Selective immigration policies, human capital accumulation and migration duration in infinite horizon[☆]

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A R T I C L E   I N F O

A B S T R A C T

An increasing literature fosters selective immigration policies as a tool to increase human capital in both source and destination countries. These policies are supposed to prompt incentives to education, and – if selection is sufficiently severe – to increase the human capital stock in source countries. Nonetheless, when compared to open migration, selective policies make returns to education uncertain, and they may harm incentives to invest in human capital. As a consequence, they may reduce the human capital stock even though selection is "severe". Moreover, when repeated migration is possible, they backfire on migration duration. We obtain our results in an infinite-horizon model that, unlike the current literature, places no restriction on the number of possible migration spells and allows for the possibility of a forced emigration.

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1. Introduction

Unlike flows of capital or goods, inflows of immigrants can generate frictions with natives and xenophobia, particularly when combined with high unemployment. National governments are, therefore, highly concerned about immigration control.

The eastward enlargement of the European Union is going to add approximately 50 million people to the existing labor force. Large and persistent wage differentials support the incentives for extensive mass migration from low-wage, densely populated countries, to the developed world (Lundborg and Segerstrom, 2002). After these events, the governments of destination countries are urged to raise entry barriers. As reported by OECD (1999, 2001) and by Boeri and Brucker (2005), in recent years many countries have modified their entry regulations to reinforce border controls and restrict the entry, residence and work requirements. These barriers are increasingly taking the form of selective immigration policies based on human capital requirements, and they are renewing the concerns for a brain drain.[1]

However, the recent "new brain drain economics" (Mountford, 1997; Stark and Wang, 2002) argues that selective immigration policies may benefit the source countries if selection is sufficiently severe, because they incentivate human capital accumulation and they restrain its outflow at the same time.

A common assumption of these contributions is that only permanent emigration is considered. A well-developed literature proves that this assumption is too restrictive (see, for example, Dustmann (2003)).

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[1] For a survey of the brain drain literature we refer to Commander et al. (2004).

Moreover, most models of temporary emigration suffer from other simplifying assumptions: the return decision is permanent,[2] and emigration is always voluntary. From a theoretical perspective, it is not evident why migration should be limited to a single spell. There exists, indeed, clear evidence that even at the end of the 19th century repeated migration spells of 3–4 years were not uncommon (Baines, 1991).[3] As for the importance of constrained migration, OECD (2001) emphasizes the role of regional conflicts in increasing population outflows. Emigration waves from Europe in the 1840s were associated with famine and revolutions. Bonifazi and Strozza (2002) describe the huge population relocation that occurred after World War II. We refer to Chiswick and Hatton (2003) for further details on the effects of wars in Africa, Vietnam, Laos, and Cambodia, and the disintegration of Yugoslavia. In spite of its importance, forced emigration is not present in current models of migration duration.

Authors such as Kossoudji (1992) and Faini (1996) stress that entry restrictions alter the optimal length of immigration spells, even though they do not develop a formal model.[4] Since selective immigration policies are nothing but human-capital based entry restrictions, they tie up the decisions about human capital accumulation and migration duration. In our model we are able to account for the joint determination of these variables.

Moreover, we try to overcome the other drawbacks of the literature by placing no restriction on the number of migration spells and by allowing for the possibility of constrained emigration. To meet these requisites, we develop an infinite horizon model including a shock that may force individuals to migrate.

Our findings show that selective immigration policies may hinder the individual incentives to human capital accumulation ("brain loss"). The intuition behind our results is that these policies make returns to human capital uncertain with respect to open migration. As a consequence, the claim that selective policies help to build human capital can easily be reversed.

Similar concerns are present in Schiff (2005), who lists several reasons to explain why the beneficial effects of the brain gain is overestimated, and presents some empirical evidence for the prevalence of the brain drain.

Finally, our results question the consistency of restrictive immigration policies with the objective of reducing the immigrants' stock: entry closure biases the incentives towards longer migration spells and they increase the share of permanent migrants.[5]

Our paper is organised as follows. The following subsection reviews some main findings in the literature. The model is developed in Sections 2 and 3. In Section 4 we discuss our results, and a sensitivity analysis is used to illustrate our findings in Section 5. Section 6 contains a comparison of our results to those present in the literature. Conclusions are reported in Section 7. The proofs are gathered in the Appendix.

1.1. Related literature

The "new brain drain economics" emphasizes the possible benefits of a brain drain.

In an overlapping generations framework there are several mechanisms able to generate a beneficial brain drain, and they rely basically on the existence of externalities on human capital: Vidal (1998) points to enhanced intergenerational transmission of skills and education; Mountford (1997) and Beine et al. (2001) stress the possibility of intergenerational spillovers between skilled workers.

The possibility of migration increases the expected returns to human capital, and thus the incentive to education. Stark et al. (1997) distinguish between education and ability: productivity depends on the latter. With asymmetric information about the worker's ability, the incentive to invest in education and migrating is even stronger for low-ability individuals; however, after their ability (i.e. productivity) is observed, they will find it convenient to return. Stark and Wang (2002) use a static model to state some conditions under which a restrictive immigration policy in the *destination* country increases the welfare of the *sending* country: the idea is that entry rationing in developed countries can keep most human capital from flying abroad.

Schiff (2005) questions the approach of the "new brain drain" literature, and argues that the benefits of a brain gain are overestimated. He gives a simple example of his idea: since in a steady state all variables must be constant, this has to hold for the number of educated individuals as well. Thus, after emigration, no net brain gain can exist.

The results in Schiff (2005) rely on three assumptions: (1) human capital exists in a fixed amount, and individuals choose only whether or not to be educated; (2) entry abroad is based on quotas; (3) emigration is permanent. When education is treated as a continuous variable, it may well be that the number of educated individuals is constant, but the *level* of their

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[2] See for example Galor and Stark (1991), and Dustmann (1997). See Hill (1987) for a model of multiple migrations.

[3] "One reason for thinking that the emigrants *intended* to remain abroad for only a relatively short period is that many made a second emigration just after returning. For example, ten per cent of the Italian immigrants into the US in 1904 were entering for the second time" (p. 36); and "As transport improved, emigration became less final. […] The changes also favoured a relatively new kind of emigrant —one who expected to return within a relatively short period" (p. 41).

[4] In particular, Kossoudji (1992) found that attempts to enforce the US–Mexican border eventually "alter lengths of spells of future trips to the US".

[5] This outcome is also known by demographers. Bonifazi and Strozza (2002) consider the introduction of entry barriers in Germany after the oil shocks. After 1975, inflows were reduced, but new entries occurred mainly through family reunification. See King (1993) for similar results. Family reunification indicates that migration has become permanent: the costs of returning may be too high to permit an easy reversal. Currently, family reunifications account for at least one half of the *legal* inflow into the E.U. (OECD, 1999, 2001).