Economics* 86, 29–46.

Vidal, J.-P. (1998). The Effect of Emigration on Human Capital Formation, *Journal of Population Economics* 11, 589–600.

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