



Return migration, human capital accumulation and the brain drain

Christian Dustmann^{a,*}, Itzhak Fadlon^b, Yoram Weiss^{c,1}

^a Department of Economics and Centre for Research and Analysis of Migration (CReAM), University College London, London, WC1E6BT, UK

^b Department of Economics, Harvard University, 1805 Cambridge Street, Cambridge, MA 02138, USA

^c The Eitan Berglas School of Economics Ramat Aviv, Tel Aviv, 69978, Israel

ARTICLE INFO

Article history:

Received 12 February 2009

Received in revised form 14 April 2010

Accepted 30 April 2010

JEL classification:

J3

J6

F2

Keywords:

Return migration

Human capital accumulation

Comparative advantage

Brain drain

ABSTRACT

In this paper we present a model that explains migrations as decisions that respond to where human capital can be acquired more efficiently, and where the return to human capital is highest. The basic framework is a dynamic Roy model in which a worker possesses two distinct skills that can be augmented by learning by doing. There are different implicit prices, in different countries and different rates of skill accumulation. Our analysis contributes to the literature on the selection of immigrants and return migrants by offering a richer framework that may help to accommodate selection of emigrants and return migrants that are not immediately compatible with the one-dimensional skill model. Our analysis also has implications for the debate on brain drain and brain gain. In the two skills model presented here, return migration can lead to a mitigation of the brain drain, or even the creation of a “brain gain”, where those who return bring the home country augmented local skills.

© 2010 Elsevier B.V. All rights reserved.

1. Introduction

Mobility of workers across national borders responds not only to the return to skills, but also to the opportunity and efficiency of skill acquisition. Efficiency considerations suggest that skills should be acquired where the cost is low and applied where the reward is high. This last aspect has been largely overlooked in the literature that analyzes the causes and forms of migration. Thus, individuals may choose to acquire skills abroad that are highly rewarded in their home country and produced cheaply elsewhere. Student migrations are an example with some countries having established themselves as learning centers that provide educational services above those demanded domestically.²

There is evidence that, for migrants who returned to their home country, work experience acquired abroad enhances earnings by more than work experience acquired in the home country. Reinhold and Thom (2009) analyze earnings of Mexican emigrants who returned from the U.S. They find that, for these immigrants, the labor market experience accumulated in the US increases earnings by twice the amount than

experience accumulated in Mexico. Papers by Barrett and O'Connell (2001), Barrett and Goggin (2010) and Iara (2006) report similar findings for Ireland and for migrants who returned to Eastern Europe from Western European countries. Co et al. (2000) report a wage premium for having been abroad for female return migrants to Hungary.³

In this paper, we present a model that explains migrations as decisions that respond to where human capital can be acquired more efficiently and where the return to human capital is highest. The basic framework is one in which a worker possesses two distinct skills that can be augmented by learning by doing while acquiring work experience. The two skills command a different implicit price in different countries. The rate of human capital accumulation is also different in different countries. Thus, a person may move to a country where her skills grow fast and then apply these skills in a different country where these skills have a high price. In this regard, there is an

³ Return migration is an important phenomenon. Of the foreign born population that entered the UK in the 1990s, and stayed for at least one year, about 40% had left the UK after another 5 years (see Dustmann and Weiss, 2007). Bijwaard (2008) reports that of those arriving to the Netherlands, about 40% have left the country within seven years. Christophe and Spielvogel (2008) report similar out-migration rates for other countries. The average out-migration rate after 5 years ranges from 28% for the Netherlands to 60% for Ireland. Of those immigrants from Mexico who resided in the US in 1995, 3.7% had returned in 2000. Return rates differ across education groups: While only 1.6% of those with an intermediate level of education had returned, 4.3% and 5% of the low and highly educated returned. Similar U-shaped patterns for return apply to migration from the US to Argentina and Brazil and from Spain to Chile, Brazil, Argentina and Mexico.

* Corresponding author. Tel.: +44 20 7679 5832; fax: +44 20 7916 2775.

E-mail address: c.dustmann@ucl.ac.uk (C. Dustmann).

¹ Tel.: +972 3 6499706; fax: +972 3 6409908.

² Recent papers that discuss movement of students are Rosenzweig (2008) who discusses international mobility and Kennan (2009) who examines mobility across US states. Rosenzweig (2008), provides evidence on learning centers. He reports that of the 2 million tertiary students enrolled in education as foreign students, 80% were educated in only five countries: The US, the UK, Australia, Japan, and Germany.

important difference between human and physical or financial assets. Human capital cannot be separated from its owner and he/she *must* move in order to exploit differences in returns in different locations.

An early paper that discusses higher return in the home country to skills acquired in the host country as a motive that triggers return migration is Dustmann (1994, 1995). Other papers that analyze this motive are Borjas and Bratsberg (1996), Santos and Postel-Vinay (2003), De Coulon and Piracha (2005), and Mayr and Peri (2008). These models assume that individual skills are one-dimensional. In the single skill model, individuals move based on the prices of this skill in the two countries. If the price is higher in the receiving country some highly skilled workers will move. If the possibility to learn abroad is added, some of those who moved will return but those will be the least skilled among the emigrants. Conversely, if the price of the single skill is lower abroad, low skilled workers will emigrate and among these immigrants the most skilled will return.⁴

Considering two skills and allowing comparative advantage to play a role, we obtain “non-hierarchical” migration and remigration patterns with movements that are neither positively nor negatively selected. Among the stayers in the home country, there are some who are more able (in the sense of having a larger endowment of both skills) than some of the movers. At the same time, there may be some movers who are more skilled than some of the stayers. In both comparisons, those who stay have a *relatively* high component of the skill that is more highly valued in the home country and those who move have a *relatively* high component of the skill that is more highly valued in the host country. By the same logic, the selection of return migrants may exacerbate or alleviate the impact of migrant selection for the initial out-migration for both emigration- and immigration country. In these regards, the multi-dimensional skill distribution yields a richer set of testable implications than the one skill model of Borjas and Bratsberg (1996).

Our model has important implications for the debate on brain drain and brain gain. In an early paper, Kwok and Leland (1982) describe brain drain as a (permanent) outflow of skilled workers. The model discussed by Borjas and Bratsberg (1996) adds an additional dimension to this: A brain drain issue arises when the price of skills is higher abroad, and may be amplified by those who return being the less able among those who left. In the two skills model presented here, the brain drain is mitigated because those who return come with augmented *local* skills that are more applicable in the home country. If the proportion of those who return is large enough, aggregate output and even output per capita may increase, implying a brain gain. We also show that by imposing entry standards based on skills that are tailored to the host country the potential brain gain is reduced, because some of those who would return with augmented local skills are barred from skill acquisition abroad.⁵

We discuss these issues in the context of a dynamic Roy model, in which skills vary over time. In contrast to the static Roy (1951) model, in which alternatives are characterized by the prices of skills only, our model specifies each alternative in terms of its price and learning opportunities. Such a model can generate *planned* mobility even under conditions of certainty.⁶ This richer framework is suited to explain migration and remigration between countries with different

technologies and a different industrial structure. In particular, it can explain immigration patterns between developed and developing countries that are incompatible with the one skill model that is often applied empirically.⁷

We conduct the analysis in three steps, working backwards. We first examine the return decision of immigrants who are already in the receiving country and investigate who shall return to the home country and when. Based on the results of this last stage, we examine the timing of emigration from the home country. Based on these two considerations, we finally discuss who shall emigrate. We show that these decisions depend crucially on the extent of transferability of work experience acquired abroad to the home country. Specifically, if one can augment the skills that are highly valued in the home country more efficiently abroad, it motivates both emigration and return migration. We then discuss the potential brain gain associated with return migration.

2. Earning, learning and prices

2.1. Skills and human capital

Human capital is viewed here as an aggregate that summarizes individual skills in terms of productive capacity.⁸ The aggregation of individual skills into productive capacity is assumed to take the form

$$\ln K_j(t) = \sum_s \theta_{sj} S_s(t), \quad (1)$$

where $K_j(t)$ is the productive capacity of a person if he works in country j at time t , $S_s(t)$ is the quantity of skill s possessed by the individual at time t and θ_{sj} is a non-negative parameter that represents the contribution of skill s to production in country j . We thus consider skills that are complements in generating the human capital and allow the different skills to have different productivity in different countries. We refer to θ_{sj} as “prices” because, as we shall show shortly, equilibrium wages are proportional to these productivity factors.

To simplify the exposition, we consider the case of only two countries, the receiving country and the country of origin, denoted by a and b , respectively, and two skills, denoted by 1 and 2. Each person is characterized by a bundle of two latent skills and in each country there is some bivariate distribution of these skills in the population.⁹ For any fixed price of skills, one can use a linear transformation to translate the latent skills S_1 and S_2 that a worker possesses to the potential productive capacities of the worker in each of the two countries, $\ln K_a(t)$ and $\ln K_b(t)$. We can thus describe a worker by the pair $(K_a(t), K_b(t))$ instead of a pair of latent skills $(S_1(t), S_2(t))$.¹⁰

Skills are initially endowed and can then be augmented by acquiring work experience. We consider here a “learning by doing” technology, whereby work in country j augments skill s at a constant rate γ_{sj} per unit of time worked. Note the joint production feature of this technology; working in any one country j augments *two* skills that

⁴ Borjas and Bratsberg (1996) assume that learning abroad raises local earning by a fixed proportion, irrespective of the duration of the stay abroad.

⁵ Several studies suggest that entry restrictions based on skill in the receiving countries provide an incentive to invest in human capital in the source county (see Mountford, 1997, Docquier and Rapoport, 2009, Stark et al., 1998, and Vidal, 1998). This may then mitigate the brain drain, or even turn it into a brain gain (Beine and Rapoport, 2001, Mayr and Peri, 2008).

⁶ Learning as a joint production was first introduced by Rosen (1972a, 1972b). Willis and Rosen (1979), Borjas (1987) and Heckman and Honore (1990) discuss the two skill Roy model. Jovanovic and Nyarko (1997) consider learning in stepping stone occupations. Borjas (1987) and Gould and Moav (2008) use a two skill Roy model to explain emigration patterns but they do not address learning and return migration. Uncertainty and unrealized expectations as a cause for return migration have been discussed by Borjas and Bratsberg (1996). This last issue is not discussed in this paper.

⁷ Earlier work (e.g., Cobb-Clark 1993) finds limited evidence for a negative relationship between the source country’s income inequality and emigrant wages, as predicted by the one-skill model. Later studies (Feliciano, 2005, Orrenius and Zavodny, 2005, Belot and Hatton, 2008, Chicquiar and Hanson, 2005) find no such relationship. The empirical findings seem compatible with the one skill model only upon introducing additional assumptions, such as a decline in migration costs with education.

⁸ A human capital model with multiple skills was first considered by Welch (1969). Heckman et al. (2006) use a two skill model to explain schooling and wages and provide evidence for the importance of both cognitive and non cognitive skills for such outcomes.

⁹ Individual skills cannot be unbundled from the worker and sold to different employers. For simplicity, we abstract here from the occupational assignment within countries and essentially assume one occupation in each country.

¹⁰ The maintained assumption here is that skills can be measured in some standard units that are common to all countries. The coefficients θ_{sj} can then be recovered, in principle, from data on earnings (preferably of the same individuals), the duration of stay in the two countries and the choices made by different potential immigrants.

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات