

Skilled migration: the perspective of developing countries

Frédéric Docquier^{a,b} and Hillel Rapoport^{a,c,d}

^a CADRE, University of Lille 2, France

^b IZA, Institute for the Study of Labor, Germany

^c Department of Economics, Bar Ilan University, Israel

^d Stanford Center for International Development, Stanford University, USA

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Extended Abstract (IZA/UI conference) with selected figures

The current wave of economic globalization has opened a window of opportunity for human capital to agglomerate where it is already abundant and yet best rewarded, i.e. in the most economically advanced countries. This natural tendency has been strengthened by the gradual introduction of selective immigration policies in many OECD countries since the 1980s. What started as an effort to increase the "quality" of immigration in countries such as Australia or Canada has developed into an international competition for attracting the highly educated and skilled. Together with traditional self-selection effects on the supply-side, this explains the overall tendency for migration rates to be much higher for the highly-skilled. While the world "export/GDP" ratio has increased by 51 points of percentage between 1990 and 2000 (WTO, 2004), the total number of foreign-born individuals residing in OECD countries has increased in the same proportions (51%) over that period, a figure that jumps to 70% for highly-skilled migrants against only about 28% for low-skilled migrants (Docquier and Marfouk, 2004).

What are the consequences of this human capital flight for sending (developing) countries? In a world of perfect competition with complete markets, the free mobility of labor would seem to be Pareto-improving: migrants receive higher incomes, natives in the receiving countries can share the immigration surplus, and remaining residents in the sending countries can benefit from the rise in the land/labor and capital/labor ratios. However, in the case of highly-skilled migrants, such labor movements also generate a number of externalities that have to be factored in. First, skilled migrants are net contributors to the government budget and their departure, therefore, increases the fiscal burden on those left behind (fiscal externality). Second, skilled

labor and unskilled labor complement one another in the production process; in a context of scarcity of skilled labor and abundant unskilled labor, as is the case in developing countries, skilled labor migration may have a substantial negative impact on low-skilled workers' productivity and wages (intragenerational spillover) and increase domestic inequality. Third, human capital depletion through emigration would seem to impact negatively on a country's growth prospects, inasmuch as human capital formation is now viewed as a central engine of growth (intergenerational spillover). Fourth, as demonstrated in various new economic geography frameworks (e.g., Fujita et al., 1999), skilled labor is instrumental to attracting FDIs and fostering R&D expenditures (technological externality); hence, the mobility of human capital is contributing to the concentration of economic activities in specific locations, at the expenses of origin regions. Finally, it may also induce positive feedback effects as skilled emigrants continue to affect the economy of their origin country. Such possible feedbacks include migrants' remittances, return migration after additional skills have been acquired abroad, and the creation of networks that facilitate trade, capital flows and knowledge diffusion.

Given the many channels involved, an evaluation of the exact impact of the migration of skilled labor (the "brain drain") for source countries is a very complex task. However, as we shall advocate in this paper, most of this impact may ultimately be captured through the effect of emigration on the composition of the labor force, that is, on the stock of human capital per worker remaining in the home country. Until recently, empirical attempts in this direction have been hampered by the lack of harmonized international data on migration by origin country and education level. In the absence of such empirical material, the debate has remained almost exclusively theoretical. The early "brain drain" literature of the 1970s emphasized its negative consequences for those left behind. Its main conclusions were that skilled emigration contributes to increased inequality at the international level, with the rich countries getting richer at the expenses of the poorer countries. By contrast, more recent contributions ask whether the traditional negative effects of the brain drain stressed in the early literature may be offset by possible beneficial effects arising from remittances, return migration, creation of trade and business networks, and possible incentive effects of migration prospects on human capital formation at home. In particular, a new brain drain theoretical literature has emerged around the idea that migration prospects may well foster human capital formation in developing countries even after actual emigration is netted out; this literature studies the conditions under which the overall effect of the brain drain may be positive and, consequently, result in reduced international inequality.

During the last two decades, there has been a significant increase in the magnitude of the brain drain. However, as recent theories show, it could be that some developing countries have experienced a social gain from this brain drain. We first summarize in Section 2 the data on the magnitude of the brain drain, and then provide new estimates on the international mobility of the highly skilled; our measures are based

on immigration data collected from nearly all OECD countries for 1990 and 2000 by Docquier and Marfouk (2004). These data show that the brain drain has gained in magnitude over the period covered although substantial differences remain across countries and regions. Section 3 presents the theoretical arguments of the "new" and "old" brain drain literatures in a fully harmonized framework: we first review the early brain drain literature, and contrast it to more recent models. We also review the various channels whereby skilled migrants may impact on their home country after they have left (remittances, return migration, networks), and provide evidence on these different channels when available. Section 4 is dedicated to policy discussions, with emphasis on migration policy, education policy, and fiscal policy in a context of international migration. Section 6 concludes.

Figure 1. Skilled workers' and total emigration rates
(with 2-order polynomial trend)

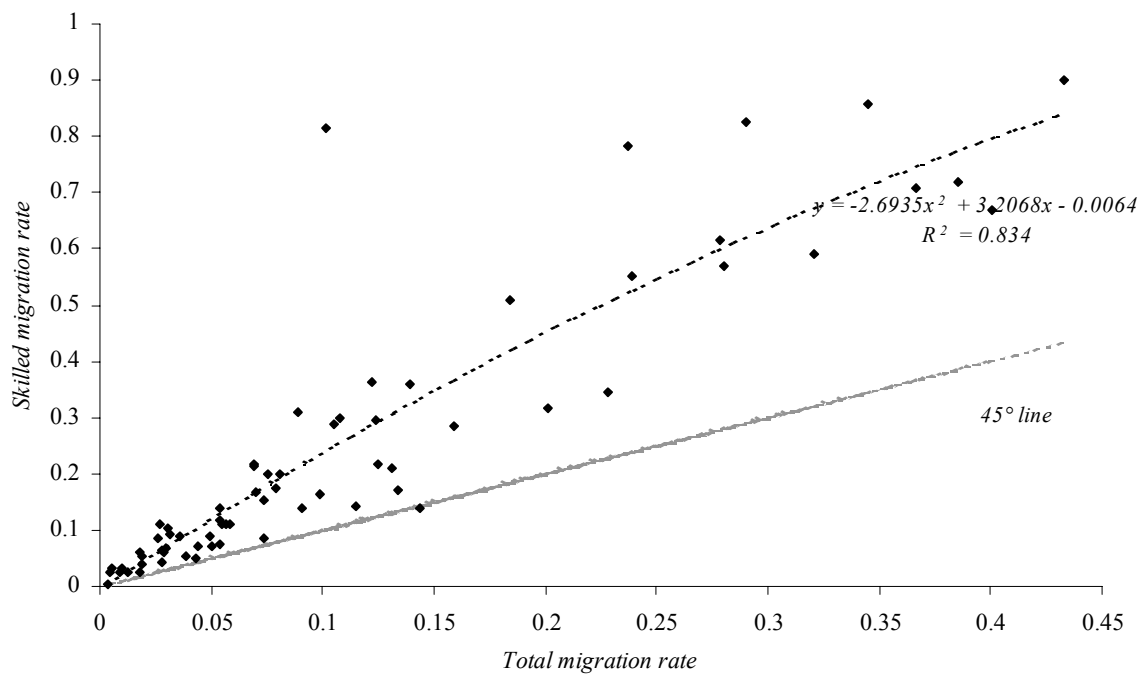
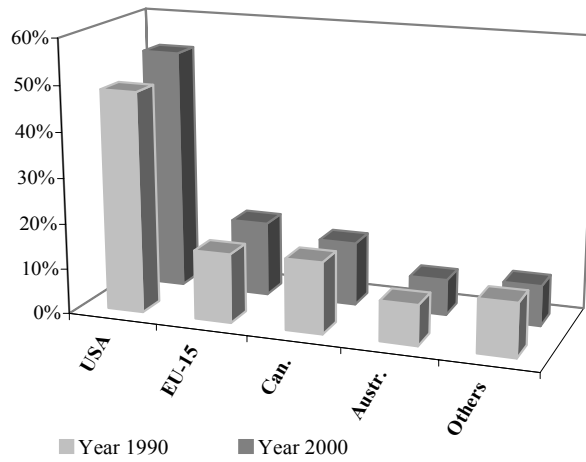
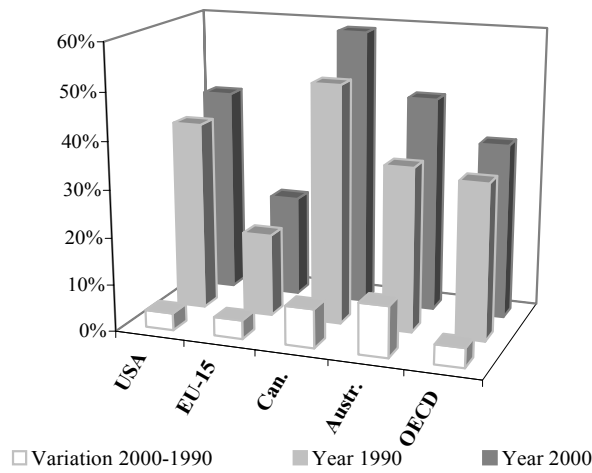


Figure 2. Immigration structure in the OECD area

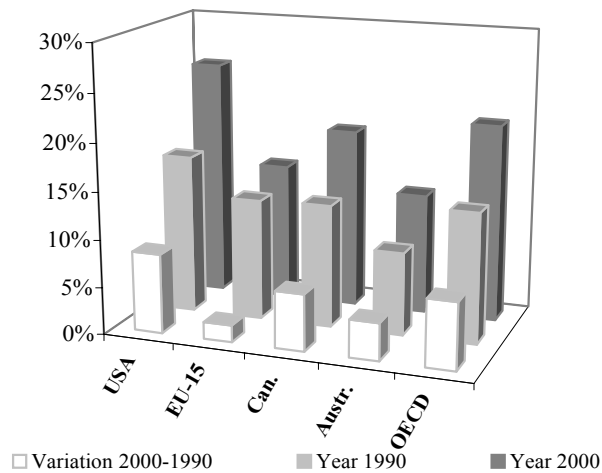
A. Destination of skilled immigrants in percent of the OECD



B. Skilled immigrants in percent of the immigration stock



C. Percentage of skilled immigrants from low income countries



**Table A. Emigration (stocks or rates) of skilled workers in selected countries
(excluding countries with population < 4 millions)**

	Emigration stock in 2000		Emigration rate in 2000		Emigration rate in 2000	
	<i>30 largest stocks</i>		<i>30 highest rates</i>		<i>30 lowest rates</i>	
1	United Kingdom	1 542 011	Haiti	81.6%	Sweden	4.4%
2	Philippines	1 260 879	Somalia	58.6%	Egypt	4.2%
3	India	1 021 613	Ghana	42.9%	China	4.2%
4	Germany	1 016 007	Mozambique	42.0%	India	4.2%
5	China	906 337	Sierra Leone	41.0%	Moldova	4.2%
6	Mexico	901 347	Vietnam	39.0%	France	3.9%
7	Canada	566 833	Nigeria	36.1%	Libya	3.8%
8	Italy	470 331	Madagascar	36.0%	Burma (Myanmar)	3.4%
9	Vietnam	446 895	El Salvador	31.5%	Venezuela	3.3%
10	United States	428 078	Nicaragua	30.9%	Brazil	3.3%
11	Korea, North	422 518	Lebanon	29.7%	Burkina Faso	3.3%
12	Korea, South	384 497	Croatia	29.4%	Belarus	3.0%
13	Poland	379 266	Cuba	28.9%	Nepal	2.7%
14	Cuba	336 419	Hong Kong	28.7%	Georgia	2.6%
15	Japan	331 892	Papua New Guinea	28.2%	Azerbaijan	2.6%
16	France	301 717	Sri Lanka	27.5%	Spain	2.6%
17	Iran	282 587	Kenya	26.3%	Argentina	2.5%
18	Taiwan	280 710	Angola	25.6%	Australia	2.3%
19	Russian Federation	263 041	Senegal	24.1%	Paraguay	2.3%
20	Jamaica	260 850	Honduras	21.8%	Thailand	2.2%
21	Hong Kong	254 805	Dominican Republic	21.7%	Indonesia	2.0%
22	Brazil	254 467	Uganda	21.6%	Japan	1.5%
23	Netherlands	240 494	Guatemala	21.5%	Russian Federation	1.3%
24	Ukraine	237 395	Burundi	19.9%	Kazakhstan	1.1%
25	Colombia	232 596	Rwanda	19.0%	Uzbekistan	1.0%
26	Ireland	220 545	Serbia and Montenegro	17.4%	Kyrgyzstan	0.7%
27	Romania	217 198	Ethiopia	17.0%	Saudi Arabia	0.7%
28	Peru	183 915	United Kingdom	16.7%	Tajikistan	0.7%
29	Pakistan	174 884	Tanzania	15.8%	United States	0.5%
30	New Zealand	172 582	Slovakia	15.3%	Turkmenistan	0.1%

Figure 3. Skilled workers emigration rates by country group

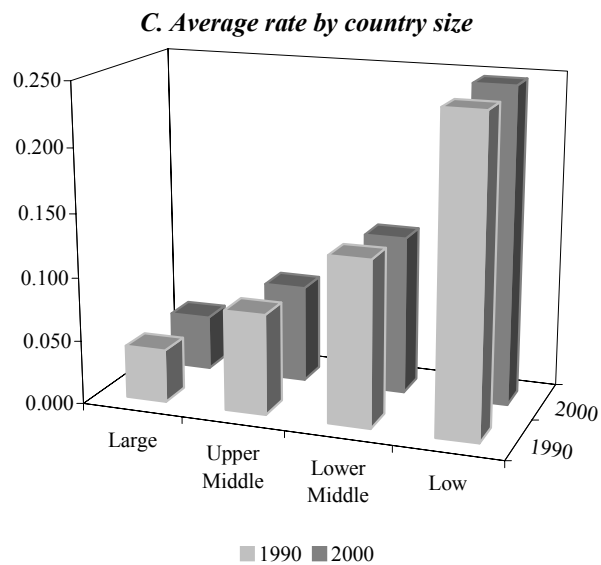
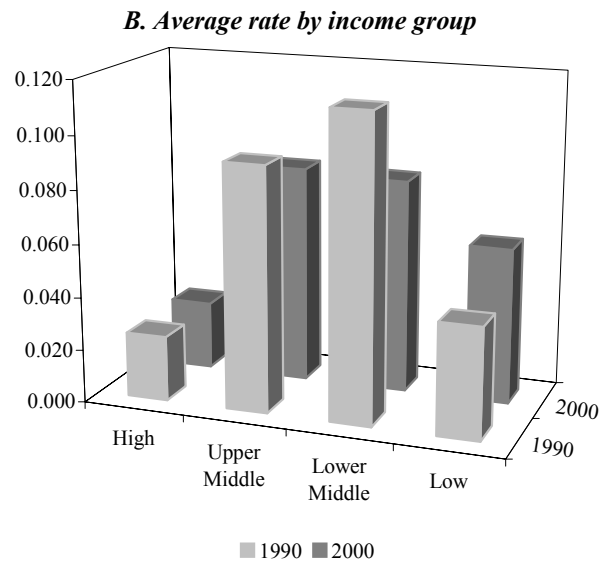
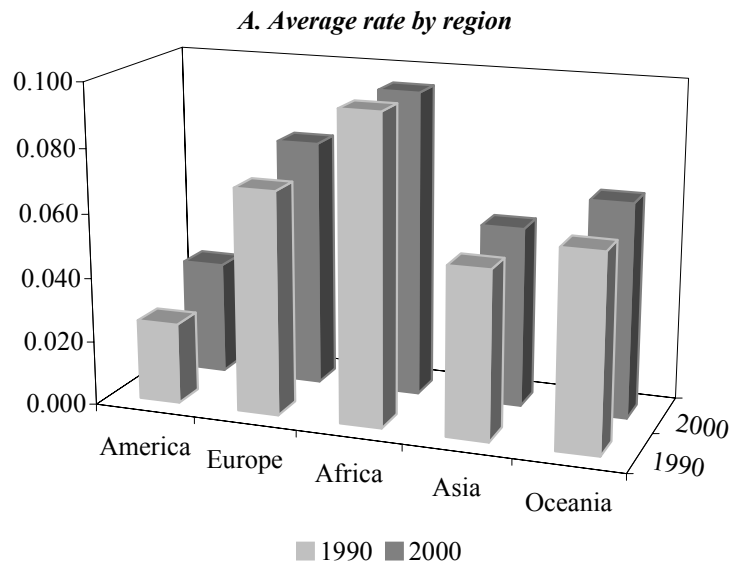


Figure 4. Emigration rate of the highly skilled - world map

