The Balance of Brains: Corruption and High Skilled Migration

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Discussion Paper 2013-10

Institut de Recherches Économiques et Sociales
de l'Université catholique de Louvain

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The Balance of Brains: Corruption and High Skilled Migration

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Abstract

In a mobile labor market, a high emigration rate of high skilled workers is not necessarily a problem, if counterbalanced by a high immigration rate. However, some countries experience a net gain of high skilled while others a net loss. Corruption is part of the explanation, acting through two different channels: first, it pushes skilled natives to virtuous countries, where they can find a job based on meritocratic criteria; second, it discourages the entry of foreign talents, which would hardly have access to string-pulling recommendations. This might induce a prolonged loss in human capital and vanish investments in education.

Keywords: migration / high-skilled / corruption

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Human capital is a crucial factor in economic development and growth [1]. Since a country's workforce is constituted by national and foreign workers, policies boosting education and skills for natives are as important as migration policies attracting high skilled workers from abroad. However, while investments in education have significant effects mainly in the long run, "importing" high skilled migrants immediately affects human capital stocks.

Foreign high skilled contribute to the host country's economy at least as much as natives. Five of the eight American citizens who received Nobel Prizes in sciences in 2009 were immigrants [2] and foreign born often outperform natives in terms of exceptional contributions to science [3]. For these reasons, policies attracting high skilled have a long tradition in countries like Australia, Canada and New Zealand, and are becoming more common in Europe [4]. At the same time, governments are trying to keep high skilled natives from emigrating [5]. High skilled workers are mobile and flexible: they are more sensitive to foreign incentives, and, compared to other groups of workers, their costs of migrating seem to be lower [6]. A high emigration rate per se is not necessarily a problem, if counterbalanced by a high immigration rate[1]. Indeed, what really matters for a country is to have a positive "balance of brains", i.e. inflows of high skilled immigrants higher than outflows of high skilled emigrants. A recent article of The Economist highlights the importance of this phenomenon for the case of Italy: *"What distinguishes Italy from its peers is not the absolute number of its exiled graduates [...], but that it has a net "brain*

[1] Of course, there might be different outcomes in having a homogeneous vs. heterogeneous (in terms of culture and nationality) human capital stock, as well as experiencing a high turnover vs. a stable composition of it. However, for the sake of our analysis, we only focus on the quantitative aspect, rather than studying the qualitative compositional effects.

drain", something more typical of a developing economy. In other words, the number of educated Italians leaving the country exceeds the number of educated foreigners entering it."[7].

What makes some countries more attractive than others for high skilled workers? Wage premia, skill-selective immigration policies [4], network effects and cost factors [8] matter. One issue that has not received any attention yet is corruption. We argue that is a major determinant of migration decisions of high skilled workers and thus of net migration flows. First, skilled natives will prefer leaving corrupt home countries and moving to relatively more virtuous countries, where they can find a job based on meritocratic criteria; second, foreign talents will not be attracted by a corrupt labor market, where they would hardly have access to any family ties and political affiliations. As a consequence, the country's economy might experience a prolonged loss in human capital, driven by an unfair labor market where string-pulling recommendations and family connections matter more than skills and performances.

To empirically assess the role of corruption in explaining high skilled migration, we study differences in net flows across countries. We use data from Docquier et al. [9] on the stocks of migrants aged 25 and older by origin and destination country in 1990 and 2000[2]. The ICRG corruption index is our measure of corruption[3]. Figure 1 illustrates how countries with low corruption levels, like Germany and UK, experience net inflows of high skilled

[2] Flows are computed as the 2000-1990 difference in stocks of foreign born people, aged 25 and older, with tertiary education. For more information on this variable, refer to [9].

[3] The index measures to which extent "high government officials are likely to demand special payments" and "illegal payments are generally expected throughout lower levels of government" in the form of "bribes connected with import and export licenses, exchange controls, tax assessment, policy protection or loans" [10]. Each country in the pool receives a score from zero to six, where six means no corruption and zero represents the highest level. We rescale the index to make it increasing in corruption in absolute terms (so that zero indicates no corruption and 6 indicates maximum level of corruption).

migrants. On the other hand, highly corrupt countries like Italy or Mexico experience net outflows of high skilled migrants. To better study the phenomenon, beyond this descriptive evidence, we perform some econometric analysis: We regress the corruption index on the net flow of high skilled migrants (weighted by the population), and we find a negative correlation (significant at 1% level in a two-tailed *t* test), meaning that highly corrupt countries, experience a net loss of high skilled workers (Table 1, column 1). The correlation remains significant even when we control for GDP per capita[4] (Table 1, column 2). This means that our result is not driven by the fact that countries with relatively higher GDP per capita tend to be net receivers of high skilled migrants and to have lower corruption levels. Indeed, for the same level of GDP per capita, more corrupt countries are more likely to experience net outflows.

As we highlighted before, corruption might affect net flows through two different channels: first, it might favor outflows by pushing high skilled natives to migrate to other less corrupted countries; second, it might hamper inflows by discouraging the entry of foreign talented workers. To disentangle these two effects and understand how corruption acts on the two channels, we separately regress our corruption variable on the inflows and outflows, weighted by the population (Table 1, columns 3 and 5). As a robustness check, we also control for GDP per capita (Table 1, columns 4 and 6). The results show a negative and significant correlation (at 1% significance level) between corruption and inflows, meaning that the higher the corruption of the country, the lower will be the inflows of foreign high skilled workers. At the same time, there is a positive and significant correlation (at the 5% significance level, but only when controlling for GDP per capita)

[4] Data for GDP per capita comes from the World Bank Database. We use levels from 1990 in order to avoid simultaneity problems.

between corruption and outflows, indicating that high skilled people are more likely to move abroad if their origin country is highly corrupt. Thus, the net loss of talented workers seems to be driven by both the lack of incoming and the boost of outgoing high skilled. However, the first effect shows to be stronger in terms of magnitude, statistical significance and explanatory power of the model. More specifically, while in the inflow regressions (Table 1, columns 3 and 4), we observe a high explained variance of the dependent variable (R^2=0.27 and R^2=0.32 respectively), the model has weak explanatory power for outflows (Table 1, columns 5 and 6; R^2=0.02 and R^2=0.07 respectively). This might be due to the fact that other important factors play a role[5], and it suggests that corruption acts more as an obstacle for inflows than as an incentive for outflows.

Implications

Where corrupting bureaucrats, officials and civil servants - through family ties and political affiliations - is the key to access the job market (and especially high-profile and prestigious jobs), skills and talents matter less. Corruption is detrimental for both inflows and outflows: it favors emigration of high skilled natives and reduces immigration of foreign talents, thus creating a net deficit of high skilled. This effect is likely to be extremely problematic in the long run, since it leads to a continuous deterioration of human capital stocks. It might induce a vicious circle leading to a decrease in productivity levels and worse economic conditions. Hence, fighting corruption is not only an important short and medium term policy concern, but has even more relevant implications in the long run, as it might have long lasting effects on human capital stocks and, possibly, economic growth.

Another crucial implication of our analysis is that corrupt countries' investments in

[5] Like the impossibility to leave the country or the low availability of high skilled people in corrupt countries.

education could significantly benefit other – more virtuous – countries. When people can easily emigrate to more attractive and fair environments, the high skilled workforce produced in corrupt countries is likely to become part of more virtuous countries' human capital stocks. Thus, in presence of corruption, a country's investments in education might fade away and become a positive externality for others. In the very flexible and mobile 21st century labor market, policies oriented to enhance natives' education and skills are a necessary, but not a sufficient condition to build tomorrow's human capital. Governments' policy agendas should also focus on fighting corruption in order to create a fair labor environment, able to keep native and attract foreign talents.

ACKNOWLEDGEMENTS

We thank J. Swinnen and D. Tannenbaum for their comments. Financial support from FWO-Flanders (Squicciarini) and Belgian French-speaking Community, convention ARC 09/14-019 on "Geographical Mobility of Factors" (Ariu) is gratefully acknowledged.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

References

1. P. M. Romer (1986) Increasing Returns and Long-Run Growth. *Journal of Political Economy*, **98** (5): 1002-1037.
2. US Council of Economic Advisors Economic (2007) Report of the President. (Washington, DC)
3. S. G. Levin, P. E. Stephan (1999) Are the Foreign Born a Source of Strength for U.S. Science? Science **285** (5431): 1213–1214
4. S. Bertoli, H. Brucker, G. Facchini, A.M. Mayda, G. Peri (2011) The Battle for Brains: How to Attract Talent. *CEPR project, Fondazione Rodolfo Debenedetti*
5. L. Simula and A. Trannoy (2012) Shall We Keep the Highly Skilled at Home? The Optimal Income Tax Perspective. *Social Choice and Welfare* **39**(4): 751-782.
6. D. Chiquiar and G. Hanson (2005) International Migration, Self-Selection, and the Distribution of Wages: Evidence from Mexico and the United States. Journal of Political Economics. 113(2): 239-281
7. The Economist (2011) No Italian jobs. http://www.economist.com/node/17862256
8. M. Beine, R. Noel, L. Ragot (2011) The Determinants of International Mobility of Students. Cesifo Working Paper Series 3848
9. F. Docquier, B. L. Lowell, and A. Marfouk (2009) A Gendered Assessment of Highly Skilled Emigration. Population and Develpoment Review 35(2): 297–322
10. S. Knack, P. Keefer (1995) Institutions and Economic Performance: Cross- Country Tests Using Alternative Institutional Indicators. Economics and Politics 7(3): 207–228

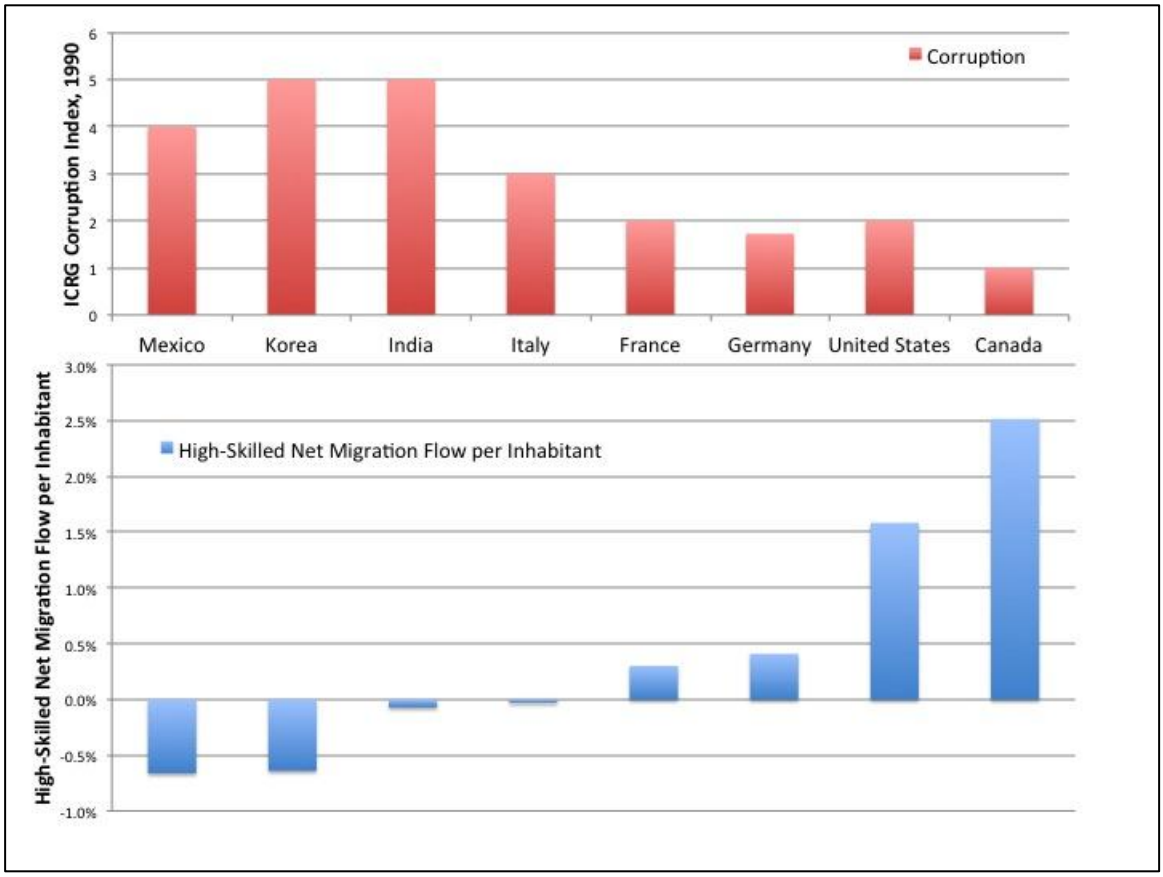
Figure 1: Corruption in 1990 and net migration flows

Table 1: Corruption and net migration flows

Dependent Var.	(1) Net	(2) Net	(3) Inflow	(4) Inflow	(5) Outflow	(6) Outflow
Corruption	-0.0028[a]	-0.0032[a]	-0.0020[a]	-0.0015[a]	0.0009	0.0018[b]
	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)
GDP per capita	No	Yes	No	Yes	No	Yes
Constant	0.0073[a]	0.0157[c]	0.0092[a]	-0.0025	0.0017	0.0185[b]
	(0.002)	(0.009)	(0.001)	(0.004)	(0.002)	(0.008)
Observations	123	115	123	115	123	115
R-squared	0.1522	0.1570	0.2691	0.3184	0.0194	0.0702

Robust Standard errors in parentheses, a p<0.01, b p<0.05, c p<0.1

Figure 1: Corruption and Net Migration Flows



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ISSN 1379-244X D/2013/3082/10