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Higher Education Policy and Migration: The Role of International Student Mobility

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Higher Education Policy and Migration: The Role of International Student Mobility

Martin Kahanec* and Renáta Králiková**

The need for high-skilled mobility

There seems to be a broad consensus, at least among labor market experts, that high-skilled immigration is desirable for Europe (Kahanec and Zimmermann 2011). Economic theory indeed suggests that high-skilled immigration generally has positive effects on the receiving economy. It may well facilitate the international exchange of ideas, knowledge, goods and services, and capital to a greater extent than low-skilled immigration (Chiswick 2011). In view of the complementarities between high-skilled labor and skill-intensive production, success in a global market critically depends on the ability to upgrade the skills of the labor force – also by attracting high-skilled workers. Through complementarities between high and low-skilled labor, the inflow of high-skilled workers increases the demand for their less skilled colleagues, thereby not only helping to alleviate the widespread problem of low-skilled unemployment but also inequality and welfare state sustainability (Kahanec and Zimmermann 2008, 2009).

International student mobility is an important channel through which high-skilled immigrants arrive (Suter and Jandl 2006), and it is particularly attractive in view of the high integration potential of high-skilled students (Chiswick and Miller 2011). The literature points out a number of higher education policies that may affect international student mobility, such as tuition fees, the language of instruction or the quality of the higher education institutions (DeVoretz 2006).

In this paper we look at international student mobility as a channel of high-skilled immigration and identify its key determinants among higher education policies. We begin by reviewing what we know about economic effects of high-skilled immigration. Subsequent sections examine the existing evidence on international student mobility as an important channel of high-skilled immigration and discuss higher education policies as a tool to attract international students. Subsequently, looking at available data, we tentatively measure the independent effects of various higher education policies on the degree of internationalization of a country's higher education measured by the share of international students in its student body. We conclude by reviewing the scope for such policies to attract high-skilled immigrants.

The effects of high-skilled migration on host economies

The impact of immigration on host labor markets depends on the degree of substitutability or complementarity of the migrant and native labor force. This qualitative nature of the interaction between foreign and domestic workers is also fundamental in economic models that conceptualized these relationships (Chiswick 1980, 1998; Chiswick et al. 1992). To elucidate the effects of immigration, it is of key importance to distinguish between high- and low-skilled labor markets in such models.

A straightforward analysis within this framework (Kahanec and Králiková 2011) has a clear message: in terms of wages or risk of unemployment skilled immigration benefits the low-skilled native labor force and may, but does not need to, hurt high-skilled native workers. Kahanec and Zimmermann (2008, 2009) show that high-skilled immigration tends to decrease earnings inequality in the host economy. In addition to these redistributive effects, high-skilled migration may have a number of positive effects. Migrants are often more mobile than natives and thus improve the allocation of production factors and

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– most notably – human capital in the host economy. Furthermore, immigrants arrive with social capital, which may serve as a vehicle for cross-border exchange of new ideas and knowledge and also facilitate international trade or foreign investment (Bonin et al. 2008). As a result, immigration can expand the production possibilities in the host country and thus increase overall demand for labor.

There are some arguments why and how immigration might hurt native workers through the fiscal system, with some arguing that immigrants put pressure on the welfare system. However, recent evidence indicates that immigrants in fact face significant barriers when accessing welfare and that their disproportional welfare take-up, if it occurs, is due to their adverse characteristics, which rather result from ill-designed immigration policies in Europe (Giulietti et al. 2011; Zimmermann et al. 2011). Furthermore, imperfect adjustment due to language problems, institutional and legal barriers, migration trauma or discrimination may lead to substandard labor market outcomes, higher welfare dependency, lower tax contributions and other adverse effects (Borjas 1999; Brücker et al. 2002).

International student mobility as a channel of high-skilled immigration

International student mobility is an important channel of high-skilled immigration. In 2005, 27 percent of foreign higher education students from European Union member states were employed in the UK six months after graduating. In Norway 18 percent of students from outside the European Economic Area (EEA) studying between 1991 and 2005 stayed in the country, the corresponding number for EEA students was 8 percent (Suter and Jandl 2006). In the US in 1999 a quarter of temporary migrants under the H1-B visa program had been previously enrolled at a US university (Cervantes and Guellec 2002). Almost half of the immigrants entering Australia through high-skilled immigration provisions had completed their degree there (OECD 2006, 2011). Clearly, as also pointed out by Ritzen and Marconi (2010), student mobility represents one of the important sources of high-skilled migration.

According to OECD (2011), more than half of the students (53.9 percent) studying abroad are found in six countries: the US (18 percent), the UK (9.9 percent), Australia (7 percent), Germany (7 percent), France (6.8 percent) and Canada (5.2 percent). Other countries which have begun to attract foreign students in greater numbers include: Canada (5.2 percent), the Russian Federation (3.7 percent), Japan (3.6 percent) and Spain (2.3 percent).[1] These numbers, however, fail to reflect the size of overall student body of a host country that can serve as a proxy for the capacity to absorb international students. A country should not be viewed as being unattractive to international students if it has a smaller absolute number of international students but international students form a large part of its overall student body. For example Switzerland attracts only 1.3 percent of overall students studying abroad while international students form almost 15 percent of all the students studying in this country. In this paper we therefore use proportion of international students to the whole student body as the measure of inward student mobility. There are five countries where the international students form more than 10 percent of the student body: Australia (21.5 percent), the UK (15.3 percent), Austria (15.1 percent), Switzerland (14.9 percent) and New Zealand (14.6 percent; OECD 2011).

Higher education policy and student mobility

Although student's migration decisions probably also involve economic incentives,[2] the institutional context of their decision, and thus inflows of foreign students, may also depend on higher education policies in place. A number of scholars, including DeVoretz (2006), Naidoo (2007) and Lowel and Khadka (2011) agree that the cost of education deters inflows of foreign students. OECD (2011) finds the language of instruction an important factor and notes that the most attractive countries use one of the more spoken languages, such as English, French, German, Spanish or Russian. However, English is more and more viewed as the lingua franca in higher education and research, and one of the reasons students study abroad is to enhance their proficiency (Altbach 2007; Zheng 2010). This importance is underscored by the fact that large share of mobile students (42 percent) head to English-speaking countries (Australia, Canada, New Zealand, the UK and the US; OECD 2011).

The quality of education, involving the reputation of the higher education institution and recognition of

[1] These numbers reflect all foreign students and also include those who originally came to the host country for different reasons than studying.
[2] E.g., Rosenzweig (2006).

the degree in the home or international labor market, can also affect inward student mobility (Bourke 1997; Park 2009; OECD 2011). One of the ways reputation is built up is the position of higher education institutions in the international ranking. While degree recognition is formally governed by national legislation, in the labor market it is also related to the reputation and standing of the degree-awarding higher education institution.

Other factors which are also important for students include multiculturalism, safety, weather and the friendliness of those who live in the country (Bourke 1997; Park 2009). For example, Korean students who value these factors more highly and are less interested in the quality of education tend to choose Australia over the UK or the US (Park 2009).

Measuring the determinants of student mobility

To identify and measure some of the determinants of incoming student mobility, we look at key statistics compiled from three sources: the ARWU, the Migrant Integration Policy Index (MIPEX) and the OECD.[3] We define incoming mobility of higher education in a given country – our dependent variable – by the percentage of international students to national student body. The independent variables measuring higher education policies are: tuition fees (and how they compare to domestic students); the share of universities in the ARWU top 100 and 500;[4] and the extent English is the language of instruction. Immigration policies are controlled for by country's rank in the MIPEX ranking. We collect this information for 34 countries. Whilst the dependent variable is from the 2005/06 and 2008/09 academic year, as it takes time until institutional changes in higher education or migration policies in host countries can affect potential international students, the independent variables with exception of the fees are lagged by one year.[5]

We summarize our data for the 2008/09 academic year in the Table. As these raw data do not permit simple interpretations we consider the whole data set for 2005/06 and 2008/09 academic years and use simple statistical methods to grasp the relationships between inflows of international students and higher education policies. In this analysis and its interpretation we acknowledge the obvious limitations of our data, such as small sample size.

[3] The MIPEX index measures the openness of a country to immigrant integration (MIPEX 2011).

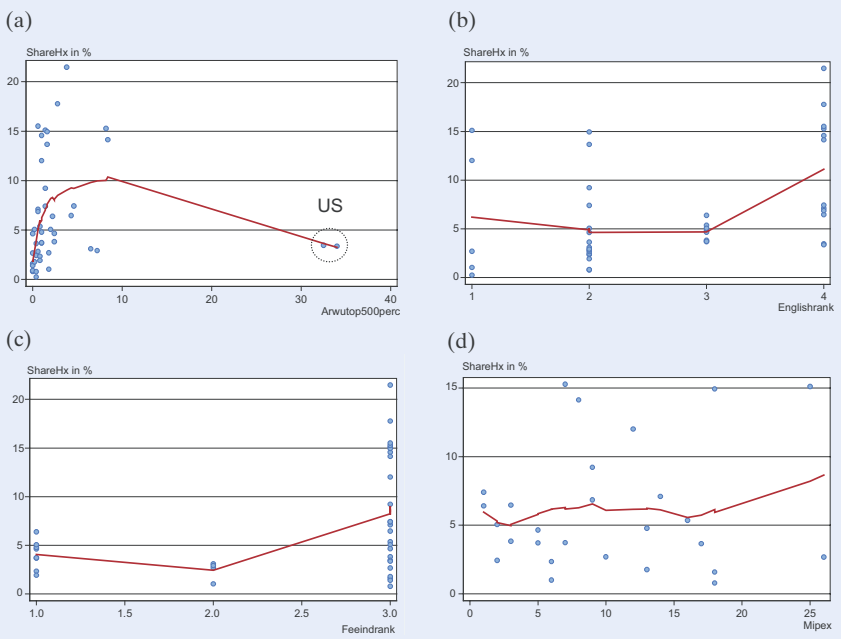
[4] Note that this variable measures a country's share among the world's elite higher education institutions, which should not be confused with the overall quality of its higher education.

[5] This accounts for the assumption that students who studied abroad in, for example, the academic year 2008/09 applied for admission in 2008 and hence made their decision based on the situation at that time. The situation is different for fees, because universities publish these amounts about a year before the academic year starts. It is important to acknowledge here as well that our (lagged) independent variables are relevant mainly for first year students who form only part of the overall mobile student body.

Figure

INTERNATIONAL STUDENT MOBILITY

Locally weighted scatter-plot smoothed (LOWESS) plots



Notes: (a-d) shareHx – share of international students to national student body in %. (a) arwutop500perc – the share of higher education institutions in the ARWU top 500. (b) English ranking – English as language of instruction: all or nearly all (4), many programs (3), some programs (2), no or nearly no programs (1). (c) fee ranking – higher (3) or same (2) fees for international as for domestic students, no fees for any students (1); mipex – MIPEX index, ranking in 28 assessed countries in 2007.

Source: www.arwu.org; MIPEX (2011); OECD (2011).

Table

The inward student mobility and its determinants

OECD countries	Number of students in the academic year 2008/2009[a]			Fees in the academic year 2008/2009 in equivalent USD converted using purchasing power parity (PPP) [a]				Country's performance in the ARWU world ranking in 2007[b]				English as the language of instruction[a]	MIPEX rank in 2007[c]
	International students to national student body in %	Foreign students to all foreign students in the world in %	Foreign students to national student body in %	Fees for domestic students at public institutions	Fees for international students at public institutions (relative to domestic)	Government dependent private institutions	Independent private institutions	Rank (top 100)	% of the top 100 universities originating from this country	Rank (top 500)	% of the top 500 universities originating from this country		
Australia	21.5	7	24.4	4,140	Higher	n/a	8933	9	2	8	3.8	All	No data
UK	15.3	9.9	20.7	n/a	Higher	4,840	No data	2	10.9	2	8.2	All	7
Austria	15.1	1.6	19.4	853	Higher	853	235 to 11,735	N.p.	0	15	1.4	No	25
Switzerland	14.9	1.3	21.2	879	Higher	No data	7,262	8	3	13	1.6	Some	18
New Zealand	14.6	1.9	26.5	3,019	Higher	4,159	No data	N.p.	0	19	1	All	No data
Belgium	9.2	1.3	12.6	Flanders: No data; Wallonia: 599	Higher	Flanders: 545 to 618; Wallonia: 683	No data	N.p.	0	15	1.4	Flanders: Some. Wallonia: No	9
Ireland	7.1		7.1	from 2,800 to 10,000	Higher	n/a	No data	N.p.	0	26	0.6	All	14
Canada	6.5	5.2	13.2	3,774	Higher	No data	No data	5	4	6	4.3	All	3
Sweden	6.4	1.1	9.4	No tuition fees	No fees	No tuition fees	No data	5	4	11	2.2	Many	1
Denmark	5.4	No data	9.6	No tuition fees	Higher	No data	n/a	11	1	23	0.8	Many	16
Iceland	4.6	No data	5.5	No tuition fees	No fees	2,311 to 6,831	8,433 to 12,650	N.p.	0	N.p.	0	Some	No data
Netherlands	3.8	1.2	7.2	1,851	Higher	n/a	No data	9	2	10	2.4	Many	3
Finland	3.7	No data	4.2	No tuition fees	No fees	No tuition fees	n/a	11	1	19	1	Many	5
Hungary	3.7	No data	4.3	No data	No data	No data	No data	N.p.	0	27	0.4	Some	17
United States	3.5	18	No data	6,312	Higher	n/a	22,852	1	53.5	1	32.5	All	No data
Japan	3.1	3.6	3.4	4,602	Same	n/a	7,247	3	5.9	4	6.5	Some	No data
Spain	2.7	2.3	4.7	1,038	Same	n/a	No data	N.p.	0	12	1.8	No	10

Table (continued)

OECD countries	Number of students in the academic year 2008/2009[a]			Fees in the academic year 2008/2009 in equivalent USD converted using purchasing power parity (PPP)[a]				Country's performance in the ARWU world ranking in 2007[b]				English as the language of instruction[a]	MIPEX rank in 2007[c]
	International students to national student body in %	Foreign students to all foreign students in the world in %	Foreign students to national student body in %	Fees for domestic students at public institutions	Fees for international students at public institutions (relative to domestic)	Government dependent private institutions	Independent private institutions	Rank (top 100)	% of the top 100 universities originating from this country	Rank (top 500)	% of the top 500 universities originating from this country		
Slovak Republic	2.7	No data	2.8	Maximum 2,707	Higher	n/a	No data	N.p.	0	N.p.	0	Some	26
Portugal	2.4	No data	4.8	1,233	No data	4,991	No data	N.p.	0	27	0.4	Some	2
Norway	2.3	No data	8.0	No tuition fees	No fees	Data value nil	5,641	11	1	23	0.8	Some	6
Slovenia	1.8	No data	1.7	No data	Higher	No data	No data	N.p.	0	35	0.2	No data	13
Estonia	1.6	No data	3.7	n/a	Higher	No data	No data	N.p.	0	N.p.	0	No data	18
Poland	0.8	No data	0.8	data value nil	Higher	n/a	from 1,889 to 2,537	N.p.	0	27	0.4	Some	18
Chile	0.3	No data	0.9	No data	No data	No data	No data	N.p.	0	27	0.4	No	No data
Czech Rep.	No data	No data	7.3	No tuition fees	Higher	n/a	No data	N.p.	0	35	0.2	Some	22
France	No data	6.8	11.5	190 to 1,309	Same	1,127 to 8,339	1,128 to 8,339	5	4	5	4.5	Some	12
Germany	No data	7	10.5	No data	Same	No data	No data	3	5.9	3	8	Some	11
Greece	No data	No data	No data	No data	No data	No data	No data	N.p.	0	27	0.4	No	23
Israel	No data	No data	No data	n/a	No data	No data	No data	11	1	15	1.4	No	No data
Italy	No data	1.8	3.3	1,281	Same	n/a	4,713	N.p.	0	7	3.9	No	8
Korea	No data	1.4	1.6	5,315	Same	n/a	9,586	N.p.	0	13	1.6	Some	No data
Luxembourg	No data	No data	No data	No data	No data	No data	No data	N.p.	0	N.p.	0	No	14
Mexico	No data	No data	No data	No tuition fees	Same	n/a	5,365	N.p.	0	35	0.2	No	No data
Turkey	No data	No data	0.7	No data	Higher	n/a	No data	N.p.	0	35	0.2	Some	No data

Notes: International students are based on the OECD (2011) methodology "Students who go abroad for study purposes". Foreign students are based on the OECD (2011) methodology "All students with different citizenship than the one of the host country". These students could have originally come to the host country for different reasons than to study. The use of English as language of instruction is expressed in the following categories in the Table: All or nearly all (All), Many programs (Many), Some programs (Some), no or nearly no programs (No).
n/a = Not applicable. – N.p. = No placement.

Sources: [a] OECD (2011). – [b] www.arwu.org/ARWUAnalysis2007.jsp. – [c] www.mipex.eu/countries.

We first apply the nonparametric locally weighted scatter-plot smoothing technique (LOWESS) to our data. The results are reported in the Figure. In panel (a), even excluding the outlying United States, mobility is increasing – but at a decreasing rate – in the share of higher education institutions in the ARWU top 500. We also see in panel (b) that countries whose programs all have English as the language of instruction attract relatively more international students. We learn from panel (c) that countries where fees for international students are higher than those for domestic students have more international students. Finally, from panel (d) it appears that we cannot identify any distinct relationship between higher education mobility and the MIPEX ranking.

Using additional econometric techniques we further evaluate these relationships with regard to the possible mutual interactions of higher education policies as well as other confounding factors.[6] This analysis provides results similar to those presented in the Figure. All models consistently indicate that the share of universities in the ARWU top 500 has a positive effect on the internationalization of higher education, and that this effect is hump-shaped.

Similarly, it seems that having "no or nearly no" or "all" programs in English is better than having "some" or "many" programs in English. That having "no or nearly no" programs in English has a similar effect as having all programs in English is driven by Austria, which has a very high share of international students in spite of just a few programs in English. Yet Austria is a special case – according to the OECD (2011) more than half of the international students are from Germany (7,450 of 14,260). This might be explained by the close proximity and the fact that students in many of the German federal states have to pay university tuition fees – unlike Austria. Furthermore, a system of *numerus clausus* operates in some German programs, mainly medical studies, limiting the number of students who may study (van der Mei 2011).

It would also appear that countries charging no fees, and perhaps to even a greater degree, those charging international students fees higher than those applying to domestic students enjoy higher inflows of international students than countries applying similar fees for international and domestic students. Fees are thus not necessarily negatively correlated with incoming mobility in the raw data, but in fact this stays true also if we control for various potentially confounding factors, including time invariant country fixed effects. Although this needs further scrutiny, we think that rather than contradicting the findings of DeVoretz (2006) or Naidoo (2007), this finding may be due to reverse causality – places at the higher education institutions in these countries are in greater demand and so charge more. In addition, given the limitations of our data, we cannot exclude the possibility that if the quality of education is comparable then the cost of study may determine the choice of country to study (OECD 2011).[7] In any case, we view this analysis as preliminary and further investigation using larger panel data is necessary.

What higher education policy attracts brains?

Given these results, an important question is whether the student flows are largely exogenous, or whether there are possibilities to actively redirect these flows using higher education policy instruments. Chen and Barnett (2000) argue that the flows of students are relatively stable and there is only a limited number of countries which are able to attract international students. They classify countries into three categories: the core where most of the students go, such as Canada, France, Germany, the UK and the US, the semi-periphery such as eastern Europe, and the periphery that does not attract foreign students, such as Latin American and African countries.

However, there seem to be substantial changes in countries' ability to attract international students, casting doubts on this premise (Ritzen and Marconi 2011). For example, the US lost 20 percent share of the world's international students between 1985 and 2009 (from 38 percent to 18 percent; Ritzen and Marconi 2011; OECD 2011). Australia and New Zealand, on the other hand, have in Chen and Barnett's (2000) nomenclature turned from peripheries into cores since the 1980s. Australia currently carves out the third largest share of the foreign students in the world and New Zealand increased its share almost five-fold from 0.4 percent in 2000 to 1.9 percent in 2009 (OECD 2011). From another perspective, while the number of foreign students enrolled around the

[6] These include the pooled OLS and longitudinal fixed effects models. The results are reported in Kahanec and Králiková (2011).

[7] Another aspect that we do not account for due to data limitations is that in the EU fees for international and domestic students must be the same for students coming from another EU member state. As much as 72 percent of foreign students in the 21 EU member states that are also members of the OECD come from one of these 21 member states (OECD 2011).

world increased by 77 percent between 2000 and 2009, in the US it was only 49 percent but in Oceania it was 183 percent and in Latin America and the Caribbean 161 percent (OECD 2011).

What is the scope of higher education policies that attract international students? A common denominator in student choice is that mobile students prefer English-speaking countries. As Altbach (2007) notes English-speaking academic systems dominate and this hegemony is here to stay for the foreseeable future. This, however, does not mean that non-English speaking countries have little chance of attracting international students. The dominant position of English seems to be best addressed by countries introducing large numbers of programs in English, which is the case in Denmark, Finland, the Netherlands and Sweden (OECD 2011). In Japan, perceived by OECD (2011) as a rising front-runner in student mobility, the introduction of one-year programs in English increased the number of US students between 1980 and 2000 from 1,000 to 40,000 (Ninomiya et al. 2009).

Placement in the world rankings, which according to our analysis appears to have strong effects, is probably more difficult to tackle due to inherent inertia of higher education quality. As international students face a degree of informational asymmetry when deciding about where to study (Bourke 1997), governments and higher education institutions can, besides improving their placement in the world rankings as a long-term aim, concentrate on shorter-term activities mitigating such asymmetry. This may involve marketing their higher education and concrete institutions, transparent quality control and evaluation systems, information about recognition of the diplomas they offer[8] and setting up national agencies that facilitate and coordinate these efforts (Bourke 1997). For example in Poland, which has had low levels of international students for many years, the 40 best universities of the country decided to organize a consortium and launched an information campaign (Siwinska 2009). This campaign helped to increase the number of incoming students by 30 percent (ibid).

In the longer-run the countries that aim to change their position from student exporters to more attractive host country through enhanced quality and possibly enhanced placement in the international rankings need to employ more profound changes. In general they need to enhance the academic environment to attract good quality faculty that is necessary for high quality education (De Wit 2010). The conditions for good quality faculty should include competitive salaries, research infrastructure, career prospects and abolishing inflexible hierarchies, especially for young researchers as it hinders their independent research (Kelo and Wachter 2004).

[8] The governments of the potential host countries should also seek to have its higher education recognized by potential sending countries.

Conclusions

In this study we argue that high-skilled immigration is desirable in view of its economic benefits, and that international student mobility is an important vehicle of high-skilled immigration. In view of the benefits of inflows of international students we evaluate the scope of higher education policies to facilitate such inflows.

Using simple statistical methods and a purpose-made data set, we find that among these policies it is mainly the quality of higher education as well as the availability of programs with English as the language of instruction that drive inflows of international students.

We argue that in the short run policies should increase the number of programs with English as the language of instruction as well as increasing marketing and transparency of measurement and evaluation of the quality of higher education institutions, whereas the long-run objective needs to be increasing the overall quality of higher education system.

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